

CIVIL AERONAUTICS JOURNAL



ISSUED TWICE MONTHLY BY THE CIVIL AERONAUTICS AUTHORITY

VOLUME 1

WASHINGTON, NOVEMBER 1, 1940

NUMBER 21

Secretary Jones Addresses Air Advisory Council At First Meeting

TELLS NEWLY FORMED GROUP OF AVIATION GROWTH:
FRANK A. TICHENOR, OF NEW YORK, ELECTED CHAIRMAN

Aviation is "fast becoming one of the most important industries in the world, and is going to save our heads if we save them," Secretary of Commerce Jesse H. Jones told 18 members of the Department's new Aeronautical Ad-

visory Council, which concluded its first 2-day conference on October 4.

The Council, selected by Assistant Secretary Robert H. Hinckley from all sections of the country and all phases of civil aviation and serving without pay, elected Frank A. Tichenor, aviation publisher of New York City, as chairman.

It appointed temporary committees to work on a variety of current problems in aviation and report on them at its next session, scheduled for November 7, when permanent committees will be named.

The Council will be a permanent advisory organization to consult with Department of Commerce officials in the formulation of policies. The purpose was explained thus by Assistant Secretary Hinckley:

"In today's tremendous expansion of aviation, nearly every official decision has far-reaching implications. Our first obligation is to help meet this emergency. But we also must plan how to use the tremendous facilities we now are creating for peace and commerce, once this emergency has been met."

Attending were: Edmund T. Allen, pilot and engineer, Seattle; Maj. Jack Berry, airport manager, Cleveland; William Burden, aviation investment expert, New York City; Guy Gannett, publisher, Portland, Maine; William J. Graham, aviation insurance, New York City; Col. Edgar S. Gorrell, transport association executive, Chicago; Franklin K. Lane, representing Col. John H.

Jouett, Washington, D. C.; Casey Jones, flight school operator, Newark; Milton Knight, manufacturer, Toledo; Charles Mattoon, air personnel executive, Buffalo; Merrill C. Meigs, newspaper executive, Chicago; Dr. Clark Millikan, aviation scientist, Los Angeles; Thomas A. Morgan, manufacturer, New York City; Charles L. Morris, State aviation official, Hartford; Laurence Sharples, private flying association executive, Philadelphia; William Stout, engineer and aviation designer, Detroit; Frank A. Tichenor, aviation publisher, New York City; and Capt. Gill Robb Wilson, air association executive, Washington, D. C.

Flight Training Restricted at 46 Busiest Airports

In the interest of safety to student fliers, airline passengers and the expanding military air force, the Civil Aeronautics Administration has restricted Civilian Pilot Training instruction flying from 46 of the Nation's busiest airports, Col. Donald H. Connolly, Administrator of Civil Aeronautics, announced on October 7.

Civilian Pilot Training flight units now located at these fields do not have to pick up "bag and baggage" and move elsewhere, Colonel Connolly said. They still can base there as before. But their flight operations at these sites must be limited to flying their training aircraft from hangars to outlying fields and back to the hangars. All flight instruction must be carried on at outlying fields at least 6 miles from the airport named, he explained.

"Necessity for this action has been growing steadily since June," Colonel Connolly said. "Airline business has been increasing very rapidly. At the same time, military aircraft have been based, or will be based, on many civil

See TRAINING RESTRICTED (page 472)

SPECIAL NOTICE

Beginning with this issue, the CIVIL AERONAUTICS JOURNAL will print in full all amendments to the Civil Air Regulations, except for occasional amendments which may be exceedingly long. In the latter case, an abstract will fully describe the nature and purpose of the amendment's provisions so the reader may determine whether he requires the full text.

There will also appear in each issue of the *Journal* a tabulation showing the status of all active Parts of the Civil Air Regulations and the amendments thereto which are in effect. The chart shows at a glance how to obtain those Parts immediately available, and explains the progress toward publication of those Parts in process of printing or revision.

These new services will appear regularly in the official actions section of the *Journal*, and may be found in this issue on page 470.



Published with the approval of the
Director of the Bureau of the Budget

Issued on the 1st and 15th of each month. Sub-
scription \$1 (foreign \$1.50) per year. Single copies
5 cents. Sold by the Superintendent of Documents,
U. S. Government Printing Office, Washington, D. C.

IN THIS ISSUE

Instrument flying hazards studied
. . . Aerial weather stations es-
tablished in Alaska.

PRIVATE FLYING

(Page 463)

Administrator suspends school's
certificates . . . New type ap-
provals . . . Designation of med-
ical examiners.

AIR SAFETY

(Page 464)

Inexperience large factor in aircraft
accidents; individual crash re-
ports by Safety Bureau list
probable causes, comments . . .
Cumulo-nimbus cloud hazards.

AIRWAYS AND AIRPORTS

(Page 466)

C. A. A. sendings aids for Alaska
airways . . . C. A. R. Amend-
ment redesignates control zones.
. . . Airport projects approved.
(P. 472) . . . Aeronautical charts . . .

AIR TRANSPORTATION

(Page 467)

Domestic air carrier statistics for
1938, 1939, and the first 8 months
of 1940; Domestic air carrier
traffic statistics for August 1940.

OFFICIAL ACTIONS

(Page 468)

Abstracts of opinions and orders and
full texts or abstracts of regula-
tions issued by the Civil Aero-
nautics Board during the period
1-15, 1940.

Instrument Flying Hazards Studied

Report Discusses Risks of Flying in Instrument Weather in Absence of Proper Instrument Training

Pilots who do not have proper instru-
ment training or who lack instrument
ratings should not operate aircraft
during periods of instrument weather.

This is the tenor of a general descrip-
tion of the risks of flying in instrument
weather in absence of proper instru-
ment training which has been prepared
by the General Inspection and Aircraft
Airworthiness Sections of the Civil
Aeronautics Administration. It has
been distributed to pilots, who at the
same time were urged to "spread the
word around" since they may be
instrumental in saving the lives of
pilots and their passengers where opera-
tions under instrument conditions are
being attempted in the absence of any
training for such flying or an instrument
rating.

FULL TEXT OF THE REPORT

Pending the completion of a more com-
prehensive discussion of the results of
flying in instrument weather without
suitable preparation, we wish to ac-
quaint you with information, now in our
possession, resulting from studies of
several fatal accidents which studies
conclusively demonstrate that some of
these fatal accidents were caused by
aircraft maneuvers resulting from opera-
tions under instrument flying condi-
tions by pilots who lacked training for
such flying or an instrument rating.

In the complete discussion of this
subject which we hope to forward you
in the near future, we shall attempt to
supply a useful discourse on the aero-
dynamic loads on structures resulting
from maneuvers which may develop as a
result of unskilled flying under instru-
ment conditions. However, pending the
completion of this material, *we wish
to take advantage of an early contact at this
time to urge you to avoid religiously
experimenting with flights under instru-
ment conditions without suitable training
or qualifying for an instrument rating.*

As you well know, it is quite difficult
to predict the extent of an instrument
weather condition and correspondingly
difficult to predict the extent of the tur-
bulence which might be encountered
once you commence flight into an area of
obscured visibility. The most common
difficulty experienced under these con-
ditions is for the airplane to get into a
dive with the result that subsequent
attempts to lower the speed of flight
produce excessive loads on the airplane
structure. This maneuver also may
result in attitudes difficult to manage
during flight on instruments. The rap-
idity with which such hazards increase
is more pronounced as the "cleanness"
of the airplane increases. There are,
of course, a number of certificated air-

plane types of sufficient "cleanness" so
as to result in a rapid increase in speed
if the airplane is improperly controlled
for but a short time.

Please take it upon yourself to discuss
this subject with your fellow pilots and
spread the word around. You may be
instrumental thereby in saving the lives
of pilots and their passengers where
operations under instrument conditions
are being attempted in the absence of any
training for such flying or an instrument
rating.

If you have not already had an oppor-
tunity to study Aircraft Airworthiness
Section Report No. 10 entitled, **LOAD
FACTOR INFORMATION FOR PILOTS**, it
is suggested that you obtain a copy by
writing the Publications and Statistics
Division, Civil Aeronautics Authority,
Washington, D. C. In this report an
endeavor has been made to present a
simple explanation of airplane load
factors and the limitations to flight
maneuvers which should be observed so
that safe load factors will not be
exceeded.

Aerial Weather Stations Established in Alaska

The United States Weather Bureau,
in cooperation with the Army, has
established radiosonde stations at An-
chorage, Bethel, Ketchikan, Nome, and
Point Barrow, Alaska.

One daily radiosonde observation will
be taken at each of these stations, and
the reports placed on the teletype
circuit at Seattle, Wash. At Bethel,
Ketchikan, and Point Barrow, two pilot
balloon observations also will be taken
daily. As in the case of the radiosonde
observations, the pilot balloon observa-
tions are to be transmitted from Seattle
by teletype.

Weather Bureau officials said the
readings taken at the new Alaskan sta-
tions will be useful for general weather
forecasting at Seattle and at the Weather
Bureau station at Juneau, Alaska,
particularly in forecasting or aviation
weather. The data also will be useful
to Pan American Airways in operation
of its new Seattle-Alaska air route.

The data thus collected also will be
sent to the Army aviation base at
Fairbanks, Alaska, to use for advices in
Army flying operations in Alaska.

Radiosonde observations were begun
at Nome on September 15, at Point
Barrow on September 17, at Ketchikan
on September 20, and at Anchorage on
September 22. Observations are sched-
uled to begin at Bethel shortly.

Private Flying

Administrator Suspends School's Certificates

Board Orders New Orleans Operators To Show Cause Why Certificates Should Not Be Revoked for Violations

For the first time since the inception of the Civilian Pilot Training Program, the Administrator of Civil Aeronautics has found it necessary to suspend the certificates of one of the participating private flight operators.

At the instance of the Administrator, the Civil Aeronautics Board has issued an order to Edna Gardner Kidd and Raymond Lee Kidd, operators of the Southern Aviation School at New Orleans, La., to show cause why their pilot's certificates and the certificate of the school should not be revoked for repeated violations of the Civil Air Regulations.

Mrs. Kidd, who held a commercial pilot's certificate, is charged with falsifying records and log books in order to make it appear that she had given certain flying instruction when she had not done so. It is further alleged that Mrs. Kidd permitted her husband, who did not hold an instructor's rating, to take students aloft for training, and at completion of the flights signed the log books certifying that she personally had given the instruction.

Mr. Kidd, who held a private pilot's certificate only, is charged with having

flown the civil airways in the vicinity of New Orleans while carrying student pilots, and with giving flight instruction without being possessed of a valid instructor's rating. On one occasion, the charges recite, Mr. Kidd flew his airplane low and dangerously over the Coast Guard Station at Biloxi, Miss., while carrying a student.

The Kidds are jointly charged with using airplanes which were not approved as suitable for use in the Civilian Pilot Training Program, with improper maintenance of aircraft used for instruction of students, and with permitting airplanes which had been damaged to be flown before they had been inspected and approved for flight by an authorized representative of the Civil Aeronautics Administration.

It is the contention of the Civil Aeronautics Administration that Mr. and Mrs. Kidd, in permitting the commission of the acts set out in the "show-cause order," demonstrated carelessness and inattention to their duties as operators of an approved primary flying school and disregarded the principles of safety with respect to the operation and conduct of such a school.

Engines

Rearwin, Ken Royce 7G, 7 cylinder radial air cooled, 120 horsepower at 2,225 revolutions per minute at sea level pressure altitude (type certificate No. 52, September 7, 1940).

Kinner, B-54, 5 cylinder radial air cooled, 125 horsepower at 1,925 revolutions per minute at sea level pressure altitude (type certificate No. 51, September 14, 1940).

Propellers

Hartzell, 824-C, wood, 6-foot 0-inch diameter, 3-foot 10-inch pitch, 65 horsepower, 2,200 revolutions per minute (type certificate No. 722, September 6, 1940).

Hartzell, 829-A, wood, 6-foot 5-inch diameter, 3-foot 2-inch pitch, 50 horsepower, 1,900 revolutions per minute (approved type certificate No. 530, September 6, 1940).

Hartzell, 843, wood, 6-foot 4-inch diameter, 3-foot 10-inch pitch, 65 horsepower, 2,350 revolutions per minute (type certificate No. 722, September 6, 1940).

Designation of Medical Examiners

During the month of September 1940 the following-named physicians officially were authorized to make physical examinations for the Administration.

ARKANSAS.—Dr. Jett Scott, Medical Art, Bldg., Hot Springs; and Dr. Robert R. Kirkpatrick, J. K. Smith Clinic, Sixth and Walnut, Texarkana.

CALIFORNIA.—Dr. William M. Miller, 320 Aeolia Drive, Auburn; Dr. Frederick F. Ragsdale, 717 Twelfth Street, Paso Robles; and Dr. Henry W. Seiger, 2803 Main Street, Ocean Park, Santa Monica.

COLORADO.—Dr. Christopher H. Martin, Ochsner Hospital, 805 Fifth Avenue, Durango.

IOWA.—Dr. Arthur F. Fritchen, 109½ Water Street, Decorah.

MAINE.—Dr. Victor H. Simecek, 179 Maine Street, Brunswick.

MICHIGAN.—Dr. James L. Vincent, 3714 Monroe Avenue, Wayne.

MINNESOTA.—Dr. R. R. Swanson, 310 Freeborn County National Bank Bldg., Albert Lea.

MISSOURI.—Dr. Wade Hampton Miller, 1306 Bryant Bldg., Kansas City.

NEW YORK.—Dr. Charles M. Robin, 424 New York Avenue, Huntington; Dr. George D. Hoffeld, 156 Third Street, Troy; and Dr. Lawrence E. Henderson, 168 Sterling Street, Watertown.

OREGON.—Dr. Henry H. Norton, 1162 Willamette Street, Eugene.

PENNSYLVANIA.—Dr. Ralph E. Schmidt, 724 Sassafras Street, Erie; Dr. James Hamilton, Highland Avenue and Wood Street, Greensburg; and Dr. Gerald N. Fluegel, 73 West Ross Street, Wilkes-Barre.

SOUTH CAROLINA.—Dr. Harold J. Bowen, 89 Broad Street, Charleston.

TENNESSEE.—Dr. Harlow H. Taylor, Doctor's Building, Cookeville.

PUERTO RICO.—Dr. John R. Bierley, St. Luke's Hospital, Ponce.

The following-named physicians have changed their addresses during the month, their new addresses being as follows:

Dr. Archibald W. Thomson, 295 Mill Street, Poughkeepsie, N. Y.

Dr. Wilber K. Mylar, 2520 Capitol Avenue, Cheyenne, Wyo.

Dr. Wallace C. Shearer, Jr., Box 1628, Grand Coulee, Wash. (formerly at Wilbur, Wash.)

NEW TYPE APPROVALS

(Approval numbers and dates of assignment in parenthesis)

Beginning with this issue of the Civil Aeronautics Journal, the department devoted to approvals of aircraft, engines, propellers, appliances, and gliders, in addition to listing new type approvals, will carry a complete list of new models which have been added to old type approvals.

TYPE CERTIFICATES

Aircraft

Culver, LCA, 2 place closed land monoplane. Engine, Continental A-75-8 (730, September 7, 1940).

Gliders

Briegleb, BG-6, 1 place closed land monoplane, class II (6, September 14, 1940).

Engines

Church, V-8, 248 8 cylinder vee air cooled, 93 horsepower at 2,900 revolutions per minute at sea level pressure altitude (224, September 26, 1940).

AIRWORTHINESS CERTIFICATES

Aircraft

White, New Standard D-25-B, 1 place closed land biplane. Engine, Wright Whirlwind R-760E-1 (2-557, September 3, 1940).

NEW MODELS ADDED TO OLD TYPE APPROVALS

Aircraft

Akron, B75L, 2 place closed land monoplane. Engine, Lycoming GO-145-C2 (type certificate No. 715, September 4, 1940).

Aeronca, 65-LB, 2 place closed land monoplane. Engine, Lycoming O-145-B2 (type certificate No. 702, September 11, 1940).

Aeronca, 65-CA, 2 place closed land monoplane. Engine, Continental A-65-8 (type certificate No. 675, September 11, 1940).

Appliances

United Air Lines, safety belt, models 3U-362 and 3U-390. Model 3U-362 approved for two persons (auxiliary belt) and model 3U-390 approved for one person (type certificate No. 128, September 3, 1940).

Irving, parachute, model S-BD-1, back type, standard canopy, 24-foot diameter, white silk (type certificate No. 6, September 27, 1940).

AIR SAFETY

Inexperience Large Factor in Aircraft Accidents

Individual Crash Reports by Board List Probable Causes, Comments

Pilot inexperience was a large factor in the list of private flying accidents contained in the latest individual reports made public by the Civil Aeronautics Board. The reports include the probable causes of the mishaps, contributing factors, and in many cases, succinct comments which it is hoped will aid in preventing similar accidents occurring to other pilots.

As in the past, it was also found that a disregard of the Civil Air Regulations and the ignoring of common-sense flying rules also played an important part in the accidents covered in the reports.

Loose Control Stick Brings Crash and Serious Injury to Pilot.

Near Tampa, Fla., about 4:15 p. m. on March 2, Samuel P. Mims, a student pilot with 24 hours, while flying a Piper J3F-50, met with an accident which resulted in his serious injury. Student pilot Mims had just been checked for solo flights by his instructor at the Peter O. Knight airport, Tampa, and was permitted to continue solo flight practice. He made several take-offs and landings and on the last approach inadvertently pulled the control from its socket. The uncontrolled aircraft struck the ground heavily on its wheels and in a nose-down attitude, breaking both propeller blade tips. In the interim the student unfastened his safety belt, opened the throttle, reached forward into the front cockpit, and pulled the front control stick back. The aircraft took off in a steep climbing attitude, and after attaining an altitude of approximately 60 feet, it stalled and fell off to the right, striking the ground on its nose and right wing. Both wings, engine, propeller, and the front of the fuselage were damaged. Subsequent investigation disclosed that the control stick had been removed several times since the last 25-hour inspection

check of the aircraft and had not been bolted in the socket after its last replacement.

The Probable Cause.—Failure of the operator of aircraft to secure the control stick in its socket.

Comment.—This is one of several similar cases when a serious or fatal accident has occurred due to negligence.

Pilot Inexperience Causes Fatal Accident.

Near Sharon Springs, Kans., about 10:08 a. m. on December 3, 1939, Robert V. Merrell, a solo pilot with 10 hours, while engaged in a noncommercial cross-country day flight, met with an accident which resulted in serious injury to him and fatal injury to the passenger, Albert McGaghey. The plane was a Mussey-Ross Air Camper, certificate No. N-15497. Merrell, accompanied by a passenger, took off from a field about 7 miles south of Sharon Springs, apparently to hunt coyotes. The evidence indicates that during a right turn at low altitude, he lost control of the home-made aircraft which he was flying. The aircraft was demolished when it struck the ground.

The Probable Cause.—Failure of the pilot to maintain control of the aircraft during a turn at low altitude.

The Contributing Factor.—Inexperience of the pilot.

Instructor Fatality in Forced Landing Practice Accident

During practice in forced landings near Long Beach, Calif., about 10:15 a. m. on May 5, instructor William S. Duncan met with an accident which resulted in fatal injuries to himself and serious injury to his student, William R. Hill. Turbulent air conditions prevailed during a student instruction flight when the pilot closed the throttle and directed the student to make a simulated forced landing on a field which was bordered at one end by a ditch with high banks. The evidence indicates that the student maneuvered the aircraft near the ground at excessive speed during the approach and that the pilot was slow in taking over the controls and applying power to regain altitude and thus avoid striking the banked ditch at the far end of the field. The pilot placed the aircraft in a steep climbing right turn until a stall developed and the aircraft fell off into an

incipient right spin which continued until the aircraft struck the ground and was demolished. The pilot received fatal injuries and the student sustained serious injuries.

The Probable Cause.—The pilot stalled the aircraft while executing a steep climbing turn at low altitude.

The Contributing Factors.—Failure of the pilot-instructor to supervise properly a student instruction flight, and turbulent air conditions.

Comment.—Practicing simulated forced landings in turbulent air is compounding a danger.

Contact Flight Attempt In Unsafe Weather Brings Injuries to Two.

Near Martin, Wash., about noon on March 10, Clarence R. Soderland, a private pilot with 38 hours, while flying a Kinner Sportster, model K, met with an accident which resulted in serious injuries to himself and to his passenger-brother, Helmar Soderland, both of Seattle, Wash. Pilot Soderland, accompanied by his brother as passenger, took off from Seattle on a cross-country flight to Ellensburg, Wash. While flying at an altitude of about 8,000 feet, the pilot encountered a strong wind and a downdraft over the Cascade mountains. The pilot stated that despite placing the aircraft in a climbing attitude, it continued to settle until finally it pancaked to the ground in a clearing on the side of the mountain. Both pilot and passenger sustained serious injuries and the aircraft was demolished. The pilot further stated that part of the flight was made in clouds and that the aircraft gathered ice prior to the accident. The pilot was not possessed of an instrument flight rating.

The Probable Cause.—Action of the pilot in continuing contact flight into weather unsafe for contact flying.

The Contributing Factor.—Inexperience of pilot.

Inexperience Causes Pilot Injury.

Near Homdel, N. J., about 10:45 a. m. on November 16, 1939, Paul B. Tergis, a student pilot with 52 hours, while engaged in a noncommercial flight, met with an accident which resulted in his serious injury. The plane was a Piper Model J3F-50, certificate No. NC 24989. Tergis commenced a bank to enter a landing approach into the wind but across the narrow dimension of a small field near Homdel. He stalled the aircraft during the turn; the aircraft fell off into a spin, which continued until it struck the ground. The left wing, propeller, engine mount, fuselage, and landing gear were damaged.

The Probable Cause.—Pilot stalled the aircraft during a landing approach.

Contributing Factor.—Inexperience of the pilot.

Cumulo-Nimbus Cloud Hazards:—

PILOT'S LETTER OUTLINES DANGERS OF SOARING IN CLOUD FORMATIONS AND THUNDERSTORMS, DESCRIBES FLIGHTS, AND URGES USE OF EXTREME CAUTION IN OPERATIONS

Important information on the hazards encountered by glider pilots in cloud formations and thunderstorms is contained in a letter to the Director of the Safety Bureau of the Civil Aeronautics Board from Robert M. Stanley, an outstanding glider pilot and now chief pilot of Bell Aircraft Corporation. The communication is here presented to aid other pilots in avoiding the hazards enumerated by Mr. Stanley.

MR. STANLEY'S LETTER

"In response to your letter of October 8, I shall be glad to furnish the data which I have obtained concerning the strength and distribution of gusts to be found in cumulo-nimbus clouds. I have made a number of flights with a soaring plane into the interior of thunderstorms, and on one occasion, carried with me not only a barograph but also

Stunting at Low Altitude Seriously Injures Two.

At Newport Airport, Newport, R. I., about 5:30 p. m., on April 7, Everett Curtiss James, a student pilot, while engaged in a noncommercial flight, with one passenger, met with an accident which resulted in serious injury to both. The amount of James' flying time could not be ascertained. Charles R. Penner, owner of the plane, after completing a flight to the Newport Airport, parked the aircraft on the line and left to attend to some errands. According to the owner's statement, when he returned a short time later he observed his aircraft in flight although no one had received his permission to fly it. The evidence indicates that E. Curtiss James, a friend of the owner, and a student pilot whose certificate had expired, flew the aircraft without the owner's permission, and invited Gilbert Richardson to fly with him as a passenger. A take-off was made and after attaining an altitude of approximately 40 feet, the pilot commenced to circle the field. The aircraft was flying downwind when the pilot attempted a right wing-over to turn into the wind preparatory to landing. The aircraft stalled during this maneuver and fell off to the right. The pilot states that he pulled back on the control stick during the ensuing dive but that the dive continued until the aircraft struck the ground on the right wing and nose. Damage to the aircraft consisted principally of a broken propeller and landing gear, broken ribs and spars in the wings and a twisted engine mount.

The Probable Cause.—Pilot stalled the aircraft while executing an acrobatic maneuver at low altitude.

Contributing Factor.—Inexperience of the pilot.

an accelerograph synchronized in such a manner that I could coordinate the gusts with the rate of climb which they produced. I have likewise made several flights in the interior of thunderstorms using powered airplanes, and I am fairly familiar with the internal structure of this type of cloud.

"The rate of climb which is obtainable in even a mild cumulo-nimbus cloud is in excess of 3,000 feet a minute, and there are flights on record in which pilots of soaring planes have gained 20,000 feet in less than 5 minutes, showing that the vigorous convection to be found within these clouds is not only high but sustained. The sharp-edged gust¹ of 30 feet per second, which is used as the criterion of structural design, can easily be met and exceeded when flying under these extremely turbulent conditions.

"Soaring within thunderstorms, I have recorded accelerations of nearly 10g, only a small portion of which I attribute to pilot technique. Horizontal gusts sufficient to cause the airspeed meter to jump instantaneously 50 miles per hour in either direction have been encountered. This in itself represents a very severe condition, but an even worse condition exists due to the rapid fluctuations of these gusts. It is quite possible to have 4 or 5 oscillations of this amplitude occur in a period of less than 10 seconds. Striking head-on, the gust exerts a very powerful lifting action associated with the increase in indicated airspeed. However, if the gust strikes from the side, it gives a very severe shear-type reaction, during which one can feel the vertical surfaces momentarily stall due to the high instantaneous side slips. The gust in the vertical plane will, of course, result in a severe load factor to the airplane, and there is no reason to believe that gusts in the vertical plane are not equal in intensity to those actually measured in the horizontal plane mentioned.

"The disposition of gusts within a matured or nascent cumulo-nimbus cloud seems to bear a very definite pattern in that the central core of the cloud is rising quite smoothly but at a very high rate. If the cloud's vertical velocity is sufficient, naturally hail will be found, the size depending upon the vigor of the cloud. Surrounding this vertically moving air is a zone of extreme turbulence, resulting from the shearing action of the upward moving air reacting against the outer envelope of the cloud, which in all cases is moving downward at a rate approximately one-half the rate of the rise of the cloud's core. It is in this region that the maximum turbulence exists.

¹ See GUST LOAD FACTOR PRINCIPLES. Aircraft Airworthiness Report No. 7, CIVIL AERONAUTICS JOURNAL, Vol. 1, No. 17, Sept. 1, 1940.

"The vertical distribution within the cloud is approximately as follows: near the base of the cloud, the lift is mild and spread over a rather wide area. Ascending upward through the center, the rate of climb increases and the degree of turbulence in the boundary layer becomes more severe. At the level at which icing begins to appear and the rain turns to sleet, turbulence may be found even in the center core and will be most severe in the boundary zone. What exists above this icing level, I do not know first-hand, because of the fact that my soaring plane has always been equipped with a venturi-driven turn indicator, which has always iced-up at this point, necessitating my termination of the flight for reasons of safety.

"A well-developed cumulo-nimbus cloud will have a necked-in portion occurring at the level at which freezing occurs to its moisture content. Above this layer lies the familiar anvil top which is produced by the impact of the upward-moving air against the isothermal layer of the stratosphere. However, circling this necked-in portion, I have invariably noted that hail continued to fall from the anvil above, showing that there is a diffusion of the center core of air and probably a reduction of turbulence can logically be expected. In clouds which have not reached the cumulo-nimbus stage but are undergoing the early formation, turbulence is found to be greatest at the top.

"The intensity of the gusts and their disposition within the cloud seem to follow in general the pattern outlined above. It is possible for the air to be so gusty that an upward gust can be acting on one wing at the same time that a down gust is acting on the opposite, resulting in severe shearing action.

"These data have been given principally as a result of soaring flights using a sailplane with a wing load of 3.1 per square foot and ultimate strength factor of 12, fully equipped with blind flying instruments.

"Following one unusually severe flight inside a thundercloud, the rudder cables which had been prestretched to 60 per cent of design loads and were operating over ball-bearing sheaves had become so badly stretched that it was no longer possible to control the rudder. Other parts of the control system suffered to a lesser degree, the wing attachment fittings, whose yield point is approximately 8g, showed a readily measurable amount of permanent set.

"In closing, I would summarize approximately as follows: the interior of a thunderstorm represents a condition of extreme hazard which should never be entered by any pilot without parachute and recent experience in blind acrobatic flight, and should never be done in an airplane other than a plane of special design incorporating high factors of safety. In fact, it would be on the side of caution to avoid flying below or in the immediate vicinity of clouds of this description due to the extremely high rate of climb existing beneath such formations and the consequent danger of being sucked up inside the cloud before the plane's airspeed can have carried it away from that vicinity."

Airways and Airports

C. A. A. Sending Aids for Alaska Airways

Bureau of Federal Airways Sends Additional Heavy Construction Equipment To Expedite Present Work

The Bureau of Federal Airways of the Civil Aeronautics Administration is sending additional heavy construction equipment to Alaska to expedite completion of Territorial landing fields and radio stations in the interests of National Defense, Colonel Donald H. Connolly, Administrator of Civil Aeronautics, announced. Colonel Connolly also announced the recent completion of 16 new radio stations and five new emergency fields in Alaska.

The new construction equipment, which includes big caterpillar "trail-breakers," is being shipped by steamboat from Seattle.

"The original Alaskan Airway System, started last year, was intended primarily to serve commercial aviation," Colonel Connolly said. "Since the defense needs of the Army and Navy in that area have been made known to us we are doing everything possible to expedite the program. Severe weather, intense cold and ruggedness of the country make the Alaskan project one of our biggest jobs. When it is finished and coordinated with the stations now operated by the Signal Corps, the most remote sections of Alaska will have an airway and communications service as efficient as any in the United States."

Part of the airway radio stations are designed to guide airmen during bad weather. Others are communication stations set up to handle weather data and airway communications with other stations and with aircraft in flight. The Alaskan system is being tied in with the United States airway communications system by a special link between Seattle and Anchorage. When all stations are operating, airmen in Alaska will receive hourly reports on airway conditions throughout the route to the States. And airmen in the States going to Alaska will receive hourly reports on conditions throughout Alaska.

The radio stations completed are located at Juneau, Cordova, Ketchikan, Ruby, Fairbanks, Nome, Yakutat, Anchorage, Sitka, Petersburg, Yakataga, Talkeetna, Summit, Haines, and Koyuk. Two stations are installed at Sitka.

The completed landing fields, to be known to airmen as intermediate or emergency fields, are at Moses Point, Yakataga, Talkeetna, Summit, and Tanana.

The radio stations under construction are located at Bethel, Kokiak, McGrath,

Naknek, Farwell, Lake Minchumina, Seward, Tanana, West Foreland, and Aniak.

Intermediate fields under construction are at Farwell, West Foreland, Lake Minchumina, Iliamna, McGrath, Neana, Stillman Lake, and Aniak.

Aeronautical Charts

During September the following new editions of aeronautical charts were issued by the United States Coast and Geodetic Survey. Pilots are warned that the previous editions of the same charts are canceled and are now obsolete.

PRICES REDUCED

As of September 1, the price of aeronautical charts has been reduced. Whereas regional and direction-finding (DF) charts sold for 75 cents each, they now are 40 cents each. Sectional charts, formerly 40 cents each, now are 25 cents each. On orders grossing \$10 or more, a 33½ percent discount is allowed. Copies of these charts may be obtained from the Coast and Geodetic Survey, Washington, D. C., and from recognized dealers at major cities and airports.

NEW EDITIONS OF SECTIONAL AERONAUTICAL CHARTS

Albany.—September 1940. Size, 20 by 41 inches. Located in latitude 42°-44° N., and longitude 72°-78° W., an area of about 49,000 square miles. New radio range at Westfield and the civil airways added.

Dallas.—September 1940. Size, 20 by 46 inches. Located in latitude 32°-34° N., longitude 96°-102° W., covering an area of some 55,000 square miles. Realignment of radio range at Big Springs.

Fargo.—August 1940. Size, 20 by 38 inches. Located in latitude 46°-48° N., longitude 96°-102° W., an area of about 47,000 square miles. New radio range from Aberdeen and civil airways added, and an accumulation of changes since last edition.

Roswell.—September 1940. Size, 20 by 46 inches. Located in latitude 32°-34° N., longitude 102°-108° W., an area of about 55,000 square miles.

Addition of new radio range at Engle, beacons on the El Paso to Albuquerque route, and accumulated changes since last edition. Civil airways revised.

Washington.—September 1940. Size, 20 by 33 inches. Located in latitude 38°-40° N., longitude 73°30'-78° W., covering an area of about 26,000 square miles. Camden radio range deleted, Philadelphia radio range realigned, and civil airways revised.

RECOGNIZED DEALERS

The Coast and Geodetic Survey has announced the addition of the following to the list of recognized dealers authorized to sell charts:

Capital Air Service, Mercer Airport, West Trenton, N. J.
St. Louis Flying Service, Inc., Lambert Field, St. Louis, Mo.
Henson Flying Service, Hagerstown, Md.

C. A. R. Amendment Redesignates Control Zones.

The Civil Aeronautics Board has adopted Amendment No. 72, effective October 15, to Part 60 of the Civil Air Regulations, providing for redesignation of control zones of intersection and certain airway control areas. The amendment, making changes in 9 sections of Part 60, follows:

1. By amending section 60.22 to read as follows:
"60.22. Control zones of intersection designation.—The radio range station of the Administrator of Civil Aeronautics located at each of the following cities is designated as the center of a control zone of
See C. A. R. AMENDMENT, (page 472)

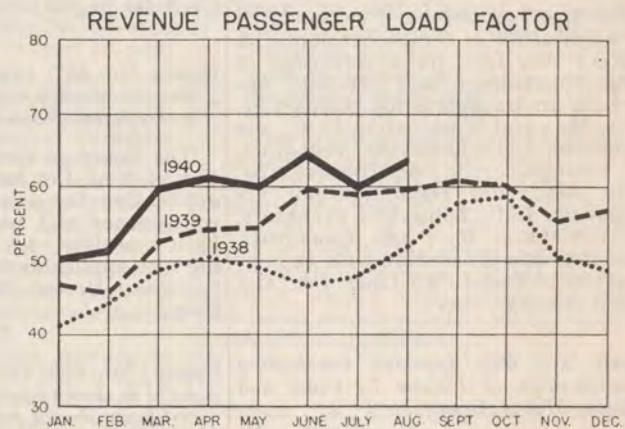
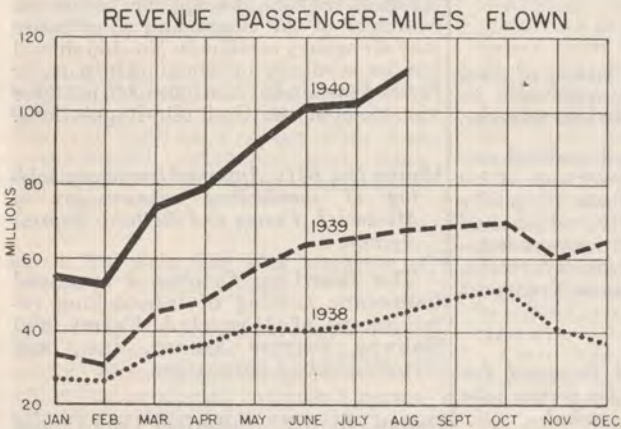
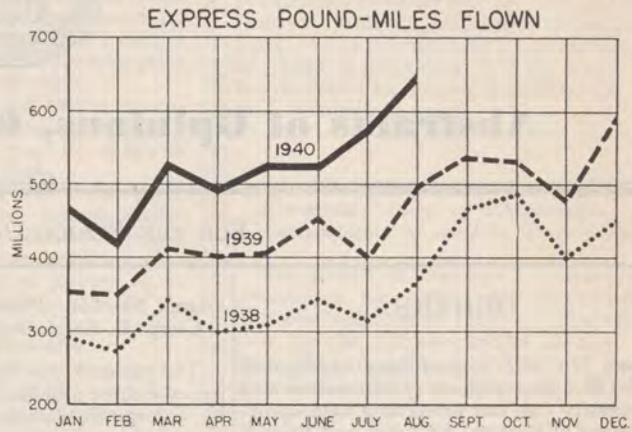
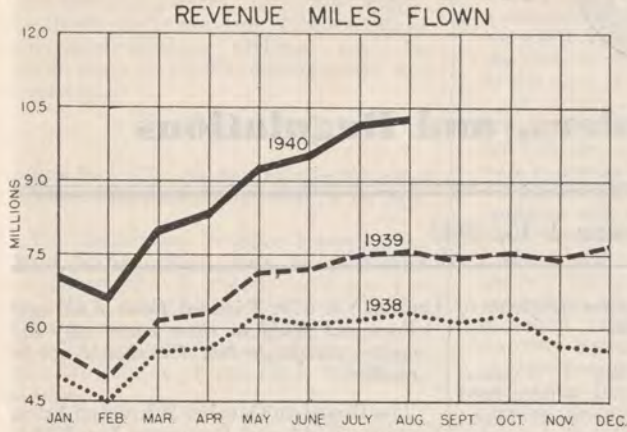
STATISTICAL SUMMARY

The Nation's scheduled air carriers continued to show substantial increases in traffic operations during August over August a year ago, according to reports filed with the Civil Aeronautics Administration. These gains ranged from 30.41 percent in express pound-miles flown to 66.69 percent in revenue passengers carried.

During August, the reporting air carriers flew 10,223,149 revenue miles, an increase of 33.83 percent over August 1939. Revenue passengers carried in August totaled 298,453, a gain of 66.69 percent over a year ago. Revenue passenger-miles flown during the month amounted to 110,986,456, a gain of 30.41 percent. The revenue passenger load factor for August was 63.27 percent, compared with 59.09 percent for August 1939.

Air Transportation

Domestic Air Carrier Statistics for 1938, 1939, and the First 8 Months of 1940



Domestic Air Carrier Traffic Statistics for August 1940

Operator	Revenue miles flown		Revenue passengers carried		Revenue passenger-miles flown		Express pound-miles flown		Revenue passenger load factor (percent)	
	August 1940	Percent change over 1939	August 1940	Percent change over 1939	August 1940	Percent change over 1939	August 1940	Percent change over 1939	August 1940	August 1939
American Airlines, Inc.	2,467,419	39.14	90,279	66.81	31,254,040	55.61	171,745,540	20.49	70.32	66.41
Boston-Maine Airways, Inc.	96,854	25.39	3,961	51.41	580,714	45.91	683,585	-9.49	60.23	51.52
Braniff Airways, Inc.	420,146	33.33	11,447	104.08	3,509,743	94.53	16,329,825	39.39	43.03	58.87
Chicago & Southern Air Lines, Inc.	179,263	8.14	4,472	108.48	1,721,698	108.58	6,752,421	22.25	48.39	49.80
Continental Air Lines, Inc.	127,856	24.28	1,878	125.72	541,838	116.29	777,004	67.05	55.09	36.14
Delta Air Corporation	206,516	37.48	4,960	78.42	1,257,725	81.80	2,640,592	67.85	50.53	46.06
Eastern Air Lines, Inc.	1,304,647	37.70	32,380	56.89	11,812,207	58.92	74,893,493	51.68	51.06	44.60
Inland Air Lines, Inc.	105,218	15.08	1,659	54.76	441,525	54.06	553,716	15.84	41.96	31.34
Marquette Airlines, Inc. ¹	9,056	-69.74	85	-74.93	19,446	-74.40	0		35.79	31.72
Mid-Continent Airlines, Inc.	140,909	26.00	2,420	44.91	717,525	59.69	910,750	-27.47	45.45	43.66
National Airlines, Inc.	101,611	72.51	1,583	134.17	356,117	145.63	681,112	164.71	33.56	24.61
Northwest Airlines, Inc.	543,877	16.24	16,656	45.45	6,842,101	48.48	23,994,524	8.63	63.13	59.25
Pennsylvania-Central Airlines Corp.	407,755	27.34	24,586	97.16	4,372,689	104.69	17,073,381	74.19	61.73	66.71
Transcontinental & Western Air, Inc.	1,556,714	34.85	36,048	73.88	18,122,005	77.12	96,609,090	34.30	65.15	62.71
United Airlines Transport Corp.	2,314,120	39.60	53,535	63.62	27,205,724	58.01	208,276,674	30.84	70.29	69.27
Western Air Express Corporation	214,249	12.99	6,085	64.81	2,038,789	54.98	19,143,941	32.72	62.83	56.88
Wilmington-Catalina Airlines, Ltd.	26,939	8.19	6,419	16.71	192,570	16.71	457,920	-15.18	74.36	68.27
Total	10,223,149	33.83	298,453	66.69	110,986,456	62.93	641,523,568	30.41	63.27	59.09

¹ Marquette Airlines, Inc., discontinued operations on Aug. 14. Service over its former route now is being supplied by T. W. A.

CIVIL AERONAUTICS BOARD

OFFICIAL ACTIONS



Abstracts of Opinions, Orders, and Regulations

FOR THE PERIOD OCTOBER 1-15, 1940

ORDERS

ORDER No. 662: *Consolidated application of TWA for certificate of convenience and necessity into one proceeding with applications of Eastern Air Lines and Braniff Airways.*

The Board on October 1 consolidated the application of Transcontinental & Western Air, Inc., for a certificate of public convenience and necessity authorizing air transportation between St. Louis, Mo., and Washington, D. C.; via Evansville, Ind.; Louisville, Frankfort, and Lexington, Ky.; and between St. Louis, Mo.; and Dayton, Ohio; via Evansville, Ind.; Louisville, Frankfort, and Lexington, Ky.; and Cincinnati, Ohio; into one proceeding with the applications of Eastern Air Lines, Inc., and Braniff Airways, Inc.

ORDER No. 663: *Approved interlocking relationships of Eugene L. Vidal and Boston-Maine Airways.*

The Board on October 1 approved interlocking relationships of Eugene L. Vidal and Boston-Maine Airways, Inc., and certain research corporations.

ORDER No. 664: *Approved interlocking relationships of Dana C. Douglass and Boston-Maine Airways.*

The Board on October 1 approved interlocking relationships of Dana C. Douglass and Boston-Maine Airways, Inc., and certain railway companies.

ORDER No. 665: *Denied request of Braniff for temporary exemption under Section 416 of the Civil Aeronautics Act.*

The Board on October 1 denied request of Braniff Airways, Inc., for temporary exemption under section 416 of the Civil Aeronautics Act to permit operation of service to Austin, Tex., on Route No. 50, pending decision of the Board on its application for an amendment to its certificate of public convenience and necessity covering such route.

ORDER No. 666: *Private pilot certificate of George B. Larghe revoked.*

The Board on October 1 revoked private pilot certificate No. 44654, held by George B. Larghe, Huron, S. Dak., for piloting an aircraft carrying passengers for hire and other violations of the Civil Air Regulations.

ORDER No. 667: *Granted motion of Nick Bez for severance of his application for a certificate of convenience and necessity.*

The Board on October 1 granted motion of Nick Bez for a severance of his application for a certificate of public convenience and necessity, which had been consolidated for purposes of hearing with applications of Oregon Airways, Inc., and United Air Lines Transport Corp.

ORDER No. 668: *Directed Raymond Lee Kidd to show cause why his private pilot certificate should not be revoked.*

The Board on October 2 directed Raymond Lee Kidd, New Orleans, La., to appear before an examiner of the Board and show cause why his private pilot certificate No. 48357 should not be revoked, in whole or in part, or further suspended in whole or in part, for giving flight instruction without being possessed of an instructor rating; and other violations of the Civil Air Regulations.

ORDER No. 669: *Directed Edna Gardner Kidd to show cause why her commercial pilot certificate should not be revoked.*

The Board on October 2 directed Edna Gardner Kidd, New Orleans, La., to appear before an examiner of the Board and show cause why her commercial pilot certificate No. 2000 should not be revoked in whole or in part or further suspended, in whole or in part, for signing pilot log books certifying that she had given certain flying instruction although in fact she had not personally given such instruction; and other violations of the Civil Air Regulations.

ORDER No. 670: *Directed Edna Kidd and Raymond Kidd to show cause why air agency certificate No. 456 should not be revoked.*

The Board on October 2 directed Edna Gardner Kidd and Raymond Lee Kidd, New Orleans, La., operators of Southern Aviation School, to appear before an examiner of the Board and show cause why air agency certificate No. 456 should not be revoked, in whole or in part, or further suspended in whole or in part, for violations of the Civil Air Regulations.

ORDER No. 671: *Approved temporary holding of interlocking relationships of Michael J. Currey and Railway Express Agency.*

The Board on October 4 approved temporary holding of interlocking relationships of Michael J. Currey and Railway Express Agency, Inc., and certain railway companies.

ORDER No. 672: *Authorized Penn-Central temporarily to suspend service to Williamsport.*

The Board on October 4 authorized Pennsylvania-Central Airlines Corp. temporarily to suspend service to Williamsport, Pa.

ORDER No. 673: *Terminated investigation instituted between Marquette Airlines and American Airlines.*

The Board on October 4 terminated the investigation instituted in the matter of certain contracts and other transactions between Marquette Airlines, Inc., and American Airlines, Inc.

ORDER No. 674: *Denied request of Eastern Air Lines for exemption under section 416 (b) of the Civil Aeronautics Act.*

The Board on October 4 denied request of Eastern Air Lines, Inc., for an exemption under section 416 (b) of the Civil Aeronautics Act so as to permit it to engage in scheduled operation to and from Winston-Salem, N. C.

ORDER No. 675: *Granted petition of city of Lexington to intervene in certain applications for certificate of convenience and necessity.*

The Board on October 8 granted petition of the city of Lexington, Ky., the counties of Fayette, Bourbon, Clark, Franklin, Jessamine, Scott, and Woodford, the Lexington Board of Trade and Richmond (Ky.) Chamber of Commerce, for leave to intervene in the applications of Delta Air Corp., Pennsylvania-Central Airlines Corp., Southern Air Lines, Inc., Dixie Airlines, Inc., and Eastern Airlines, Inc., for certificates of public convenience and necessity.

ORDER No. 676: *Student pilot certificate of Edward H. Lihme suspended for 30 days.*

The Board on October 8 suspended, for a period of 30 days, student pilot certificate No. S-23616, held by Edward H. Lihme, Glen Cove, N. Y., for piloting an aircraft carrying a person other than a certificated instructor; and other violations of the Civil Air Regulations.

ORDER No. 677: *Student pilot certificate of Charles Pye revoked.*

The Board on October 8 revoked student pilot certificate No. 71227, held by Charles Pye, Miami, Fla., for piloting an aircraft carrying a person other than a certificated instructor; and other violations of the Civil Air Regulations.

ORDER No. 678: *Solo pilot certificate of James C. Shanklin revoked.*

The Board on October 8 revoked solo pilot certificate No. 79115, held by James C. Shanklin, Huntington, W. Va., for piloting an aircraft carrying a person other than a certificated instructor; and other violations of the Civil Air Regulations.

ORDER No. 679: *Denied application of TWA for an order temporarily exempting it from provisions of section 401 (a) of the Civil Aeronautics Act.*

The Board on October 8 denied application of Transcontinental & Western Air, Inc., for an order temporarily exempting it from the provisions of section 401 (a) of the Civil Aeronautics Act so as to permit it to engage in air transportation to and from Columbia, Mo., on route No. 2.

ORDER No. 680: *Reopened proceeding in matter of petition of United concerning compensation for transportation of mail over routes Nos. 1, 11, 13, and 17.*

The Board on October 8 reopened the proceeding in the matter of the petition

SPECIAL NOTICE

Economic Opinions of the Civil Aeronautics Board Available in Printed Pamphlets—Sold Individually or on Subscription Basis

The CIVIL AERONAUTICS JOURNAL carries in this section an abstract of all rules, regulations, and orders, and a syllabus of all opinions issued by the Civil Aeronautics Board during the half-month ending 2 weeks prior to the date of publication.

All opinions of the Board in economic proceedings now are printed individually and may be obtained on a subscription basis.

Subscriptions for economic opinions will be by volume rather than for specific periods of time. Each volume will comprise approximately 800 pages of printed opinions which ultimately will make up a bound volume of CIVIL AERONAUTICS BOARD REPORTS.

For example, opinions issued subsequent to June 30, 1940 (now being printed) are paginated consecutively from 1 to 800, irrespective of the intervals between publication of individual opinions. The same plates used in printing the "advance sheets" later will be used to print the bound volumes.

The first volume of opinions, comprising all decisions of the independent Civil Aeronautics Authority from the time of its inception to June 30, 1940, when it was transferred to the Department of Commerce, is called CIVIL AERONAUTICS AUTHORITY REPORTS, Volume 1. The next volume, of which currently issued opinions will form a part, will be called CIVIL AERONAUTICS BOARD REPORTS, Volume 2.

CIVIL AERONAUTICS AUTHORITY REPORTS, Volume 1, now is being printed, and notice will be given on this page when it is placed on sale.

The subscription price for each volume of "advance sheets" of economic opinions is \$1. Remittance should be made to the Superintendent of Documents, Government Printing Office, Washington, D. C.

For those who do not wish to subscribe to the complete volumes, the "advance sheets" of economic opinions may be purchased individually. As each opinion becomes available in printed form, the title of the case, docket number, order number, date, and price will be listed in the Official Actions section of the JOURNAL. All orders must be sent to the Superintendent of Documents.

Opinions in cases of suspension, revocation, or denial of airman certificates are available in mimeograph form only. Verbatim copies of these may be obtained by addressing a request to the Publications and Statistics Division, Civil Aeronautics Administration, Washington, D. C.

of United Air Lines Transport Corp., for an order fixing and determining fair and reasonable rates of compensation for the transportation of mail by aircraft over routes Nos. 1, 11, 12, and 17.

ORDER No. 681: *TWA granted permission to intervene in application of United.*

The Board on October 8 granted Transcontinental & Western Air, Inc., permission to intervene in the application of United Air Lines Transport Corp. for an amendment to its certificate of public convenience and necessity for Route No. 1 to include Reading, Pa., as an intermediate point.

ORDER No. 682: *Instituted proceeding for determining rates of compensation for transportation of mail by Penn-Central.*

The Board on October 8 instituted a proceeding for fixing and determining fair and reasonable rates of compensation for the transportation of mail by Pennsylvania - Central Airlines Corp. over Routes Nos. 14, 32, 34, 41, 46, and 51.

ORDER No. 683: *Temporarily exempted Aerovias Nacionales Puerto Rico and Caribbean-Atlantic Airlines from provisions of section 401 (a) of the Civil Aeronautics Act of 1938.*

The Board on October 9 temporarily exempted Aerovias Nacionales Puerto Rico, Inc., and Caribbean-Atlantic Airlines, Inc., from the provisions of section 401 (a) of the Civil Aeronautics Act of 1938 to the extent necessary to permit them to engage in air transportation, except with respect to mail, between certain points specified in their respective applications.

ORDER No. 684: *Temporarily exempted Pan American-Grace Airways from provisions of section 401 (a) of the Civil Aeronautics Act.*

The Board on October 9 temporarily exempted Pan American-Grace Airways, Inc., from the provisions of section 401 (a) of the Civil Aeronautics Act to permit it to render air transportation service to and from Balboa, C. Z., as an intermediate point on its authorized route between Cristobal, C. Z., and Cali, Colombia.

ORDER No. 685: *Temporarily exempted Pan American from provisions of section 401 (a) of the Civil Aeronautics Act.*

The Board on October 9 temporarily exempted Pan American Airways, Inc., from the provisions of section 401 (a) of the Civil Aeronautics Act to permit it to engage in air transportation between the terminal point, Miami, Fla., and the terminal point, Balboa, C. Z., in lieu of its present terminal point, Cristobal, C. Z.

ORDER No. 686: *Waived application of certain provisions of Executive Order No. 8251.*

The Board on October 7 waived the application of certain provisions of Executive Order No. 8251 "Regulations Governing the Entrance of Foreign and Domestic Aircraft into the Canal Zone and Navigation therein," as amended, to the operations of Panama Airways, Inc., in the Canal Zone between Balboa and Cristobal.

ORDER No. 687: *Waived application of certain provisions of Executive Order No. 8251.*

The Board on October 7 waived the application of certain provisions of Executive Order No. 8251, as amended, to the operations of Pan American-Grace Airways, Inc., into, within, and from the Canal Zone.

ORDER No. 688: *Waived application of certain provisions of Executive Order No. 8251.*

The Board on October 7 waived the application of certain provisions of Executive Order No. 8251, as amended, to the operations of Pan American Airways, Inc., into, within, and from the Canal Zone.

ORDER No. 689: *Waived application of certain provisions of Executive Order No. 8251.*

The Board on October 7 waived the application of certain provisions of Executive Order No. 8251, as amended, to the operations of Uraba, Medellin and Central Airways, Inc., into, within and from the Canal Zone.

ORDER No. 690: *Directed Lee Scott Gardner to show cause why his solo pilot certificate should not be suspended or revoked.*

The Board on October 11 directed Lee Scott Gardner, Aniak, Alaska, to appear before an examiner of the Board and show cause why his solo pilot certificate No. 93853 should not be suspended or revoked for piloting an aircraft carrying a person other than a certificated instructor and other violations of the Civil Air Regulations.

ORDER No. 691: *American Airlines granted permission to intervene in consolidated proceeding.*

The Board on October 15 granted American Airlines, Inc., permission to intervene in the consolidated proceeding in the matter of the applications of Eastern Air Lines, Inc., Braniff Air-

ways, Inc., and Transcontinental & Western Air, Inc., for certificates of public convenience and necessity covering services between St. Louis and Kansas City, Mo., and Washington, D. C.

ORDER No. 692: *Braniff permitted to withdraw its application for certificate of convenience and necessity.*

The Board on October 15 granted Braniff Airways, Inc., permission to withdraw its application for a certificate of public convenience and necessity between Kansas City, Mo., and Washington, D. C., which had been consolidated for purposes of hearing with the applications of Eastern Air Lines, Inc. and Transcontinental & Western Air, Inc.

ORDER No. 693: *Directed Charles Pierce to show cause why his private pilot certificate should not be revoked or further suspended.*

The Board on October 15 directed Charles G. Pierce, holder of private pilot certificate No. 46674, to appear before an examiner of the Board and show cause why his pilot certificate should not be revoked in whole or in part or further suspended in whole or in part.

REGULATIONS

REGULATION No. 118: *Adopted section 228.5 of the Economic Regulations with respect to free or reduced-rate overseas or foreign air transportation.*

The Board on October 4 adopted section 228.5 of the Economic Regulations with respect to free or reduced-rate overseas or foreign air transportation and repealing section 228.2 of the Economic Regulations.

REGULATION No. 119: *Adopted Amendment No. 75 of the Civil Air Regulations substituting the words "Administrator" and "Board" for the word "Authority" in the various parts of these regulations.¹ The full text of the amendment follows:*

Effective October 4, 1940, the Civil Air Regulations are amended as follows:

1. By striking the phrase "by the Authority" immediately following the word "canceled" in section 01.23.

2. By striking the word "Authority" in sections 01.300, 01.35, 20.32, 20.671, 26.54, 27.21, 61.7803, and 61.93 and inserting in lieu thereof the phrase "Administrator or Board."

¹In connection with Regulation, Serial No. 119, the Administrator has issued an order and regulation which have been given serial numbers for purposes of identification and are as follows:

Regulation No. 119A: Administrator's Order No. 2 adopting Part 01 of the Civil Air Regulations as prescribed and issued by the Civil Aeronautics Board, effective July 15, 1940, as amended, with respect to the registration of aircraft and aircraft registration certificates (dated October 4).

Regulation No. 119B: Administrator's Amendment No. 1 of the Civil Air Regulations substituting the words "Administrator" or "Board" for the word "Authority" (dated October 4).

3. By striking the word "Authority" in sections 21.0, 18.0, 60.0, 60.103, 60.105, 60.330, and 99.10, and inserting in lieu thereof the word "Board."

4. By striking the phrase "by the Authority" immediately following the word "revoked" in sections 02.12, 02.23, 20.33, 24.32, 27.22, 40.65, 40.75, 50.42, 51.22, and 52.33.

5. By striking the phrase "by the Board" in section 53.32.

6. By inserting the phrase, "as amended," after the phrase "Civil Aeronautics Act of 1938" wherever it appears in the regulations, except in so much of Part 01 as relates solely to the registration of aircraft and aircraft registration certificates.

7. By striking the phrase "Civil Aeronautics Authority Manual" wherever it appears and inserting in lieu thereof the phrase "Civil Aeronautics Manual."

8. By striking the word "its" from sections 04.061, 20.51, 24.41, 50.54, and 60.940 and inserting in lieu thereof the word "his."

9. By striking the last sentence of section 04.260 and inserting in lieu thereof the following:

"The minimum ultimate factor of safety shall be 1.5 unless higher factors are deemed necessary by the Administrator in order to make special provision for conditions such as vibration, stress concentration, and fatigue."

10. By striking the word "reserves" from section 04.4023 and inserting in lieu thereof the word "has."

11. By amending section 04.404 to read as follows: "04.404. *General flutter prevention measures.* When he deems it necessary in the interest of safety, the Administrator may require special provisions against flutter. For specific requirements see sections 04.323, 04.413, 04.423, 04.224, 04.425, 04.426, 04.4260, 04.435, 04.436, and 04.707."

12. By striking the phrase "Civil Aeronautics Authority" in sections 13.00, 14.00, 15.00, 18.0, 61.3503, and 99.0 and inserting in lieu thereof the phrase "Civil Aeronautics Board."

13. By striking the phrase "Civil Aeronautics Authority" in sections 13.21, 13.61, 14.51, 15.313, 18.45, 20.31, 21.0, 21.31, 40.0, 60.0, 60.22, 61.0, 61.430 (a), 61.533, 61.83 (a), and 98.100, and in the notes to sections 60.531 and 60.5710 and inserting in lieu thereof the phrase "Administrator of Civil Aeronautics."

14. By inserting the phrase "the Board" immediately preceding the phrase "to establish" in sections 40.0 and 61.0.

15. By amending section 15.0411 (b) to read as follows:

"15.0411 (b). If a type certificate has not been issued to the manufacturer for the particular item, each unit shall bear the words "Administrator of Civil

Aeronautics Approved" or an abbreviation thereof (A. C. A. A.)."

16. By amending section 15.042 (d) to read as follows:

"(d) Administrator of Civil Aeronautics Type Certificate (or A. C. A. T. C.) No. —, or Administrator of Civil Aeronautics Approved (or A. C. A. A.)."

17. By striking sections 15.216 and 15.217 (not including sections 15.2170 and 15.2171) and inserting in lieu thereof the following:

"15.216. (Unassigned.)

"15.217. Upon satisfactory completion of the examination of the technical data submitted to the Administrator, five flares of each model described in the data, an airplane arranged for the complete installation of flares of each model, and operating personnel shall be made available for functional tests of the flares. These tests may be made at any location desired by the manufacturer."

18. By striking the abbreviation "CAAM" wherever it appears and inserting in lieu thereof the abbreviation "CAM."

19. By striking the abbreviation "CAA" wherever it appears and inserting in lieu thereof the abbreviation "ACA."

20. By striking the phrase "Civil Aeronautics Authority" in sections 21.23, 21.441, 40.64, and 40.74 and inserting in lieu thereof the phrase "Administrator or Board."

21. By striking the phrase "to revocation by the Authority" in sections 21.122 and 27.12 (c) and inserting in lieu thereof the phrase "to revocation by the Board."

22. By striking section 21.211.

23. By striking the phrase "as provided in section 21.27" from section 21.24.

24. By amending sections 21.27 and 21.28 to read as follows:

"21.27 *Operation during physical deficiency.* A certificated airline transport pilot shall not operate any aircraft during the period of any known physical deficiency or increase in physical deficiency, which would render him during that period unable to meet the physical requirements with which he complied in order to secure his certificate.

"21.28 *Surrender.* Under the suspension, revocation or expiration of an airline transport pilot certificate, the holder of such certificate shall, upon request, surrender such certificate to any officer or employee of the Administrator."

25. By amending the note to section 26.11 to read as follows:

(Continued on page 472)

Status of Parts of Civil Air Regulations and Amendments

[As of October 1, 1940]

CIVIL AIR REGULATIONS

Because of limitations on the number of copies of the Parts of the Civil Air Regulations which may be printed for free distribution, certain Parts have been placed on sale so that they may be made available to persons not affected by the CAR and who, therefore, are not eligible for free copies under the policy followed by the Civil Aeronautics Administration. As other Parts are issued, they also will be placed on sale.

Those available for purchase now are as follows: Part 01. Aircraft Registration and Airworthiness Certificates;

Part 02. Type and Production Certificates; Part 20. Pilot Certificates; Part 24. Mechanic Certificates; Part 27. Aircraft Dispatcher Certificates; Part 51. Ground Instructor Rating; Part 52. Repair Station Rating; and Part 53. Mechanic School Rating. They may be obtained by addressing the Superintendent of Documents, Government Printing Office, Washington, D. C. The price for each Part is 5 cents. Remittance must accompany order.

Persons who are affected by the Civil Air Regulations, including those preparing for examination for certificates, may obtain the Parts required from the

Publication and Statistics Division, Civil Aeronautics Administration, Washington, D. C., without charge. Not more than 1 copy may be furnished to individuals and not more than 10 to aviation organizations or agencies. **ONLY THE PARTS ACTUALLY NEEDED SHOULD BE REQUESTED.**

Amendments to the CAR also may be obtained from the Publications and Statistics Division without charge, *except in the case where an amendment replaces or is the same as a Part of the CAR.* These will be placed on sale by the Superintendent of Documents.

Part No.	Title	Effective date	Remarks	Amendments in effect to date
AIRCRAFT				
00.	CANCELLED		Now incorporated in Part 01	
01.	AIRCRAFT REGISTRATION AND AIRWORTHINESS CERTIFICATES	July 15, 1940	In stock: on sale at G. P. O.	68, 75.
02.	TYPE AND PRODUCTION CERTIFICATES	do.	do.	75.
03.	CANCELLED		Now incorporated in Part 01	
04.	AIRPLANE AIRWORTHINESS ¹	May 31, 1938	In stock: order from C. A. A. only	601-A-1, 4, 5, 14, 26, 28, 48, 56, 69, 75.
13.	AIRCRAFT ENGINE AIRWORTHINESS	do.	Revision with minor changes, including amendments, to be available soon and will be on sale at G. P. O.	
14.	AIRCRAFT PROPELLER AIRWORTHINESS ¹	do.	do.	
15.	AIRCRAFT EQUIPMENT AIRWORTHINESS ¹	do.	do.	
18.	REPAIR AND ALTERATION OF AIRCRAFT	do.	do.	
AIRMEN				
20.	PILOT CERTIFICATES	May 1, 1940	In stock: on sale at G. P. O.	54, 63, 65, 67, 75.
21.	AIRLINE PILOT RATING	do.	Revision in preparation: to be available soon and will be on sale at G. P. O.	
23.	CANCELLED		Now incorporated in Part 51	
24.	MECHANIC CERTIFICATES	May 1, 1940	In stock: on sale at G. P. O.	44, 61, 73, 75.
25.	CANCELLED		Now incorporated in Part 24	
26.	AIR-TRAFFIC CONTROL-TOWER OPERATOR CERTIFICATES	Aug. 15, 1940	Now being printed. Will be available shortly and will be on sale at G. P. O.	
27.	AIRCRAFT DISPATCHER CERTIFICATES	July 15, 1940	In stock: on sale at G. P. O.	74, 75.
AIR CARRIERS				
40.	AIR CARRIER OPERATING CERTIFICATION (INTERSTATE)	May 31, 1938	In stock: order from C. A. A. only	601-A-1, 3, 6, 12, 29, 51, 56, 75, 79.
AIR AGENCIES				
50.	FLYING SCHOOL RATING	Aug. 1, 1940	Now being printed. Will be available shortly and will be on sale at G. P. O.	75.
51.	GROUND INSTRUCTOR RATING	May 1, 1940	In stock: on sale at G. P. O.	75.
52.	REPAIR STATION RATING	do.	do.	75.
53.	MECHANIC SCHOOL RATING ¹	do.	do.	75.
AIR NAVIGATION				
60.	AIR TRAFFIC RULES ²	May 31, 1938	Revision with minor changes, including amendments to Oct. 4, to be available shortly and will be on sale at G. P. O.	76.
61.	SCHEDULED AIR CARRIER RULES (INTERSTATE)	do.	In stock: order from C. A. A. only	601-A-1, 51, 52, 62, 75.
MISCELLANEOUS³				
98.	DEFINITIONS	May 31, 1938	Out of stock. (General Revision in preparation.)	601-A-1, 41, 75.
99.	MODE OF CITATION OF REGULATIONS	do.	In stock: order from C. A. A. only	601-A-1.

¹ Supplementary Manual for this part available: order from C. A. A. only.

² The Manual for part 60. is available in three parts: Part 1, Summary of Flight Rules; Part 2, Airport Traffic Control; and Part 3, Airway Traffic Control.

³ Parts 90.-96., inclusive, have been cancelled.

Training Restricted

(Continued from page 461)

airports, and also have been doing much more point-to-point flying.

"When you add to these factors, which will increase in intensity, the large expansion of the Civilian Pilot Training Program itself, action becomes urgent."

The Administrator said 17 of the airports were placed on the restricted list because of "heavy scheduled air carrier operation, operations by military aircraft engaged in point-to-point flying, and the tremendous load of transit aircraft." These include: Atlanta (municipal), Boston (municipal), Buffalo, N. Y., Burbank (Union), Chicago (municipal), Cleveland (municipal), Dallas (Love Field), Detroit (City airport), Fort Worth (municipal), Kansas City (municipal), New York (La Guardia Field), Philadelphia (municipal), Pittsburgh (Allegheny County), St. Louis (Lambert Field), San Francisco (municipal), Seattle (Boeing), and Washington, D. C. (Gravelly Point).

The remaining 29 airports on the list were included, he said, "because the military authorities have based, or plan to base in the near future, extensive tactical operations on these sites." They include: Albuquerque (municipal), Augusta (municipal), Bangor (municipal), Battle Creek (municipal), Boise (municipal), Charlotte, N. C. (municipal), Columbia, S. C. (municipal), Denver (municipal), Fort Wayne (municipal), Fresno (municipal), Jackson, Miss. (municipal), Jacksonville (municipal), Louisville (municipal), Meridian (municipal), Minneapolis (municipal), New Orleans (municipal), Oklahoma City (municipal), Orlando,

Fla., Portland (municipal), Providence (municipal), Salt Lake City (municipal), San Diego (municipal), Savannah (municipal), Spokane (municipal), Tallahassee (municipal), Tampa (municipal), Tucson (municipal), West Palm Beach, Fla., and Yakima (municipal).

C. A. R. Amendment

(Continued from page 466)

intersection: Albany, N. Y.; Albuquerque, N. Mex.; Amarillo, Tex.; Belgrade, Mont.; Boston, Mass.; Billings, Mont.; Bismarck, N. Dak.; Burlington, Vt.; Charleston, S. C.; Cheyenne, Wyo.; Concord, N. H.; Corpus Christi, Tex.; Daytona Beach, Fla.; Denver, Colo.; Ellensburg, Wash.; El Paso, Tex.; Fargo, N. Dak.; Helena, Mont.; Houston, Tex.; Huron, S. Dak.; Jackson, Miss.; Jacksonville, Fla.; Laramie, Wyo.; Memphis, Tenn.; Miami, Fla.; Millinocket, Maine; Minneapolis, Minn.; Nashville, Tenn.; Mobile, Ala.; New Orleans, La.; Northdallas, Oreg.; Oklahoma City, Okla.; Omaha, Neb.; Pendleton, Oreg.; San Antonio, Tex.; Seattle, Wash.; Spokane, Wash.; Portland, Oreg.; Tallahassee, Fla.; Tampa, Fla.; Tulsa, Okla.; White Hall, Mont.; Wichita, Kans.;"

2. By amending section 60.2402 to read as follows: "60.2402. Green civil airway No. 3 airway traffic control areas (Los Angeles, Calif., to Philadelphia, Pa.).—Those portions of green civil airway No. 3: From the Municipal Airport, Los Angeles, Calif., to a line extended at right angles across such airway through a point on the center line thereof 25 miles east of the Ashfork, Ariz., radio range station; from a line extended at right angles across such airway through a point on the center line thereof 25 miles northeast of the Wichita, Kans., radio range station, to the Philadelphia, Pa., Municipal Airport."

3. By amending section 60.2415 to read as follows: "60.2415. Amber civil airway No. 6: airway traffic control areas (Jacksonville, Fla., to Buffalo, N. Y.).—Those portions of amber civil airway No. 6: From a line extended at right angles across such airway through a point on the center line thereof 25 miles northwest of the Alma, Ga., radio range station, to a line extended at right angles across such airway through a point on the center line thereof 25 miles southeast of the Nashville, Tenn., radio range station; from a line extended at right angles across such airway through a point on the center line thereof 25 miles northeast of the Nashville, Tenn., radio range station to the Buffalo, N. Y., radio range station."

4. By amending section 60.2421 to read as follows: "60.2421. Red civil airway No. 12: airway traffic control areas (Kansas City, Mo., to Detroit, Mich.).—All of red civil airway No. 12."

5. By amending section 60.24213 to read as follows: "60.24213. Red civil airway No. 14: airway traffic control areas (Lone Rock, Wis., to Louisville, Ky.).—All of red civil airway No. 14."

6. By amending section 60.24217 to read as follows: "60.24217. Red civil airway No. 18: airway traffic control areas (Indianapolis, Ind., to Washington, D. C.).—All of red civil airway No. 18."

7. By amending section 60.24218 to read as follows: "60.24218. Red civil airway No. 19: airway traffic control areas (Dayton, Ohio, to Grand Rapids, Mich.).—All of red civil airway No. 19."

8. By amending section 60.24226 to read as follows: "60.24226. Red civil airway No. 27: airway traffic control areas (Dayton, Ohio, to Detroit, Mich.).—All of red civil airway No. 27."

9. By amending section 60.24314 to read as follows: "60.24314. Blue civil airway No. 15: traffic control areas (Columbus, Ohio, to Erie, Pa.).—All of blue civil airway No. 15."

Airport Projects Approved

In accordance with the provisions of section 303 of the Civil Aeronautics Act, the Administrator of Civil Aeronautics has issued certificates of air navigation facility necessity authorizing the expenditure of Federal funds in the operation of the following projects:

AVON PARK, FLA.—\$117,729 for W. P. A. project for clearing approaches to 30-to-1 glide, extending landing strips to approximately 4,000 feet, paving 3 runways to 3,750, 4,000, and 4,100 feet in length, each 100 feet wide and paving aprons and taxi strips at Avon Municipal Airport.

BALTIMORE, MD.—\$289,345 for W. P. A. project for construction of airplane hangar 139 by 250 feet with 26-foot headroom and construct buildings at each side of hangar, 32 by 60 to 250 feet long, two stories high. The entire unit to be of steel, concrete brick with slate and protected metal roof, including excavation for and placing of footings, floor slabs, back-filling, grading, installing drainage and performing necessary incidental and appurtenant work. In addition to projects heretofore specifically approved at municipal airport.

BANGOR, MAINE.—\$473,333 for W. P. A. project including construction of runway; excavating; installing drains, culverts, and catch basins; and performing appurtenant and incidental work. Publicly owned property at Bangor Airport.

REGULATIONS

(Continued from page 470)

"1. Lists of source material covering the subject matter of these examinations can be obtained from the Federal Airways Service, Civil Aeronautics Administration."

26. By amending section 40.612 to read as follows: "40.612. (Unassigned.)"

27. By amending sections 40.67 and 40.68 to read as follows:

"40.67. (Unassigned.)"

"40.68. Surrender. Upon the suspension or revocation of an air carrier operating certificate, the holder of such certificate shall, upon request, surrender such certificate to any officer or employee of the Administrator."

28. By striking the phrase "necessary minimum safety standards" in section 40.70.

29. By amending section 40.711 to read as follows: "40.711. (Unassigned.)"

30. By amending sections 40.77 and 40.78 to read as follows:

"40.77. (Unassigned.)"

"40.78. Surrender. Upon the suspension or revocation of a competency letter, the holder of such letter shall, upon request, surrender such letter to any officer or employee of the Administrator."

31. By striking the phrase "designated by the Authority" in sections 60.121 and 60.571 and inserting in lieu thereof the phrase "designated by the Board."

32. By striking the phrase "satisfactory to the Authority" in section 60.32 and inserting in lieu thereof the phrase "satisfactory to the Board."

33. By striking the phrase "That the Authority may require" in sections 60.44 and 60.54 and inserting in lieu thereof the phrase "That, in the interest of safety, the Administrator may require."

34. By amending section 61.431 (b) to read as follows:

"61.431 (b). The Chief, Air Carrier Service, Civil Aeronautics Administration,"

35. By striking the last sentence of section 61.71093 (d) and inserting in lieu thereof the following:

"The Administrator, in the interest of safety, may, at his discretion, prescribe higher minimums."

36. By amending section 61.53 (b) to read as follows:

"(b) The Chief of the Air Carrier Service, Civil Aeronautics Administration."

37. By amending section 61.94 to read as follows:

"61.94. Mechanical record. The records of the air carrier covering mechanical trouble shall be made available upon request to any authorized representative of the Administrator or Board."

38. By amending section 98.0 to read as follows:

"98.0 (Unassigned.)"

39. By amending sections 98.101, 98.102, and 98.103 to read as follows:

"98.101 Board. Board, except as otherwise specifically provided in the Civil Air Regulations, shall mean the Civil Aeronautics Board, or an officer or employee of the Civil Aeronautics Board, designated by it in writing."

"98.102 Authority. Authority, except as otherwise specifically provided in the Civil Air Regulations, shall mean the Civil Aeronautics Authority, including the Civil Aeronautics Board and the Administrator of Civil Aeronautics, or an officer or employee of either the Board or Administrator, designated in writing."

"98.103 (Unassigned.)"

40. By striking the word "him" in sections 99.0 and 99.10 and inserting in lieu thereof the word "it."

41. By striking the word "Authority" wherever else it appears in the Civil Air Regulations, except in so much of Part 01 as relates solely to the registration of aircraft and aircraft registration certificates and inserting in lieu thereof the word "Administrator."

42. By substituting, adding, or striking such other words as are necessary under the provisions of the Civil Aeronautics Act of 1938, as amended, and as the context of the Civil Air Regulations may require, in order to make both of the same effective, except in so much of Part 01 as relates solely to the registration of aircraft and aircraft registration certificates."

REGULATION No. 120: Adopted Amendment No. 76 of the Civil Air Regulations entitled "Redesignation of Green Airway No. 3 Airway Traffic Control Areas and Change of the Effective Date of Amendment No. 72." This changes the effective date of Part 60 of the Civil Air Regulations, as amended, from October 15, 1940, to November 1, 1940. (Dated October 11). The full text of the Amendment follows:

Effective October 11, 1940, Part 60 of the Civil Air Regulations is amended as follows:

1. By amending section 60.2402 to read as follows:

"60.2402 Green civil airway No. 3: airway traffic control areas (Los Angeles, Calif., to Philadelphia, Pa.). Those portions of green civil airway No. 3: From the Municipal Airport, Los Angeles, Calif., to a line extended at right angles across such airway through a point on the center line thereof 25 miles east of the Ashfork, Ariz., radio range station; from a line extended at right angles across such airway through a point on the center line thereof 25 miles northeast of the Wichita, Kans., radio range station to a line extended at right angles across such airway through a point on the center line thereof 25 miles southwest of the Terre Haute, Ind., radio range station; from a line extended at right angles across such airway through a point on the center line thereof 25 miles east of the Columbus, Ohio, radio range station to the Philadelphia, Pa., Municipal Airport."

2. By amending Amendment No. 72 by striking the phrase "Effective October 15, 1940, Part 60 of the Civil Air Regulations is amended as follows:" and inserting in lieu thereof the phrase "Effective November 1, 1940, Part 60 of the Civil Air Regulations is amended as follows:"