MS-158

FEDERAL AVIATION AGENCY
AIR TRAFFIC SERVICE
WASHINGTON, D. C.

August 14, 1962

REGULATIONS OF THE ADMINISTRATOR DRAFT RELEASE NO. 62-38

SUBJECT: Part 627, Regulations of the Administrator, Establishing Standards for Aeronautical Charts used for Flight Planning and the Operation of Aircraft.

The Air Traffic Service has under consideration a proposal to establish standards to ensure the accuracy and completeness of aeronautical charts available to the aviation community. The reasons therefore are set forth in the attached proposal which is being published in the Federal Register as a Notice of Proposed Rule Making.

The Agency desires that all persons affected by the requirements of this proposal be fully informed as to its effect upon them and is therefore circulating copies in order to afford interested persons ample opportunity to submit comments. There will be no individual acknowledgment of replies but all comments received will be given careful consideration.

Comments from interested parties must be submitted in duplicate to the Docket Section of the Federal Aviation Agency, 1711 New York Avenue, N. W., Room A-103, Washington 25, D. C., prior to October 22, 1962.

FOR Lee E Warren
D. D. Thomas, Director
Air Traffic Service

Attachment

FEDERAL AVIATION AGENCY

AIR TRAFFIC SERVICE

[14 CFR Part 627]

[Reg. Docket No. 1345; Draft Release No. 62–38]

NOTICE OF PROPOSED RULE MAKING

Standards for Aeronautical Charts

Pursuant to the authority delegated to me by the Administrator (14 CFR 405), notice is hereby given that the Federal Aviation Agency has under consideration a proposal for the adoption of Part 627 of the Regulations of the Administrator as hereinafter set forth.

Section 307(b)(3) of the Federal Aviation Act provides that the Administrator is authorized, within the limits of available appropriations made by the Congress to arrange for publication of aeronautical maps and charts necessary for the safe and efficient movement of aircraft in air navigation utilizing the facilities and assistance of existing agencies of the Government so far as practicable. Section 311 of the Federal Aviation Act empowers and directs the Administrator to collect and disseminate information relative to civil aeronautics and to exchange with foreign governments, through appropriate governmental channels, information pertaining to civil aeronautics. Section 313(a) of the Federal Aviation Act empowers the Administrator to perform such acts, *to conduct such investigations, to issue and amend* such general or special rules, regulations, and procedures, pursuant to and consistent with the provisions of the Act, as he shall deem necessary to carry out the provisions of, and to exercise and perform his powers and duties under the Act.

The increasing complexity of the airspace structure and the air traffic control system environment is reflected in the constantly increasing amount of flight information which the pilot must have while planning and conducting flight operations. In order to function safely and efficiently within the system, the pilot must be reliant upon the accuracy and completeness of the information which is available to him in the form of *aeronautical charts. Aeronautical charts constitute* the primary reference for information necessary and available to both the pilot and the air traffic controller. Therefore, safety requires that certain standards of accuracy, currentness, completeness, adequacy and clarity of presentation be established to ensure that aeronautical charts properly aid in the safe and efficient movement of aircraft.

The safe, orderly and expeditious movement of IFR air traffic is dependent on mutual understanding and cooperation between the pilot and controller. Aeronautical charts, recognized by the Federal Aviation Agency (FAA) as an integral part of the pilot's operating equipment, serve as the primary reference for information necessary for pilot-controller coordination.

Current, complete and accurate basic information essential to the safe conduct of any flight must be shown. Supplemental information peculiar to certain operations may be added. With respect to this supplemental data, it is incumbent upon the pilot to assure the aeronautical information shown on aeronautical charts fulfills his individual operational requirements.

Producers of aeronautical charts cannot certify as to the validity of all information sources. However, in complying with the standards herein the producer must certify as to the accuracy, currency and completeness *of his portrayal of source material.*

It is not the intention of these standards to restrict the addition of supplemental information or to prescribe format or method of portrayal of data, nor is there any intent to stifle experimentation or improvement in the method of portraying navigational information to the pilot.

The proposed Part 627, Standards for Aeronautical Charts, would establish standards for aeronautical charts for flight planning and operation of aircraft in the United States under Instrument Flight Rules (IFR) conditions. The basis for the standards contained herein are the FAA production specifications for the En Route Low, Intermediate and High (Jet Routes) Altitude Charts.

Comments concerning this proposal may be submitted in duplicate to the Docket Section of the Federal Aviation Agency, 1711 New York Avenue, N.W., Room A–103, Washington 25, D.C., prior to October 22, 1962.

REGULATIONS OF THE ADMINISTRATOR

Part 627—Standards for Aeronautical Charts

SUBPART A—GENERAL

Section

627.1 Basis and Purpose
627.2 Explanation of Terms
627.3 Method of Conformance
627.4 Marking

SUBPART B—STANDARDS—IFR CHARTS

627.10 Applicability
627.11 General
627.12 Quality
627.13 En Route Charts
627.14 Terminal Charts

Subpart A—General

627.1 Basis and purpose.

(a) The basis of this Part is contained in Sections 307(b) and 601(a) of the Federal Aviation Act of 1958.

(b) *Purpose.* The purpose of this Part is to prescribe standards for aeronautical charts for flight planning and operation of aircraft in accordance with instrument flight rules in the United States, and to prescribe the manner by which the producer must show compliance with these standards. This is to insure the accuracy, currentness and completeness of aeronautical charts. The standards do not apply to strategic or tactical charts designed primarily for military use, including training.

627.2 Explanation of Terms.

As used in this part, terms are defined as follows:

(a) "Aeronautical Charts" means the cartographic medium by which the pilot is furnished information for air navigation.

(b) "IFR Charts" means the cartographic medium by which the pilot is furnished information to navigate and operate under Instrument Flight Rule conditions. Charts in this category include the following:

(1) "En Route Charts" means an En Route Radio Navigation Chart produced to facilitate en route navigation in accordance with Instrument Flight Rules utilizing radio aids to navigation.

(2) "Terminal Area Charts" means all Area Arrival and Departure Charts, Standard Instrument Departure Charts and Instrument Approach Procedure Charts designed solely for operations within a terminal area.

a. "Area Arrival and Departure Charts" means all area charts produced primarily to facilitate IFR transitions between the en route and terminal phases of flight at selected airports.

b. "Standard Instrument Departure Charts" means all charts produced for the purpose of providing a graphic presentation of standard instrument departure clearances and procedures.

c. "Instrument Approach Procedure Charts" means all charts produced for the purpose of providing a graphic presentation of a Standard Instrument Approach Procedure.

(c) "United States" means the several states, the District of Columbia, and the several Territories and Possessions of the United States, including the territorial waters and the overlying airspace thereof.

(d) "Deviation" means the omission of any data required by this standard or any error determined by the Director, Air Traffic Service as compromising flight safety. The significance of the infraction may be categorized either as major or minor.

(e) "Notice of Major Deviation (NMD)" is a written notice advising a producer that a major deviation from the standards established herein exists with reference to his product.

(f) "Notice of Deviation (NOD)" is a written notice by the Director, Air Traffic Service, advising the producer of minor omissions or errors with reference to his product.

(g) "Scheduled FAA Airspace Amendments" means airspace assignments or revisions thereof, and designations of reporting points that become effective on a regular four-week cycle.

(h) "Arrival/Departure Routes" means those routes in terminal areas established by the Federal Aviation Agency for charting.

(i) "Standard Instrument Departure Routes" means those departure routes in terminal areas established by the Federal Aviation Agency for charting which have been assigned a code name and textual description for simplification of departure clearances and relay and delivery procedures.

627.3 Method of Conformance.

(a) A producer of aeronautical charts for which standards are established shall, prior to distribution of the first edition of any such charts for use, furnish a written statement of conformance certifying, by title, that the charts meet the applicable standards established in this Regulation. A copy of the charts shall accompany this statement. The statement of

conformance shall be signed by a person duly authorized by the producer and shall be furnished to the Director, Air Traffic Service, Federal Aviation Agency (FAA), Washington, D.C. This original statement of conformance is applicable to succeeding editions of the chart unless, prior to distribution of such later edition, the producer advises the Director to the contrary. Further charts shall be submitted only if there is a major change in content, such as the addition of another route strata to a chart or the addition of topographic detail not previously shown.

(b) If complaints of nonconformance with the requirements of this regulation are brought to the attention of the FAA and investigation of the charts involved indicates that such complaints are justified, the FAA, Director, Air Traffic Service, shall take appropriate action to prohibit or restrict the use of such charts in the United States. The producer shall not mark any further charts as indicated in 627.4 below until the condition is corrected. Appropriate action may include Notice of Major Deviation (NMD) or Notice of Deviation (NOD).

(c) When a Notice of Major Deviation is received by a producer, he shall notify his users of the major deviation by the most expedient means and supply the proper data immediately after receipt of the notice.

(d) When a Notice of Deviation is received by a producer, he shall correct such deviations on the next scheduled publication.

627.4 Marking.

(a) Aeronautical charts for which a statement of conformance has been submitted shall be legibly and permanently marked with:

(1) The name and address of the producer responsible for the compliance and;

(2) The certification, "Conforms with FAA Part 627—Standards for Aeronautical Charts."

(b) A chart producer shall not mark any such charts as required in Subsection (a) of this Section unless he has complied with the method of conformance stated in 627.3(a).

(c) No note shall be added to charts which may be construed as noncertification by a producer as to the accuracy and currency of the chart content produced in conformance with these Standards.

Subpart B—Standards—IFR Charts

627.10 Applicability.

The standards specified herein shall apply to charts produced primarily for use by pilots operating aircraft in the United States under Instrument Flight Rules.

627.11 General.

(a) Charts other than Standard Instrument Departure Charts and Instrument Approach Procedure Charts shall depict all applicable designated airspace, related data and other regulatory actions within prescribed vertical limits of each chart series as contained in the following parts of the Regulations of the Administrator, FAA:

(1) *Part 600—Designation of Federal Airways*
Subpart B—Colored Federal Airways
Subpart C—Intermediate Altitude VOR Federal Airways
Subpart D—Low Altitude VOR Federal Airways

(2) *Part 601—Designation of Controlled Airspace, Reporting Points, Positive Control Route Segments, and Positive Control Areas*
Subpart B—Low Altitude Colored Federal Airway Control Areas
Subpart C—Control Area Extensions
Subpart D—Control Zones
Subpart E—Low Altitude Colored Federal Airway Reporting Points
Subpart F—Low Altitude VOR Federal Airway Control Areas
Subpart G—VOR Federal Airway Reporting Points
Subpart H—Continental Control Area
Subpart I—Designated Positive Control Route Segments
Subpart J—Designated Positive Control Areas

(3) *Part 602—Designation of Jet Routes, Jet Advory Areas and High Altitude Navigational Aids*
Subpart B—Jet Routes
Subpart C—Jet Advisory Areas

(4) *Part 608—Special Use Airspace*
Subpart B—Restricted Areas

(5) *Part 610—Minimum En Route IFR Altitudes*
Subpart E—Minimum En Route and IFR Altitudes over Particular Routes and Intersections

(6) *Part 620—Security Control of Air Traffic*
Subpart C—Designated Air Defense Identification Zones
Appendix B—Air Defense Identification Zones and Defense Areas

(b) All IFR charts shall be appropriately titled and shall indicate currency of data depicted and effective dates of chart if applicable. Each chart series shall provide for a legend portraying data that is not self-explanatory.

(c) All federally-operated radio aids to navigation utilized for control of traffic within the specific altitude airway/air route structure shall be shown on all IFR charts. Military aids for which military agencies or FAA indicate an operational requirement shall be included. All aids shall be appropriately identified by type (symbol), name, identification and frequency. Non-federal radio aids to air navigation shall also be shown if the FAA has approved the facility for use for en route flight or a standard instrument approach procedure has been approved and the procedure has been published in Part 609 of the Regulations of the Administrator. (NOTE: All non-federal aids shall be identified as such.)

(d) All Prohibited, Warning Areas, and Intensive Student Jet Training Areas shall be shown on all applicable charts within the vertical limits of the affected airspace and shall be identified by number. Effective altitude, time of use and controlling agency or using agency, if applicable, shall be shown on all IFR Charts. The controlling agency or using agency of Restricted Areas shall also be shown. When such areas cannot be shown in detail on the face of the chart, the detailed information shall be tabulated on each chart.

(e) All geographic information shall be plotted to indicate its true position except where deliberate distortion or displacement is a function design feature of the chart. In normal practice should it become necessary to displace symbols from their true geographical position for purposes of clarity, preference of location shall be given to radio facilities upon which an airway or control function is predicated.

627.12 Quality.

All charts produced in accordance with this regulation shall meet the standards associated with accepted cartographic practices. Aeronautical charts shall be so designed and produced as to adequately provide information required by the pilot for safe and efficient air navigation. An aeronautical chart shall provide clear, accurate, reliable and current information. Care shall be taken to ensure the general utility of the chart. Special consideration shall be given to legibility and scale with respect to the size of the charts. The size of the chart shall be such that it can be comfortably handled in the cockpit while still portraying all required information. The quality of the graphic medium and color usage shall be chosen to ensure adequate durability and maximum visibility under varying cockpit conditions.

627.13 En Route Charts.

En Route Charts produced for the various airways/jet route structures shall contain the airspace data as contained under paragraph 627.11 applicable to individual chart series.

(a) *Currentness*—An En Route Chart shall be revised and reissued by the producer:

(1) Whenever changes occur to the airway system which would render the chart ineffective in that area and which could not adequately be described otherwise prior to any schedule chart revision;

(2) On scheduled airspace amendment dates when the nature of the amendment will seriously influence the chart utility and the absence thereof may be construed as a major deviation or;

(3) If required in taking corrective action following the issuance of a Notice of Major Deviation.

At least every four weeks the producer shall provide the user with a schedule or list of current charts.

(b) *Content of En Route Charts*

(1) Distances in the airway and route structures shall be shown in nautical miles between facilities, compulsory reporting points, noncompulsory reporting points and other fixes (mileage breakdown points) that may be utilized in the control of air traffic.

(2) All times shall be Greenwich Mean Time (GMT), other than those times printed in local time to coincide with those times published in Parts 601 and 608.

(3) The following magnetic bearings and radials shall be shown:

a. The centerline radial of VOR airways.

b. The inbound bearings of all L/MF range courses on the low altitude charts.

c. The centerline inbound bearing of L/MF airways except where an L/MF range course lies within 5 degrees of airway centerline.

(4) An index for all charts in a series shall be provided.

(5) Aerodromes shall be shown which are appropriate to the particular operation of the aircraft including destinations, alternates, and appropriate emergency fields.

(6) The boundaries of Air Route Traffic Control Center Areas; Flight Information Regions; Upper Information Regions; Oceanic Control Areas, and International Boundaries, appropriately identified, shall be shown.

(7) VOR changeover points shall be shown on all route segments except in those instances when the changeover point is established by FAA at midpoint (±1 mile low altitude; ±2.5 miles medium and high altitude).

(8) Noncompulsory reporting points shall be shown, identified by name and appropriate reporting point symbol.

(9) A visual reference to the facilities which form intersections that are reporting points shall be shown when such are not obvious.

(10) Minimum Reception Altitude shall be shown when higher than Minimum En Route Altitude.

(11) Altimeter setting data shall be shown on those border or coastal charts depicting geographical areas wherein standard altimeter settings are used.

(12) Tabulation of en route air/ground voice communication frequencies associated with flight service stations (FSS) when all standard en route frequencies are not available shall be shown.

(13) ARTC Area Discrete Frequencies shall be shown.

627.14 Terminal Charts

(a) Area Arrival Charts

(1) *Currentness*—Area Arrival Charts shall be revised and reissued by the producer:

a. Whenever changes occur to the airway system which would render the chart ineffective in that area and which could not adequately be described otherwise prior to any schedule chart revision:

On scheduled airspace amendment dates when the nature of the amendment will seriously influence the chart utility and the absence thereof may be construed as a major deviation or;

If required in taking corrective action following the issuance of a Notice of Major Deviation.

At least every four weeks the producer shall provide the user with a schedule or list of current charts.

(2) *Content of Area Arrival Charts*

a. The low altitude route structure with distances in nautical miles between compulsory reporting points, noncompulsory reporting points and other fixes (mileage breakdown points) that may be utilized in the control of air traffic shall be depicted.

b. Arrival routes as determined by the FAA shall be shown.

c. The magnetic bearings of the centerline of low altitude airways, the inbound bearings of all L/MF range courses, the inbound bearing of all ILS systems, and other magnetic bearings and radials between fixes normally used for air traffic control service shall be shown.

d. All radio navigation aids associated with the Low Altitude Airways system and any other navigation aids associated with transition and landing procedures shall be shown.

e. All holding patterns established by the FAA for charting purposes shall be indicated. If DME holding patterns are depicted, mileages shall be shown.

f. Minimum En Route IFR altitudes shall be shown.

g. Airports, within chart limits, shall be shown having 3,000' hard surfaced runways and for which a Standard Instrument Approach Procedure has been published in Part 609, Regulations of the Administrator.

h. At least one segment of every medium or high altitude route required for transition to the normally used arrival routes shall be shown. This segment shall include the appropriate navigational aid defining the medium or high altitude route prior to the route terminating fix; the identification and frequency of the navigational aid; the medium and high altitude airway designation; *the mileage from the navigational facility* to the transition fix; the magnetic bearings of the centerlines of the airways.

i. Terminal area air/ground communication frequencies required for transition and arrival purposes shall be shown.

(b) Area Departure Charts

(1) *Currentness*—Area Departure Charts shall be revised and reissued by the producer:

a. Whenever changes occur to the airway system which would render the chart ineffective in that area and which could not adequately be described otherwise prior to any schedule chart revision;

b. On scheduled airspace amendment dates when the nature of the amendment will seriously influence the chart utility and the absence thereof may be construed as a major deviation or;

c. If required in taking corrective action following the issuance of a Notice of Major Deviation.

At least every four weeks the producer shall provide the user with a schedule or list of current charts.

(2) *Content of Area Departure Charts*

a. The low altitude route structure shall be shown with distances in nautical miles between compulsory reporting points, noncompulsory reporting points and other fixes (mileage breakdown points) that may be utilized in the control of air traffic.

b. Departure routes as determined by the FAA shall be depicted.

c. The magnetic bearings of the centerline of low altitude airways, the inbound bearings of all L/MF range courses and other magnetic bearings between fixes normally used for air traffic control service shall be shown.

d. All radio navigation aids associated with the Low Altitude Airways system and any special navigation aids associated with departure and transition procedures shall be shown.

e. Minimum En Route IFR altitudes shall be shown.

f. At least one segment of every medium or high altitude route required for transition to these route structures shall be shown. This segment shall include the appropriate navigational aid defining the medium or high altitude route from the transition fix to the aid, the identification and frequency of the navigational aid, the medium and high altitude airway designation, the mileage from the transition fix to the pertinent navigational aid and the magnetic bearings of the centerlines of the airways.

g. Terminal area air/ground communication frequencies required for departure and transition purposes shall be shown.

(c) Standard Instrument Departure Charts (SIDs)

(1) *Currentness*—Standard Instrument Departure Charts (SIDs) shall be revised and reissued by the producer:

a. When a Notice of Major Deviation has been issued to him by the FAA or;

b. When a revision to the SID is required by a change in the text of the SID or by a change in the route structure involved.

(2) *Content of SID Charts*

a. A graphic portrayal of the Standard Instrument Departure routes and all associated data shall be shown.

b. Textual descriptions of each route, which enable the pilot to conform with procedures shall be shown.

c. Route identification of each SID by title shall be shown.