ARINC 424 NDB
Draft 4 of Supplement 23
Proposal

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DEFINE REQUIRED FIELDS WITHIN TABLES IN CHAPTER 4

V.1

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SUMMARY
This proposal addresses a wish to clarify mandatory vs optional fields and unlink this information from the Character Type field.
At the same time, it does address a few typos

Sam Note:

This proposal was accepted at the October virtual meetings in 2021 and ARINC IA took the action to include it in Draft Supplement 24 of ARINC 424. This action was completed, and draft will be reviewed at the meeting.

1.0 INTRODUCTION/ BACK GROUND

In the current ARINC 424 specification, the definition of fields being optional or required is linked to the character type of the field. ARINC 424 uses the following terms:

- Alpha
- Numeric
- Alpha/numeric

Per definition in Chapter 2, the term Alpha means any letter, punctuation or printable character, except numbers. Numeric means any single number from 0-9. Chapter 5 defines that any optional field must be defined as alpha/numeric.

This definition leads to two main issues:

1) Fields that would be numeric fields, but cannot always be provided, i.e. are optional, must be defined as alpha/numeric, therefore not representing the real content of the field
2) Fields that contain numbers and letters are defined as alpha/numeric, which makes them optional by definition, even if not intended. E.g. all coordinate fields, all magnetic variation, declination and many more would be optional
3) Some fields are optional in one record type, while mandatory in other record types. This cannot be represented with the current definition.

2.0 DISCUSSION and or ACTION

This proposal is intended to uncouple the required/optional definition from the field type definition. For this reason, a new column for each record type in chapter 4 is added, which will define if a field is required.

I realize that such a change is a major task, and I hope this proposal could at least be considered a starting point, which may require some further adjustments as the group deems necessary.

In chapter 2, the terms Alpha, and Numeric required minor modifications, and 2 new terms, required and optional, are added.

In chapter 5, the specification of alpha/numeric means that a field may be left blank needs a new wording.

Finally, the complete chapter 4 was changed, adding a column to indicate if a field is required.

Finally yet importantly, some minor editorial errors are corrected:

- 4.2.6.2 Heliport Terminal Arrival Altitude Continuation Records (HK), did show the Application Type as "Users".
- 4.1.29.1 GLS Primary Record: Note 1 moved to Latitude field, note 2 removed. Reason: Note 1 deals with a position, therefore showing it on the Latitude field seems more

appropriate than the bearing field. Note 2 mentions "all coordinates", but the record only contains 1 set of coordinates.

3.0 Changes as depicted (Track Changes is Helpful)

2.0 GLOSSARY OF TERMS
2.1 Data Processing Terms

Alpha
The terms employed to describe any letter of the alphabet (A through Z); any punctuation; or any printable character, other than a numeric, including space. In case a field is optional, it may be filled with all blanks.

Numeric
The term employed to describe a field is filled ~~any~~ with single numbers in the range 0 through 9. A minus sign, character "-", in the left most position of a numeric field indicates a value below zero. In case a field is optional, it may be filled with all blanks.

Required
A required field must be provided. The allowed characters are defined by the field definition alpha, numeric or alpha/numeric. The fields that are defined as required are viewed as a minimum set of attributes required to define a ARINC 424 record and to define the object which is described in the record.
Note: There are a few one character long fields defined as required, which might be provided being filled with a space. In such fields, the content "blank" is defined to have a meaning.

Optional
An optional field may be left blank. The allowed characters are defined by the field definition alpha, numeric or alpha/numeric. A field provided with all spaces means no value is provided.

Commentary:
Additional fields may be declared required by mutual agreement between a data house and a ARINC 424 file user.

5.0 NAVIGATION DATA – FIELD DEFINITIONS
5.1 General
Section sets forth definitions/descriptions and content for each type of field employed in the records discussed in Chapter 4. The following information is presented for each field:
- a. Field Name (section heading)
- b. Abbreviation used in proportional record layouts (Chapter 4) when different than Field Name (follows section heading)
- c. Field Definition/Description
- d. Source/Content of each field
- e. Length of field, expressed in number of characters
- f. Type of character allowed in each field, alpha or numeric or alpha/numeric
- g. Examples of field content when appropriate and/or necessary

The following general rules apply to the format of all the fields:
- a. All numeric fields and the numeric parts of latitude, longitude, magnetic variation, negative elevation, and station declination fields will be right justified and filled with leading zeros.
- b. All alpha and alpha/numeric fields will be left justified.

c. Any field for which the content is ~~optional~~ mandatory will be defined as ~~alpha/numeric content~~required in chapter 4. The absence of data for ~~such optional~~ fields must be indicated by filling the field with blanks (i.e., ASCII spaces).

4.0 NAVIGATION DATA – RECORD LAYOUT

4.0.1 General

In an effort to describe the Master Airline and Master Helicopter sections, Section 4 is divided into Section 4.1, Navigation Data - Record Layout, Master Airline User Content, and Section 4.2, Navigation Data - Record Layout, Master Helicopter User Content.

Each record is made up of combinations of the fields described in Chapter 5 of this document. This chapter sets forth the standard layout of each type of record found in the database. These layouts are also presented diagrammatically at the end of this section. Paragraphs and tables in the 4.1 series are the record types, which have been identified as being a part of Master Airline User Content. Paragraphs and tables in the 4.2 series are the record types, which have been identified as being part of the Master Helicopter User Content. This paragraph and table numbering system does not prevent any given database from including any of the records defined in this document. The separation is for editorial and reference purposes only.

Each record contains 132-character positions or columns. Not all of these are used in every record. Some are left blank to permit like information to appear in the same columns of different records and others are reserved for the possible future expansion of the record's content. In the tables that follow, the former is identified by the term Blank (Spacing) under the Field heading. The latter are identified by the term Reserved, followed by the function for which the reservation is made (where it can specifically be stated).

The tables show the record columns occupied by each field. For convenience, the number of characters in each field is shown in brackets following the field name. Also, the section numbers in Chapter 5 of this document wherein individual fields are defined are referenced. Each table appears under a section heading that is followed by the database section and subsection codes employed in the record described.

4.1 Master Airline User File

4.1.2 VHF NAVAID Record (D)

The VHF NAVAID file contains details of all VOR, VOR/DME, VORTAC, DME and TACAN stations within the geographical area of interest. The exception to this is when VOR and TACAN or VOR and DME stations at the same location have the same identifier but different operating frequencies as the file is based on having unique identifiers for stations at a given location. In such cases of identifier duplication, the VOR will be provided in this file and the TACAN or DME portion will be provided in the TACAN Only Navaid Record (DT).

Y= Yes is required

4.1.2.1 VHF NAVAID Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Yes
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 10	Airport ICAO Identifier (4)	5.6	
11 thru 12	ICAO Code (2)	5.14	
13	Blank (Spacing) (1)		
14 thru 17	VOR Identifier (4)	5.33	Y
18 thru 19	Blank (Spacing) (2)		
20 thru 21	ICAO Code (2)	5.14	Y
22	Continuation Record No. (1)	5.16	Y
23 thru 27	VOR Frequency (5)	5.34	Y
28 thru 32	NAVAID Class (5)	5.35	Y
33 thru 41	VOR Latitude (9)	5.36	
42 thru 51	VOR Longitude (10)	5.37	
52 thru 55	DME Ident (4)	5.38	
56 thru 64	DME Latitude (9)	5.36	
65 thru 74	DME Longitude (10)	5.37	
75 thru 79	Station Declination (5)	5.66	
80 thru 84	DME Elevation (5)	5.40	
85	Navaid Useable Range (1)	5.149	
86 thru 87	ILS/DME Bias (2)	5.90	
88 thru 90	Frequency Protection (3)	5.150	
91 thru 93	Datum Code (3)	5.197	
94 thru 118	VOR Name (25)	5.71	
119	VFR Checkpoint Flag (1)	5.158	
120	VOR Range/Power (1)	5.338	
121	Expanded DME Service Volume (1)	5.339	
122	Route Inappropriate DME (1)	5.297	
123	DME Operational Service Volume (1)	5.277	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.2.2 VHF NAVAID Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 92	Notes (69)	5.61	
93 thru 123	Reserved (Expansion) (31)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.2.3 VHF NAVAID Simulation Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 27	Blank (Spacing) (4)		
28 thru 32	Facility Characteristics (5)	5.93	
33 thru 74	Reserved (Spacing) (42)		
75 thru 79	Magnetic Variation (5)	5.39	
80 thru 84	Facility Elevation (5)	5.92	
85 thru 123	Reserved (Expansion) (39)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.2.4 VHF NAVAID Flight Planning Continuation Records

This Continuation Record is used to indicate the FIR and UIR within which the VHF NAVAID defined in the Primary Record is located.

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 27	FIR Identifier (4)	5.116	
28 thru 31	UIR Identifier (4)	5.116	
32 thru 43	Blank (Spacing) (12)		
44	FIR/FRA Entry Point (1)	5.311	
45	FIR/FRA Exit Point (1)	5.311	
46	FRA Arrival Transition Point (1)	5.311	
47	FRA Departure Transition Point (1)	5.311	
48	FRA Intermediate Point (1)	5.311	
49	FRA Terminal Holding Point (1)	5.311	
50 thru 123	Reserved (Expansion) (74)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.2.5 VHF NAVAID Flight Planning Continuation Records

Deleted by Supplement 19.

4.1.2.6 VHF NAVAID Limitation Continuation Record

This Continuation Record is used to provide details on signal limitations of the VHF Navaid contained in the Primary Record Section 4.1.2.1. Note that multiple records formatted as in Section 4.1.2.6 may be included for a single Primary Record. As Service Volume or Designated Operational Coverage may also be considered limitations, this information is also provided for each navaid listed in the Primary Records, where such information is available.

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24	Navaid Limitation Code (1)	5.205	
25	Component Affected Indicator (1)	5.206	
26 thru 27	Sequence Number (2)	5.12	
28 thru 29	Sector From/Sector To (2)	5.207	
30	Distance Description (1)	5.187	
31 thru 36	Distance Limitation (6)	5.208	
37	Altitude Description (1)	5.29	
38 thru 43	Altitude Limitation (6)	5.209	
44 thru 45	Sector From/Sector To (2)	5.207	
46	Distance Description (1)	5.187	
47 thru 52	Distance Limitation (6)	5.208	
53	Altitude Description (1)	5.29	
54 thru 59	Altitude Limitation (6)	5.209	
60 thru 61	Sector From/Sector To (2)	5.207	
62	Distance Description (1)	5.187	
63 thru 68	Distance Limitation (6)	5.208	
69	Altitude Description (1)	5.29	
70 thru 75	Altitude Limitation (6)	5.209	
76 thru 77	Sector From/Sector To (2)	5.207	
78	Distance Description (1)	5.187	
79 thru 84	Distance Limitation (6)	5.208	
85	Altitude Description (1)	5.29	
86 thru 91	Altitude Limitation (6)	5.209	
92 thru 93	Sector From/Sector To (2)	5.207	
94	Distance Description (1)	5.187	
95 thru 100	Distance Limitation (6)	5.208	
101	Altitude Description (1)	5.29	
102 thru 107	Altitude Limitation (6)	5.209	
108	Sequence End Indicator (1)	5.210	
109 thru 123	Blank (Spacing) (15)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.3 NDB NAVAID Record (DB or PN)

The Enroute NDB NAVAID file (DB) contains all enroute on-airway and off-airway NDBs within the geographical area of interest. The Terminal NDB NAVAID file (PN) contains NDBs associated with the Airports contained in Subsection 3.2.4.1 and Heliport contained in Section 3.3.3. Terminal NDBs referenced to two or more Airports or Heliports will be available in the Enroute NDB Subsection unless that handling would create duplicate NDB identifiers within that Subsection. Marine Beacons shown on aeronautical charts may also be included in this record type.

4.1.3.1 NDB NAVAID Primary Records

Columns	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 10	Airport ICAO Identifier (4)	5.6	(PN)
11 thru 12	ICAO Code (2)	5.14	(PN)
13	Blank (Spacing) (1)		
14 thru 17	NDB Identifier (4)	5.33	Y
18 thru 19	Blank (Spacing) (2)		
20 thru 21	ICAO Code (2)	5.14	Y
22	Continuation Record No. (1)	5.16	Y
23 thru 27	NDB Frequency (5)	5.34	Y
28 thru 32	NDB Class (5)	5.35	Y
33 thru 41	NDB Latitude (9)	5.36	Y
42 thru 51	NDB Longitude (10)	5.37	Y
52 thru 74	Blank (Spacing) (23)		
75 thru 79	Magnetic Variation (5)	5.39	
80	VFR Checkpoint Flag (1)	5.158	
81 thru 85	Blank (Spacing) (5)		
86 thru 90	Reserved (Expansion) (5)		
91 thru 93	Datum Code (3)	5.197	
94 thru 123	NDB Name (30)	5.71	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.3.2 NDB NAVAID Continuation Records

Columns	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 92	Notes (69)	5.61	
93 thru 123	Reserved (Expansion) (31)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.3.3 NDB NAVAID Simulation Continuation Record

Columns	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 27	Blank (Spacing) (4)		
28 thru 32	Facility Characteristics (5)	5.93	
33 thru 79	Reserved (Spacing) (47)		
80 thru 84	Facility Elevation (5)	5.92	
85 thru 123	Reserved (Expansion) (39)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.3.4 NDB NAVAID Flight Planning Continuation Records

This Continuation Record is used to indicate the FIR and UIR within which the NDB NAVAID defined in the Primary Record is located.

Columns	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 27	FIR Identifier (4)	5.116	
28 thru 31	UIR Identifier (4)	5.116	
32 thru 43	Blank (Spacing) (12)		
44	FIR/FRA Entry Point (1)	5.311	
45	FIR/FRA Exit Point (1)	5.311	
46	FRA Arrival Transition Point (1)	5.311	
47	FRA Departure Transition Point (1)	5.311	
48	FRA Intermediate Point (1)	5.311	
49	FRA Terminal Holding Point (1)	5.311	
50 thru 123	Reserved (Expansion) (74)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.3.5 NDB NAVAID Flight Planning Continuation Records

Deleted by Supplement 19.

4.1.4 Waypoint Record (EA) or (PC)

The Enroute Waypoint file (EA) contains all enroute on-airway and off-airway waypoints within a desired geographical area. The Airport Terminal Waypoint file (PC) contains all terminal waypoints and VFR waypoints within the geographical area of each airport. Airport Terminal Waypoints utilized by two or more airports will be stored in the Enroute Waypoint Subsection (EA) to eliminate duplication. Terminal Waypoints used jointly by an airport and a heliport are also stored in the Enroute Waypoint file. The Enroute Waypoint File will contain waypoints established for Helicopter Airways. For Heliport Terminal Waypoints (HC), see Section 4.2.2.

4.1.4.1 Waypoint Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5 Note 1	Y
7 thru 10	Region Code (4)	5.41 Note 2	Y
11 thru 12	ICAO Code (2)	5.14	Y if PC
13	Subsection (1)	5.5 Note 1	Y
14 thru 18	Waypoint Identifier (5)	5.13	Y
19	Blank (Spacing) (1)		
20 thru 21	ICAO Code (2)	5.14	Y
22	Continuation Record No. (1)	5.16	Y
23 thru 26	Blank (Spacing) (4)		
27 thru 29	Waypoint Type (3)	5.42	
30	Reserved (1)		
31	Waypoint Usage (1)	5.82	
32	Blank (Spacing) (1)		
33 thru 41	Waypoint Latitude (9)	5.36	Y
42 thru 51	Waypoint Longitude (10)	5.37	Y
52 thru 74	Blank (Spacing) (23)		
75 thru 79	Dynamic Magnetic Variation (5)	5.39	
80	VFR Checkpoint Flag (1)	5.158	
81 thru 84	Reserved (Expansion) (4)		
85 thru 87	Datum Code (3)	5.197	
88 thru 95	Reserved (Expansion) (8)		
96 thru 98	Name Format Indicator (3)	5.196	
99 thru 123	Waypoint Name/Description (25)	5.43	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: In Enroute Waypoint Records, the Subsection Code occupies column 6, with column 13 blank. In Airport or Heliport Terminal Waypoint Records, the Subsection Code occupies column 13, with column 6 blank.

Note 2: In Enroute Waypoint Records, the code ENRT is used. In Terminal Waypoint records, the region code field contains the Airport ICAO Identification code.

4.1.4.2 Waypoint Continuation Records

Columns	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 92	Notes (69)	5.61	
93 thru 123	Reserved (Expansion) (31)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.4.3 Waypoint Flight Planning Continuation Record

This Continuation Record is used to indicate the FIR and UIR within which the Waypoint defined in the Primary Record is located.

Column	Field Name (Length)	Reference	
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 27	FIR Identifier (4)	5.116	
28 thru 31	UIR Identifier (4)	5.116	
32 thru 43	Blank (Spacing) (12)		
44	FIR/FRA Entry Point (1)	5.311	
45	FIR/FRA Exit Point (1)	5.311	
46	FRA Arrival Transition Point (1)	5.311	
47	FRA Departure Transition Point (1)	5.311	
48	FRA Intermediate Point (1)	5.311	
49	FRA Terminal Holding Point (1)	5.311	
50 thru 123	Reserved (Expansion) (74)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.4.4 Waypoint Flight Planning Continuation Records

Deleted by Supplement 19.

4.1.5 Holding Pattern Records (EP)

The Enroute Holding Patterns contained in this file are holding patterns recommended by the official government authority for inclusion on enroute aeronautical charts. The Terminal Holding Patterns included in this file are holding patterns recommended for aeronautical charts for the geographical area of an airport or heliport. The type, Enroute or Terminal, will be determined by the Subsection of the fix upon which the holding is predicated.

4.1.5.1 Holding Pattern Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 10	Region Code (4)	5.41 Note 1	Y
11 thru 12	ICAO Code (2)	5.14 Note 1	
13 thru 27	Blank (Spacing) (15)		
28 thru 29	Duplicate Indicator (2)	5.114	Y
30 thru 34	Fix Identifier (5)	5.13	Y
35 thru 36	ICAO Code (2)	5.14	Y
37	Section Code (1)	5.4	Y
38	Subsection Code (1)	5.5	Y
39	Continuation Record No. (1)	5.16	Y
40 thru 43	Inbound Holding Course (4)	5.62	Y
44	Turn Direction (1)	5.63	Y
45 thru 47	Leg Length (3)	5.64	Y (or 5.65)
48 thru 49	Leg Time (2)	5.65	Y (or 5.64)
50 thru 54	Minimum Altitude (5)	5.30	
55 thru 59	Maximum Altitude (5)	5.127	
60 thru 62	Holding Speed (3)	5.175	
63 thru 65	RNP (3)	5.211	
66 thru 71	Arc Radius (6)	5.204	
72 thru 74	Vertical Scale Factor (3)	5.293	
75 thru 77	RVSM Minimum Level (3)	5.294	
78 thru 80	RVSM Maximum Level (3)	5.295	
81	Leg Inbound/Outbound Indicator (1)	5.298	
82 thru 98	Reserved (Expansion) (17)		
99 thru 123	Name (25)	5.60	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: In Enroute Fix Holding Pattern records, the code of ENRT is used in the Region Code field and the ICAO Code field is blank. In Terminal Fix Holding Records, the Region Code field contains the identifier of the Airport or Heliport with which the holding is associated. The ICAO Code field will not be blank. This information will uniquely identify the Terminal NDB, Airport Terminal Waypoint or Heliport Terminal Waypoint.

4.1.5.2   Holding Pattern Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 38	Fields as on Primary Records		Y
39	Continuation Record No. (1)	5.16	Y
40	Application Type (1)	5.91	Y
41 thru 109	Notes (69)	5.61	
110 thru 123	Reserved (Expansion) (14)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.6   Enroute Airways Records (ER)

The Enroute Airways file will contain the sequential listing of officially published airways and other established ATS Routes by geographical areas. The file also contains published airways specific to helicopter operations.

4.1.6.1 Enroute Airways Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 13	Blank (Spacing) (7)		
14 thru 18	Route Identifier (5)	5.8	Y
19	Reserved (1)	Note 1	
20 thru 25	Blank (Spacing) (6)		
26 thru 29	Sequence Number (4)	5.12	Y
30 thru 34	Fix Identifier (5)	5.13	Y
35 thru 36	ICAO Code (2)	5.14	Y
37	Section Code (1)	5.4	Y
38	Subsection (1)	5.5	Y
39	Continuation Record No. (1)	5.16	Y
40 thru 43	Waypoint Description Code (4)	5.17	
44	Boundary Code (1)	5.18	
45	Route Type (1)	5.7	
46	Level (1)	5.19	
47	Direction Restriction (1)	5.115	
48 thru 49	Cruise Table Indicator (2)	5.134	
50	EU Indicator (1)	5.164	
51 thru 54	Recommended NAVAID (4)	5.23	
55 thru 56	ICAO Code (2)	5.14	
57 thru 59	RNP (3)	5.211	
60	Section Code (1)	5.4	
61	Subsection Code (1)	5.5	
62	Blank (Spacing) (1)		
63 thru 66	Theta (4)	5.24	
67 thru 70	Rho (4)	5.25	
71 thru 74	Outbound Magnetic Course (4)	5.26	
75 thru 78	Route Distance From (4)	5.27	
79 thru 82	Inbound Magnetic Course (4)	5.28	
83	Blank (Spacing) (1)		
84 thru 88	Minimum Altitude (5)	5.30	
89 thru 93	Minimum Altitude (5)	5.30	
94 thru 98	Maximum Altitude (5)	5.127	
99 thru 101	Fix Radius Transition Indicator (3)	5.254	
102 thru 104	Vertical Scale Factor (3)	5.293	
105 thru 107	RVSM Minimum Level (3)	5.294	
108 thru 110	VSF RVSM Maximum Level (3)	5.295	
111 thru 114	Reserved (4)		
115	Blank (Spacing) (1)		
116 thru 120	Maximum Altitude (5)	5.127	
121	Route Qualifier 1 (1)	5.7 Note 2	
122	Route Qualifier 2 (1)	5.7 Note 2	
123	Route Qualifier 3 (1)	5.7 Note 2	
124 thru 128	File Record No (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: The standard length for the Route Identifier is five characters. Some users envisage the need for a six-character field. This reserved column will permit this usage. Some data suppliers may use this position for the ATS Service suffix associated with some Route Identifiers.

Note 2: Route Qualifiers 1 through 3 will be provided for RNAV or RNP airways and those helicopter airways published referencing an ICAO PBN Navigation Specification.

4.1.6.2 Enroute Airways Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 38	Fields as on Primary Records		Y
39	Continuation Record No. (1)	5.16	Y
40	Application Type (1)	5.91	Y
41 thru 109	Notes (69)	5.61	
110 thru 123	Reserved (Expansion) (14)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.6.3 Enroute Airways Flight Planning Continuation Records

This Continuation Record is used to indicate restrictive airspace that affects the Primary Record according to the definition given in Section 2.0, Glossary of Terms.

Column	Field Name (Length)	Reference	Required
1 thru 38	Fields as on Primary Records		Y
39	Continuation Record No. (1)	5.16	Y
40	Application Type (1)	5.91	Y
41 thru 66	Blank (Spacing) (26)		
67 thru 68	Restricted Airspace ICAO Code (2)	5.14	
69	Restricted Airspace Type (1)	5.128	
70 thru 79	Restricted Airspace Designation (10)	5.129	
80	Restricted Airspace Multiple Code (1)	5.130	
81 thru 82	Restricted Airspace ICAO Code (2)	5.14	
83	Restricted Airspace Type (1)	5.128	
84 thru 93	Restricted Airspace Designation (10)	5.129	
94	Restricted Airspace Multiple Code (1)	5.130	
95 thru 96	Restricted Airspace ICAO Code (2)	5.14	
97	Restricted Airspace Type (1)	5.128	
98 thru 107	Restricted Airspace Designation (10)	5.129	
108	Restricted Airspace Multiple Code (1)	5.130	
109 thru 110	Restricted Airspace ICAO Code (2)	5.14	
111	Restricted Airspace Type (1)	5.128	
112 thru 121	Restricted Airspace Designation (10)	5.129	
122	Restricted Airspace Multiple Code (1)	5.130	
123	Restricted. Airspace Link Continuation (1)	5.174	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.6.4 Enroute Airways Flight Planning Continuation Records

Deleted by Supplement 19.

4.1.7 Airport Records (PA)

This file contains airport information for all airports within the desired geographical reference area and meeting other criteria on available runways. Additionally, the file contains all airports required to support Enroute Airway structure coding for those areas where Airport reference points are used as enroute airway fixes.

4.1.7.1 Airport Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Airport ICAO Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 16	ATA/IATA Designator (3)	5.107	
17 thru 18	Reserved (Expansion) (2)		
19 thru 21	Blank (Spacing) (3)		
22	Continuation Record Number (1)	5.16	Y
23 thru 27	Speed Limit Altitude (5)	5.73	
28 thru 30	Longest Runway (3)	5.54	
31	IFR Capability (1)	5.108	
32	Longest Runway Surface Code (1)	5.249	
33 thru 41	Airport Reference Point Latitude (9)	5.36	Y
42 thru 51	Airport Reference Point Longitude (10)	5.37	Y
52 thru 56	Magnetic Variation (5)	5.39	
57 thru 61	Airport Elevation (5)	5.55	
62 thru 64	Speed Limit (3)	5.72	
65 thru 68	Recommended Navaid (4)	5.23	
69 thru 70	ICAO Code (2)	5.14	
71 thru 75	Transitions Altitude (5)	5.53	
76 thru 80	Transition Level (5)	5.53	
81	Public/Military Indicator (1)	5.177	
82 thru 84	Time Zone (3)	5.178	
85	Daylight Indicator (1)	5.179	
86	Magnetic/True Indicator (1)	5.165	
87 thru 89	Datum Code (3)	5.197	
90	VFR Checkpoint Flag (1)	5.158	
91 thru 93	Reserved (Expansion) (3)		
94 thru 123	Airport Name (30)	5.71	
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.7.2 Airport Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Field as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 92	Notes (69)	5.61	
93 thru 123	Reserved (Expansion) (31)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.7.3 Airport Flight Planning Continuation Records

This Continuation Record is used to indicate the FIR and UIR within which the Airport defined in the Primary Record is located and provides an indication if the Airport defined in the Primary Record is associated with Controlled Airspace.

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 27	FIR Identifier (4)	5.116	
28 thru 31	UIR Identifier (4)	5.116	
32 thru 66	Blank (Spacing) (35)		
67	Controlled Airspace Indicator (1)	5.217	
68 thru 71	Controlled Airspace Airport Ident (4)	5.6	
72 thru 73	Controlled Airspace Airport ICAO (2)	5.14	
74 thru 123	Blank (Spacing) (50)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.7.4 Airport Flight Planning Continuation Records

Deleted by Supplement 19.

4.1.8 Airport Gate Records (PB)

This file contains passenger gate information.

4.1.8.1   Airport Gate Primary Record

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Airport ICAO Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 18	Gate Identifier (5)	5.56	Y
19 thru 21	Blank (Spacing) (3)		
22	Continuation Record No. (1)	5.16	Y
23 thru 32	Blank (Spacing) (10)		
33 thru 41	Gate Latitude (9)	5.36	
42 thru 51	Gate Longitude (10)	5.37	
52 thru 98	Reserved (Expansion) (47)		
99 thru 123	Name (25)	5.60	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.8.2   Airport Gate Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Field as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 92	Notes (69)	5.61	
93 thru 123	Reserved (Expansion) (31)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.9   Airport SID/STAR/Approach (PD, PE, and PF)

Airport SIDs, STARs, and Approach Procedures are contained in three separate Section/Subsection groupings, using this single record format. Section/Subsection PD contains a sequential listing of those published Airport Standard Instrument Departures that can be encoded according to this specification. Section/Subsection PE contains a sequential list of those published Airport Standard Terminal Arrival Routes that can be encoded according to this specification. Section/Subsection PF contains a sequential listing of those published Airport Standard Instrument Approach Procedures that can be encoded according to this specification.

4.1.9.1 Airport SID/STAR/Approach Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Airport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 19	SID/STAR/Approach Identifier (6)	5.9, 5.10 Note 1	Y
20	Route Type (1)	5.7	Y
21 thru 25	Transition Identifier (5)	5.11	Y
26	Procedure Design Aircraft Category or Type	5.301	Y
27 thru 29	Sequence Number (3)	5.12	Y
30 thru 34	Fix Identifier (5)	5.13	
35 thru 36	ICAO Code (2)	5.14	
37	Section Code (1)	5.4	
38	Subsection Code (1)	5.5	
39	Continuation Record Number (1)	5.16	Y
40 thru 43	Waypoint Description Code (4)	5.17	
44	Turn Direction (1)	5.20	
45 thru 47	RNP (3)	5.211 Note 4	
48 thru 49	Path and Termination (2)	5.21	Y
50	Turn Direction Valid (1)	5.22	
51 thru 54	Recommended Navaid (4)	5.23	
55 thru 56	ICAO Code (2)	5.14	
57 thru 62	ARC Radius (6)	5.204	
63 thru 66	Theta (4)	5.24	
67 thru 70	Rho (4)	5.25	
71 thru 74	Magnetic Course (4)	5.26	
75 thru 78	Route Distance/Holding Distance or Time (4)	5.27	
79	RECD NAV Section (1)	5.4	
80	RECD NAV Subsection (1)	5.5	
81	Leg Inbound/Outbound Indicator (1)	5.298	
82	Reserved (Expansion) (1)		
83	Altitude Description (1)	5.29	
84	ATC Indicator (1)	5.81	
85 thru 89	Altitude (5)	5.30	
90 thru 94	Altitude (5)	5.30	
95 thru 99	Transition Altitude (5)	5.53	
100 thru 102	Speed Limit (3)	5.72	
103 thru 106	Vertical Angle (4)	5.70	
107 thru 111	Center Fix or TAA Procedure Turn Indicator (5)	5.144 or 5.271	
112	Multiple Code or TAA Sector Identifier (1)	5.130 or 5.272	
113 thru 114	ICAO Code (2)	5.14 Note 3	
115	Section Code (1)	5.4 Note 3	
116	Subsection Code (1)	5.5 Note 3	
117	GNSS/FMS Indication (1)	5.222	
118	Speed Limit Description (1)	5.261	
119	Route Qualifier 1 (1)	5.7 Note 2	
120	Route Qualifier 2 (1)	5.7 Note 2	
121	Route Qualifier 3 (1)	5.7 Note 2	
122	Preferred Multiple Approach Indicator (1)	5.306	
123	Reserved (Expansion) (1)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: For approach route idents including Multiple Indicator, see Section 5.10.

Note 2: Columns 119 thru 121 (Route Qualifier 1, 2, and 3) are required to match the Primary Record to the Continuation Record(s). This non-standard column sorting sequence was selected to preserve the Primary Record for SID/STAR/Records as much as possible as these new fields were introduced in Supplement 14.

Note 3: When columns 107 thru 116 are providing a reference to a MSA or the center fix for an RF leg, all of the columns are used. When they are providing a reference to a TAA, only columns 107 thru 112 are used and 113 thru 116 are blank.

Note 4: If there is only one set of RNP criteria for the RNAV procedure, that criteria is provided in the RNP value field for Primary Record. Otherwise, the Primary Record contains one consistent set of RNP values for the least restrictive RNAV operating criteria and not a mix of RNP values for different RNP operating criteria.

4.1.9.2 Airport SID/STAR/Approach Primary Extension Continuation Records

Column	Field Name (Length)	Reference		Required
1 thru 38	Fields as on Primary Records			Y
39	Continuation Record Number (1)	5.16		Y
40	Application Type (1)	5.91		Y
41 thru 43	Procedure TCH (3)	5.67		
44 thru 60	Blank Spacing (17)			
61 thru 65	Procedure Design Mag Var (5)	5.290	Note 2	
66	Procedure Design Mag Var Indicator (1)	5.291	Note 2	
67 thru 71	Procedure Referenced Fix Ident (5)	5.299	Note 3	
72 thru 73	ICAO Code (2)	5.14		
74	Section Code	5.4		
75	Subsection Code	5.5		
76 thru 80	Procedure Referenced Fix Ident (5)	5.299	Note 3	
81 thru 82	ICAO Code (2)	5.14		
83	Section Code	5.4		
84	Subsection Code	5.5		
85 thru 89	Procedure Referenced Fix Ident (5)	5.299	Note 3	
90 thru 91	ICAO Code (2)	5.14		
92	Section Code	5.4		
93	Subsection Code	5.5		
94 thru 98	Procedure Referenced Fix Ident (5)	5.299	Note 3	
99 thru 100	ICAO Code (2)	5.14		
101	Section Code	5.4		
102	Subsection Code	5.5		
103 thru 104	CAT A Radii (2)	5.292		
105 thru 106	CAT B Radii (2)	5.292		
107 thru 108	CAT C Radii (2)	5.292		
109 thru 110	CAT D Radii (2)	5.292		
111	Special Indicator	5.307		
112 thru 115	Reserved (4)			
116 thru 118	Vertical Scale Factor	5.293		
119	Route Qualifier 1 (1)	5.7	Note 1	
120	Route Qualifier 2 (1)	5.7	Note 1	
121	Route Qualifier 3 (1)	5.7	Note 1	
122 thru 123	Reserved (2)			
124 thru 128	File Record Number (5)	5.31		Y
129 thru 132	Cycle Date (4)	5.32		Y

Note 1: Columns 119 thru 121 (Approach Route Qualifier 1, 2, and 3) are required to match the Primary Record to the Continuation Record(s). This non-standard column sorting sequence was selected to preserve the Primary Record for SID/STAR/Approach Records as much as possible as these new fields were introduced in Supplement 14.

Note 2: When a government source provides Procedure Design Mag Var at the procedure level, a single Primary Extension Continuation Record will be provided, associated to the first sequence in each transition and the Procedure Design Mag Var Indicator will be set to P. This is consistent with the intent of this continuation record. When a government source provides Procedure Design Mag Var at the leg level, a Primary Extension Continuation Record will be provided associated with each sequence of each transitions and the Procedure Design Mag Var Indicator will be set to L.

Note 3: When government source provides more than four Procedure Referenced Fix Idents, multiple Airport SID/STAR/Primary Extension Approach Continuation Records will be provided.

4.1.9.3 Airport SID/STAR/Approach Flight Planning Continuation Records

This Continuation Record is used to indicate the Leg Distance for each segment of the Route.

Column	Field Name (Length)	Reference	Required
1 thru 38	Field as on Primary		Y
39	Continuation Record No. (1)	5.16	Y
40	Application Type (1)	5.91	Y
41	ATC Assigned Only (1)	5.159	
42 thru 74	Blank (Spacing) (33)		
75 thru 78	Leg Distance (4)	5.260	
79 thru 118	Reserved (Expansion) (40)		
119	Route Qualifier 1 (1)	5.7 Note 1	
120	Route Qualifier 2 (1)	5.7 Note 1	
121	Route Qualifier 3 (1)	5.7 Note 1	
122 thru 123	Blank (Spacing) (2)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: Columns 119 thru 121 (Route Qualifier 1, 2, and 3) are required to match the Primary Record to the Continuation Record(s). This non-standard column sorting sequence was selected to preserve the Primary Record for SID/STAR/ Approach Records as much as possible as these new fields were introduced in Supplement 14.

4.1.9.4 Airport SID/STAR Flight Planning Continuation Records

Deleted by Supplement 19.

4.1.9.5 Airport Procedure Data Continuation Record

The Airport Procedure Data Continuation Record is used to provide Level of Service information on for RNAV Approach Procedures. Level of Service and Authorization are based on source-provided operating minimums as described in Sections 5.275, 5.276, and 5.296 of this document. This Continuation Record is provided once per procedure as a Continuation to Primary Approach Procedure Record that contains the encoding for Final Approach Fix (FAF) of the procedure.

Column	Field Name (Length)	Reference	Required
1 thru 38	Fields as on Primary Record		Y
39	Continuation Record Number (1)	5.16	Y
40	Application Type (1)	5.91	Y
41	FAS Block Provided Authorized (1)	5.276	
42 thru 51	FAS Block Provided Lev of Service Name (10)	5.275	
52	LNAV/VNAV Authorized (1)	5.276	
53 thru 62	LNAV/VNAV Level of Service Name (10)	5.275	
63	LNAV Authorized (1)	5.276	
64 thru 73	LNAV Level of Service Name (10)	5.275	
74	Remote Altimeter Flag (1)	5.308	
75	Baro-VNAV Not Authorized (1)	5.155	
76 thru 88	Blank (Spacing) (13)		
89	RNP Authorized (1)	5.276	
90 thru 92	RNP Level of Service value (3)	5.296	
93	RNP Authorized (1)	5.276	
94 thru 96	RNP Level of Service value (3)	5.296	
97	RNP Authorized (1)	5.276	
98 thru 100	RNP Level of Service value (3)	5.296	
101	RNP Authorized (1)	5.276	
102 thru 104	RNP Level of Service value (3)	5.296	
105 thru 118	Blank (Spacing) (14)		
119	Route Qualifier 1 (1)	5.7 Note 1	
120	Route Qualifier 2 (1)	5.7 Note 1	
121	Route Qualifier 3 (1)	5.7 Note 1	
122 thru 123	Blank (2)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: Columns 119 thru 121 (Approach Route Type Qualifiers 1, 2, and 3) are required to match the Primary Record to the Continuation Record(s). This non-standard column sorting sequence was selected to preserve the Primary Record for SID/STAR/Approach Records as much as possible as these new fields were introduced in Supplement 14.

4.1.9.6 Airport SID/STAR/Approach Procedure Name Continuation Record

The Airport SID/STAR/Approach Name Continuation Record contains the textual representation of the SID/STAR/Approach full procedure name as described in Section 5.139 of this document.

For SID and STAR procedures having a common portion (Route Type 2), this Continuation Record is provided for the first record of the route type 2 coding.

For SID and STAR procedures having no common portion (Route Type 2), this Continuation Record is provided for the first record of each runway transition.

For approach procedures, this Continuation Record is provided once per procedure as a Continuation to the first record of the final approach coding.

Column	Field Name (Length)	Reference	Required
1 thru 38	Fields as on Primary Record		Y
39	Continuation Record Number (1)	5.16	Y
40	Application Type (1)	5.91	Y
41 thru 118	Procedure Name (78)	5.139	
119	Route Qualifier 1 (1)	5.7 Note 1	
120	Route Qualifier 2 (1)	5.7 Note 1	
121	Route Qualifier 3 (1)	5.7 Note 1	
122 thru 123	Blank (2)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: Columns 119 thru 121 (Approach Route Qualifier 1, 2, and 3) are required to match the Primary Record to the Continuation Record(s). This non-standard column sorting sequence was selected to preserve the Primary Record for SID/STAR/Approach Records as much as possible as these new fields were introduced in Supplement 14.

4.1.10 Runway Records (PG)

This file contains runway information.

4.1.10.1 Runway Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Airport ICAO Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	
14 thru 18	Runway Identifier (5)	5.46	Y
19 thru 21	Blank (Spacing) (3)		
22	Continuation Record No. (1)	5.16	Y
23 thru 27	Runway Length (5)	5.57	
28 thru 31	Runway Magnetic Bearing (4)	5.58	
32	Landing Threshold Coordinates Source (1)	5.95	
33 thru 41	Runway Latitude (9)	5.36	
42 thru 51	Runway Longitude (10)	5.37	
52 thru 57	Runway Gradient (6)	5.212	
58 thru 59	Blank (Spacing) (2)		
60	Landing Threshold Elevation Type (1)	5.98	
61 thru 66	(LTP) Ellipsoid Height (6)	5.225	
67 thru 71	Landing Threshold Elevation (5)	5.68	
72 thru 75	Displaced Threshold Distance (4)	5.69	
76 thru 77	Blank Spacing (2)		
78 thru 80	Runway Width (3)	5.109	
81	TCH Value Indicator (1)	5.270	
82 thru 86	Blank (Spacing) (5)		
87 thru 90	Stopway (4)	5.79	
91 thru 95	Blank (Spacing) (5)		
96 thru 98	Threshold Crossing Height (3)	5.67	
99	Runway Accuracy Compliance Flag (1)	5.318	
100	Landing Threshold Elevation Accurary Compliance Flag (1)	5.319	
101	Reserved (Expansion) (1)		
102 thru 123	Runway Description (22)	5.59	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.10.2 Runway Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 92	Notes (69)	5.61	
93 thru 96	Runway Surface Type (4)	5.302	
97	Runway Surface Code (1)	5.249	
98 thru 101	Starter Extension (4)	5.312	
102 thru 106	TORA (5)	5.313	
107 thru 111	TODA (5)	5.314	
112 thru 116	ASDA (5)	5.315	
117 thru 121	LDA (5)	5.316	
122	Runway Usage Indicator (1)	5.317	
123	Reserved (Expansion) (1)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.10.3 Runway Simulation Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 51	Reserved (Spacing) (28)		
52 thru 56	Runway True Bearing (5)	5.94	
57	True Bearing Source (1)	5.95	
58 thru 65	Reserved (Spacing) (8)		
66	TDZE Elevation Type (1)	5.98	
67 thru 71	Touchdown Zone Elevation (5)	5.97	
72 thru 123	Reserved (Expansion) (52)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.11 Airport and Heliport Localizer and Glideslope Records (PI)

This file will contain a sequential listing of all localizer type facilities and glideslopes associated with those facilities. The glideslope portion of the record may contain blanks if no glideslope is associated with the facilities (Classification 0, A, or F, see Section 5.80). When a glideslope is installed, a glideslope angle will be provided. The latitude and longitude fields for the glideslope may be set to blanks when such information is not available to the data supplier for a particular glideslope installation due to insufficient government source.

4.1.11.1 Airport and Heliport Localizer and Glideslope Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Airport Identifier or Heliport (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 17	Localizer Identifier (4)	5.44	Y
18	ILS Category (1)	5.80	
19 thru 21	Blank (Spacing) (3)		
22	Continuation Record No. (1)	5.16	
23 thru 27	Localizer Frequency (5)	5.45	
28 thru 32	Runway or Helipad Identifier (5)	5.46 or 5.180	
33 thru 41	Localizer Latitude (9)	5.36	
42 thru 51	Localizer Longitude (10)	5.37	
52 thru 55	Localizer Bearing (4)	5.47	
56 thru 64	Glideslope Latitude (9)	5.36	
65 thru 74	Glideslope Longitude (10)	5.37	
75 thru 78	Localizer Position (4)	5.48	
79	Localizer Position Reference (1)	5.49	
80 thru 83	Glideslope Position (4)	5.50	
84 thru 87	Localizer Width (4)	5.51	
88 thru 90	Glideslope Angle (3)	5.52	
91 thru 95	Station Declination (5)	5.66	
96 thru 97	Blank (2)		
98 thru 102	Glideslope Elevation (5)	5.74	
103 thru 106	Supporting Facility ID (4)	5.33 Note 1	
107 thru 108	Supporting Facility ICAO Code (2)	5.14 Note 1	
109	Supporting Facility Section Code (1)	5.4 Note 1	
110	Supporting Facility Subsection Code (1)	5.5 Note 1	
111 thru 113	Glideslope Height at Landing Threshold (3)	5.67	
114 thru 123	Reserved (Expansion) (10)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: Terminal Navaids used as Supporting Facilities must be located at the same airport as the ILS.

4.1.11.2 Airport and Heliport Localizer and Glideslope Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 92	Notes (69)	5.61	
93 thru 123	Reserved (Expansion) (31)		
124 thru 128	File Record (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.11.3 Airport and Heliport Localizer and Glideslope Simulation Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Record		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 27	Blank (Spacing) (4)		
28 thru 32	Facility Characteristics (5)	5.93	
33 thru 51	Blank (Spacing) (19)		
52 thru 56	Localizer True Bearing (5)	5.94	
57	Localizer Bearing Source (1)	5.95	
58 thru 87	Reserved (Spacing) (30)		
88 thru 90	Glideslope Beam Width (3)	5.96	
91 thru 96	Approach Route Ident (6)	5.10	
97 thru 102	Approach Route Ident (6)	5.10	
103 thru 108	Approach Route Ident (6)	5.10	
109 thru 114	Approach Route Ident (6)	5.10	
115 thru 120	Approach Route Ident (6)	5.10	
121 thru 123	Blank (Spacing) (3)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.12 Company Route Records (R)

This file contains company tailored route information.

4.1.12.1 Company Route Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 11	From Airport/Fix (5)	5.75	Y
12	Blank (Spacing) (1)		
13 thru 14	ICAO Code (2)	5.14	Y
15	Section Code (1)	5.4	Y
16	Subsection Code (1)	5.5	Y
17 thru 21	To Airport/Fix (5)	5.75	Y
22	Blank (Spacing) (1)		
23 thru 24	ICAO Code (2)	5.14	Y
25	Section Code (1)	5.4	Y
26	Subsection Code (1)	5.5	Y
27 thru 36	Company Route ID (10)	5.76	Y
37 thru 39	Sequence No. (3)	5.12	Y
40 thru 42	VIA (3)	5.77	Y
43 thru 48	SID/STAR/App/Awy (6)	5.78	
49 thru 51	Area Code (3)	5.3	
52 thru 57	To Fix (6)	5.83	
58 thru 59	ICAO Code (2)	5.14	
60	Section Code (1)	5.4	
61	Subsection Code (1)	5.5	
62 thru 66	Runway Trans (5)	5.84	
67 thru 71	ENRT Trans (5)	5.85	
72	Reserved (1)		
73 thru 77	Cruise Altitude (5)	5.86	
78 thru 81	Terminal/Alternate Airport (4)	5.87	
82 thru 83	ICAO Code (2)	5.14	
84 thru 87	Alternate Distance (4)	5.88	
88 thru 90	Cost Index (3)	5.89	
91 thru 94	Enroute Alternate Airport (4)	5.148	
95	SID/STAR/App/Awy Route Type (1)	5.7	
96	S/S/A Route Type Qualifier 1 (1)	5.7	
97	S/S/A Route Type Qualifier 2 (1)	5.7	
98 thru 123	Reserved (Expansion) (26)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: This Company Route Record is defined for use with fixed wing aircraft and rotor wing aircraft operating from airports. Airports referenced will be in Section/SubSection PA, Runway in Section/SubSection PG, and Terminal Procedure referenced will be in Section/SubSections PD/PE/PF. For Helicopter Operations Company Routes, see Section 4.2.7.

4.1.13 Airport and Heliport Localizer Marker Records (PM)

The Airport and Heliport Localizer Marker File (PM) contains details of all markers and locators associated with all types of localizers. It does not contain airway markers; see Section 4.1.15.

4.1.13.1 Airport and Heliport Localizer Marker Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Airport or Heliport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 17	Localizer Identifier (4)	5.44	Y
18 thru 20	Marker Type (3)	5.99	Y
21	Blank (Spacing) (1)		
22	Continuation Record No. (1)	5.16	Y
23 thru 27	Locator Frequency (5)	5.34	
28 thru 32	Runway Helipad Identifier (5)	5.46 or 5.180	
33 thru 41	Marker Latitude (9)	5.36	
42 thru 51	Marker Longitude (10)	5.37	
52 thru 55	Minor Axis Bearing (4)	5.100	
56 thru 64	Locator Latitude (9)	5.36	
65 thru 74	Locator Longitude (10)	5.37	
75 thru 79	Locator Class (5)	5.35	
80 thru 84	Locator Facility Characteristics (5)	5.93	
85 thru 88	Locator Identifier (4)	5.33	
89 thru 90	Blank (Spacing) (2)		
91 thru 95	Magnetic Variation (5)	5.39	
96 thru 97	Blank (Spacing) (2)		
98 thru 102	Facility Elevation (5)	5.92	
103 thru 123	Reserved (Expansion) (21)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.13.2 Airport and Heliport Localizer Marker Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 123	Notes (100)	5.61	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.14 Airport Communications Records (PV)

4.1.14.1 Airport Communications Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Airport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 15	Blank (Spacing) (2)		
16 thru 19	Communication Class (4)	5.283	Y
20 thru 21	Sequence Number (2)	5.12	Y
22	Continuation Number (1)	5.16	Y
23 thru 25	Communication Types (3)	5.101	
26 thru 32	Transmit Frequency (7)	5.103	
33 thru 39	Receive Frequency (7)	5.103	
40	Frequency Units (1)	5.104	
41	Radar Units (1)	5.102	
42	H24 Indicator (1)	5.181	
43 thru 67	Call Signs (25)	5.105	
68	Multi-Sector Indicator (1)	5.286	
69 thru 74	Sectorization (6)	5.183	
75 thru 78	Sector Facility (4)	5.185	
79 thru 80	ICAO (2)	5.14	
81	Section Code (1)	5.4	
82	Subsection Code (1)	5.5	
83	Altitude Description Code (1)	5.29	
84 thru 86	Communication Altitude 1 (3)	5.184	
87 thru 89	Communication Altitude 2 (3)	5.184	
90	Distance Description Code (1)	5.187	
91 thru 92	Communication Distance (2)	5.188	
93 thru 101	Transmitter Latitude (9)	5.36	
102 thru 111	Transmitter Longitude (10)	5.37	
112 thru 114	Service Indicator (3)	5.106	
115	Modulation (1)	5.198	
116	Signal Emission (2)	5.199	
117	Time Code	5.131	
118	NOTAM	5.132	
119 thru 123	Blank (Spacing) (5)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.14.2 Airport Communications Primary Extension Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1) E—Primary Record Extension	5.91	Y
24 thru 27	Remote Facility (4)	5.200	
28 thru 29	ICAO (2)	5.14	
30	Section (1)	5.4	
31	Subsection (1)	5.5	
32 thru 36	Transmitter Site Mag Var (5)	5.39	
37 thru 41	Transmitter Site Elevation (5)	5.92	
42 thru 47	Additional Sectorization 1 (6)	5.183	
48	Additional Sectorization 1 Altitude Description (1)	5.29	
49 thru 51	Additional Sectorization 1 Altitude 1 (3)	5.184	
52 thru 54	Additional Sectorization 1 Altitude 2 (3)	5.184	
55 thru 60	Additional Sectorization 2 (6)	5.183	
61	Additional Sectorization 2 Altitude Description (1)	5.29	
62 thru 64	Additional Sectorization 2 Altitude 1 (3)	5.184	
65 thru 67	Additional Sectorization 2 Altitude 2 (3)	5.184	
68 thru 123	Blank (Spacing) (56)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.14.3 Airport Communications Sector Narrative Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1) N—Sector Narrative	5.91	Y
24thru 83	Sectorization Narrative (60)	5.186	
84 thru 123	Reserved (Spacing) (40)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.14.4 Airport Communications Formatted Time Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Field as on Primary Record		Y
22	Continuation Record Number (1)	5.16	Y
23	Application Type (1) T—Formatted Time Data	5.91	Y
24	Time Code (1)	5.131	
25	NOTAM (1)	5.132	
26	Time Indicator (1)	5.138	
27 thru 29	Time Zone (3)	5.178	
30 thru 49	Blank (Spacing) (20)		
50 thru 59	Time of Operation (10)	5.195	
60 thru 69	Time of Operation (10)	5.195	
70 thru 79	Time of Operation (10)	5.195	
80 thru 89	Time of Operation (10)	5.195	
90 thru 99	Time of Operation (10)	5.195	
100 thru 109	Time of Operation (10)	5.195	
110 thru 119	Time of Operation (10)	5.195	
120 thru 123	Blank (Spacing) (4)		
124 thru 128	File Record numbers (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.14.5 Airport Communications Narrative Time Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Field as on Primary Record		Y
22	Continuation Record Number (1)	5.16	Y
23	Application Type (1) U—Narrative Time Data	5.91	Y
24 thru 123	Time Narrative (100)	5.285	
124 thru 128	File Record Numbers (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.15 Airways Marker Records (EM)

The Airways Marker file contains details of all airways markers.

4.1.15.1 Airways Marker Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 13	Blank (Spacing) (7)		
14 thru 17	Marker Identifier (4)	5.110	Y
18 thru 19	Blank (Spacing) (2)		
20 thru 21	ICAO Code (2)	5.14	Y
22	Continuation Record No. (1)	5.16	Y
23 thru 26	Marker Code (4)	5.111	
27	Reserved (Expansion) (1)		
28	Marker Shape (1)	5.112	
29	Marker Power (1)	5.113	
30 thru 32	Blank (Spacing) (3)		
33 thru 41	Marker Latitude (9)	5.36	
42 thru 51	Marker Longitude (10)	5.37	
52 thru 55	Minor Axis (4)	5.100	
56 thru 74	Blank (Spacing) (19)		
75 thru 79	Magnetic Variation (5)	5.39	
80 thru 84	Facility Elevation (5)	5.92	
85 thru 87	Datum Code (3)	5.197	
88 thru 93	Blank (Spacing) (6)		
94 thru 123	Marker Name (30)	5.71	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.15.2 Airways Marker Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 123	Notes (100)	5.61	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.16 Cruising Tables Records (TC)

The Cruising Tables file contains details relating to available Cruising Levels for IFR flights.

4.1.16.1 Cruising Table Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Blank (Spacing) (3)		
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 8	Cruise Table Identifier (2)	5.134	Y
9	Sequence Number (1)	5.12	Y
10 thru 28	Blank (Spacing) (19)		
29 thru 32	Course From (4)	5.135	
33 thru 36	Course To (4)	5.135	
37	Mag/True (1)	5.165	
38 thru 39	Blank (Spacing) (2)		
40 thru 44	Cruise Level From (5)	5.136	
45 thru 49	Vertical Separation (5)	5.137	
50 thru 54	Cruise Level To (5)	5.136	
55 thru 59	Cruise Level From (5)	5.136	
60 thru 64	Vertical Separation (5)	5.137	
65 thru 69	Cruise Level To (5)	5.136	
70 thru 74	Cruise Level From (5)	5.136	
75 thru 79	Vertical Separation (5)	5.137	
80 thru 84	Cruise Level To (5)	5.136	
85 thru 89	Cruise Level From (5)	5.136	
90 thru 94	Vertical Separation (5)	5.137	
95 thru 99	Cruise Level To (5)	5.136	
100 thru 123	Reserved (Expansion) (24)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.17 FIR/UIR Records (UF)

The FIR/UIR file contains the lateral boundary description of the FIR/UIR in a sequence of records and the vertical boundary description of the FIR/UIR in the first of the sequence.

4.1.17.1 FIR/UIR Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 10	FIR/UIR Identifier (4)	5.116	Y
11 thru 14	FIR/UIR Address (4)	5.151	
15	FIR/UIR Indicator (1)	5.117	Y
16 thru 19	Sequence Number (4)	5.12	Y
20	Continuation Record No. (1)	5.16	Y
21 thru 24	Adjacent FIR Identifier (4)	5.116	
25 thru 28	Adjacent UIR Identifier (4)	5.116	
29	Reporting Units Speed (1)	5.122	
30	Reporting Units Altitude (1)	5.123	
31	Entry Report (1)	5.124	
32	Blank (Spacing) (1)		
33 thru 34	Boundary Via (2)	5.118	Y
35 thru 43	FIR/UIR Latitude (9)	5.36	
44 thru 53	FIR/UIR Longitude (10)	5.37	
54 thru 62	Arc Origin Latitude (9)	5.36	
63 thru 72	Arc Origin Longitude (10)	5.37	
73 thru 76	Arc Distance (4)	5.119	
77 thru 80	Arc Bearing (4)	5.120	
81 thru 85	FIR Upper Limit (5)	5.121	
86 thru 90	UIR Lower Limit (5)	5.121	
91 thru 95	UIR Upper Limit (5)	5.121	
96 thru 97	Cruise Table Ind (2)	5.134	
98	Reserved (Expansion) (1)		
99 thru 123	FIR/UIR Name (25)	5.125	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.17.2 FIR/UIR Continuation [ZM1]Records

Column	Field Name (Length)	Reference	Required
1 thru 19	Fields as on Primary Records		Y
20	Continuation Record No. (1)	5.16	Y
21	Application Type (1)	5.91	Y
22 thru 123	Notes (102)	5.61	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.18 Restrictive Airspace Records (UR)

The Restrictive Airspace Record File contains a sequential listing of vertical and lateral limits of restrictive areas.

4.1.18.1 Restrictive Airspace Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 8	ICAO Code (2)	5.14	Y
9	Restrictive Type (1)	5.128	Y
10 thru 19	Restrictive Airspace Designation (10)	5.129	Y
20	Multiple Code (1)	5.130	Y
21 thru 24	Sequence Number (4)	5.12	Y
25	Continuation Record No. (1)	5.16	Y
26	Level (1)	5.19	
27	Time Code (1)	5.131	
28	NOTAM (1)	5.132	
29 thru 30	Blank (Spacing) (2)		
31 thru 32	Boundary Via (2)	5.118	
33 thru 41	Latitude (9)	5.36	
42 thru 51	Longitude (10)	5.37	
52 thru 60	Arc Origin Latitude (9)	5.36	
61 thru 70	Arc Origin Longitude (10)	5.37	
71 thru 74	Arc Distance (4)	5.119	
75 thru 78	Arc Bearing (4)	5.120	
79 thru 81	Blank (Spacing) (3)		
82 thru 86	Lower Limit (5)	5.121	
87	Unit Indicator (1)	5.133	
88 thru 92	Upper Limit (5)	5.121	
93	Unit Indicator (1)	5.133	
94 thru 123	Restrictive Airspace Name (30)	5.126	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.18.2 Restrictive Airspace Formatted Time Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 24	Fields as on Primary Records		Y
25	Continuation Record Number (1)	5.16	Y
26	Application Type (1)	5.91	Y
27	Time Code (1)	5.131	
28	NOTAM (1)	5.132	
29	Time Indicator (1)	5.138	
30 thru 39	Time of Operations (10)	5.195	
40 thru 49	Time of Operations (10)	5.195	
50 thru 59	Time of Operations (10)	5.195	
60 thru 69	Time of Operations (10)	5.195	
70 thru 79	Time of Operations (10)	5.195	
80 thru 89	Time of Operations (10)	5.195	
90 thru 99	Time of Operations (10)	5.195	
100 thru 102	Time Zone (3)	5.178	
103 thru 123	Blank (21)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.18.3 Restrictive Airspace Narrative Time Continuation Record

Column	Field Name (Length)	Reference	Required
1 thru 24	Fields as on Primary Records		Y
25	Continuation Record Number (1)	5.16	Y
26	Application Type (1) U—Narrative Time Data	5.91	Y
27 thru 123	Narrative Time (97)	5.285	
124 thru 128	File Record Number (5)	5.31	Y
19 thru 132	Cycle Date (4)	5.32	Y

4.1.18.4 Restrictive Airspace Controlling Agency Continuation Record

Column	Field Name (Length)	Reference	Required
1 thru 24	Fields as on Primary Records		Y
25	Continuation Record Number (1)	5.16	Y
26	Application Type (1) C – Controlling Agency	5.91	Y
27-99	Blank (73)		
100 thru 123	Controlling Agency (24)	5.140	
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.19 Grid MORA Records (AS)

The Grid MORA (Minimum Off Route Altitude) file contains a table of Minimum Off Route Altitudes.

4.1.19.1 Grid MORA Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Blank (Spacing) (3)		
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 13	Blank (Spacing) (7)		
14 thru 16	Starting Latitude (3)	5.141	Y
17 thru 20	Starting Longitude (4)	5.142	Y
21 thru 30	Blank (Spacing) (10)		
31 thru 33	MORA (3)	5.143	
34 thru 36	MORA (3)	5.143	
37 thru 39	MORA (3)	5.143	
40 thru 42	MORA (3)	5.143	
43 thru 45	MORA (3)	5.143	
46 thru 48	MORA (3)	5.143	
49 thru 51	MORA (3)	5.143	
52 thru 54	MORA (3)	5.143	
55 thru 57	MORA (3)	5.143	
58 thru 60	MORA (3)	5.143	
61 thru 63	MORA (3)	5.143	
64 thru 66	MORA (3)	5.143	
67 thru 69	MORA (3)	5.143	
70 thru 72	MORA (3)	5.143	
73 thru 75	MORA (3)	5.143	
76 thru 78	MORA (3)	5.143	
79 thru 81	MORA (3)	5.143	
82 thru 84	MORA (3)	5.143	
85 thru 87	MORA (3)	5.143	
88 thru 90	MORA (3)	5.143	
91 thru 93	MORA (3)	5.143	
94 thru 96	MORA (3)	5.143	
97 thru 99	MORA (3)	5.143	
100 thru 102	MORA (3)	5.143	
103 thru 105	MORA (3)	5.143	
106 thru 108	MORA (3)	5.143	
109 thru 111	MORA (3)	5.143	
112 thru 114	MORA (3)	5.143	
115 thru 117	MORA (3)	5.143	
118 thru 120	MORA (3)	5.143	
121 thru 123	Reserved (Expansion) (3)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.20 Airport MSA (Minimum Sector Altitude) Records (PS)

The Minimum Sector Altitude (MSA) file contains details relating to available sector altitudes.

4.1.20.1 Airport MSA Primary Records

Column	Field Name (Length)	Reference	Required

1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Airport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 18	MSA Center (5)	5.144	Y
19 thru 20	ICAO Code (2)	5.14	Y
21	Section Code (1)	5.4	Y
22	Subsection Code (1)	5.5	Y
23	Multiple Code (1)	5.130	Y
24 thru 38	Reserved (Expansion) (15)		
39	Continuation Record No. (1)	5.16	Y
40 thru 42	Reserved (Spacing) (3)		
43 thru 48	Sector Bearing (6)	5.146	
49 thru 51	Sector Altitude (3)	5.147	
52 thru 53	Sector Radius (2)	5.145	
54 thru 59	Sector Bearing (6)	5.146	
60 thru 62	Sector Altitude (3)	5.147	
63 thru 64	Sector Radius (2)	5.145	
65 thru 70	Sector Bearing (6)	5.146	
71 thru 73	Sector Altitude (3)	5.147	
74 thru 75	Sector Radius (2)	5.145	
76 thru 81	Sector Bearing (6)	5.146	
82 thru 84	Sector Altitude (3)	5.147	
85 thru 86	Sector Radius (2)	5.145	
87 thru 92	Sector Bearing (6)	5.146	
93 thru 95	Sector Altitude (3)	5.147	
96 thru 97	Sector Radius (2)	5.145	
98 thru103	Sector Bearing (6)	5.146	
104 thru 106	Sector Altitude (3)	5.147	
107 thru 108	Sector Radius (2)	5.145	
109 thru 114	Sector Bearing (6)	5.146	
115 thru 117	Sector Altitude (3)	5.147	
118 thru 119	Sector Radius (2)	5.145	
120	Magnetic/True Indicator (1)	5.165	
121 thru 123	Reserved (Expansion) (3)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.20.2 Airport MSA Primary Record Extension

Column	Field Name (Length)	Reference	Required
1 thru 38	Field as on Primary Records		Y
39	Continuation Record No. (1)	5.16	Y
40	Application Type (1)	5.91	Y
41 thru 42	Reserved (Spacing) (2)		
43 thru 48	Sector Bearing (6)	5.146	
49 thru 51	Sector Altitude (3)	5.147	
52 thru 53	Sector Radius (2)	5.145	
54 thru 59	Sector Bearing (6)	5.146	
60 thru 62	Sector Altitude (3)	5.147	
63 thru 64	Sector Radius (2)	5.145	
65 thru 70	Sector Bearing (6)	5.146	
71 thru 73	Sector Altitude (3)	5.147	
74 thru 75	Sector Radius (2)	5.145	
76 thru 81	Sector Bearing (6)	5.146	
82 thru 84	Sector Altitude (3)	5.147	
85 thru 86	Sector Radius (2)	5.145	
87 thru 92	Sector Bearing (6)	5.146	
93 thru 95	Sector Altitude (3)	5.147	
96 thru 97	Sector Radius (2)	5.145	
98 thru 103	Sector Bearing (6)	5.146	
104 thru 106	Sector Altitude (3)	5.147	
107 thru 108	Sector Radius (2)	5.145	
109 thru 114	Sector Bearing (6)	5.146	
115 thru 117	Sector Altitude (3)	5.147	
118 thru 119	Sector Radius (2)	5.145	
120 thru 123	Field as on Primary Records		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.20.3 Airport MSA Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 38	Field as on Primary Records		Y
39	Continuation Record No. (1)	5.16	Y
40	Application Type (1)	5.91	Y
41 thru 109	Notes (69)	5.61	
110 thru 123	Reserved (Expansion) (14)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.21 Enroute Airways Restriction Records (EU)

The Enroute Airway Restriction file will contain altitude and time restrictions for an airway, airway segment or sequence of airway segments. The Enroute Airway Restriction file may contain four different types of primary records, dependent on the type of restriction. A Restriction Code will identify the type of restriction contained in the record. Continuation Records may be used if a single record does not provide sufficient space for coding a single, complete restriction.

4.1.21.1 Enroute Airways Restriction Altitude Exclusion Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 11	Route Identifier (5)	5.8	Y
12	Reserved (1)	Note 1	
13 thru 15	Restriction Identifier (3)	5.154	Y
16 thru 17	Restriction Type (2)	5.201	Y
18	Continuation Record No. (1)	5.16	Y
19 thru 23	Start Fix Identifier (5)	5.13	
24 thru 25	Start Fix ICAO Code (2)	5.14	
26	Start Fix Section Code (1)	5.4	
27	Start Fix Subsection Code (1)	5.5	
28 thru 32	End Fix Identifier (5)	5.13	
33 thru 34	End Fix ICAO Code (2)	5.14	
35	End Fix Section Code (1)	5.4	
36	End Fix Subsection Code (1)	5.5	
37	Blank (Spacing) (1)		
38 thru 44	Start Date (7)	5.157	
45 thru 51	End Date (7)	5.157	
52	Time Code (1)	5.131	
53 thru 93	Blank Spacing (41)	5.138	
54 thru 63	Time of Operation (10)	5.195	
64 thru 73	Time of Operation (10)	5.195	
74 thru 83	Time of Operation (10)	5.195	
84 thru 93	Time of Operation (10)	5.195	
94	Exclusion Indicator (1)	5.202	
95	Units of Altitude (1)	5.160	
96 thru 98	Restriction Altitude (3)	5.161	
99	Block Indicator (1)	5.203	
100 thru 102	Restriction Altitude (3)	5.161	
103	Block Indicator (1)	5.203	
104 thru 106	Restriction Altitude (3)	5.161	
107	Block Indicator (1)	5.203	
108 thru 110	Restriction Altitude (3)	5.161	
111	Block Indicator (1)	5.203	
112 thru 114	Restriction Altitude (3)	5.161	
115	Block Indicator (1)	5.203	
116 thru 118	Restriction Altitude (3)	5.161	
119	Block Indicator (1)	5.203	
120 thru 122	Restriction Altitude (3)	5.161	
123	Block Indicator (1)	5.203	
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: The standard length for the Route Identifier is five characters. Some users envisage the need for a six-character field. This reserved column will permit this usage.

4.1.21A.1   Enroute Airways Restriction Note Restriction Primary Records

Column	Field Name (Length)	Reference	Required

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 11	Route Identifier (5)	5.8	Y
12	Reserved (1)	Note 1	
13 thru 15	Restriction Identifier (3)	5.154	Y
16 thru 17	Restriction Type (2)	5.201	Y
18	Continuation Record No. (1)	5.16	Y
19 thru 23	Start Fix Identifier (5)	5.13	
24 thru 25	Start Fix ICAO Code (2)	5.14	
26	Start Fix Section Code (1)	5.4	
27	Start Fix Subsection Code (1)	5.5	
28 thru 32	End Fix Identifier (5)	5.13	
33 thru 34	End Fix ICAO Code (2)	5.14	
35	End Fix Section Code (1)	5.4	
36	End Fix Subsection Code (1)	5.5	
37	Blank (Spacing) (1)		
38 thru 44	Start Date (7)	5.157	
45 thru 51	End Date (7)	5.157	
52 thru 120	Restriction Notes (69)	5.163	
121 thru 123	Blank (Spacing) (3)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.21	Y

Note 1: The standard length for the Route Identifier is five characters. Some users envisage the need for a six-character field. This reserved column will permit this usage.

4.1.21A.2   Enroute Airways Restriction Note Restriction Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 17	Fields as on Primary Records		Y
18	Continuation Record No. (1)	5.16	Y
19	Application Type (1)	5.91	Y
20 thru 51	Reserved (Expansion) (32)		
52 thru 120	Restriction Notes (69)	5.163	
121 thru 123	Blank (Spacing) (3)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.21B.1 Enroute Airways Restriction Seasonal Closure Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 11	Route Identifier (5)	5.8	Y
12	Reserved (1)	Note 1	
13 thru 15	Restriction Identifier (3)	5.154	Y
16 thru 17	Restriction Type (2)	5.201	Y
18	Continuation Record No. (1)	5.16	Y
19 thru 23	Start Fix Identifier (5)	5.13	
24 thru 25	Start Fix ICAO Code (2)	5.14	
26	Start Fix Section Code (1)	5.4	
27	Start Fix Subsection Code (1)	5.5	
28 thru 32	End Fix Identifier (5)	5.13	
33 thru 34	End Fix ICAO Code (2)	5.14	
35	End Fix Section Code (1)	5.4	
36	End Fix Subsection Code (1)	5.5	
37	Blank (Spacing) (1)		
38 thru 44	Start Date (7)	5.157	
45 thru 51	End Date (7)	5.157	
52	Time Code (1)	5.131	
53 thru 93	Blank Spacing (41)		
94 thru 95	Cruise Table Ident (2)	5.134	
96 thru 123	Blank (Spacing) (28)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: The standard length for the Route Identifier is five characters. Some users envisage the need for a six-character field. This reserved column will permit this usage.

4.1.21B.2 Enroute Airways Restriction Seasonal Closure Formatted Time Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 17	Fields as on Primary Records		Y
18	Continuation Record Number (1)	5.16	Y
19	Application Type (1) T – Formatted Time Data	5.91	Y
27	Time Code (1)	5.131	
28	Time Indicator (1)	5.138	
29	Blank (Spacing) (1)		
30 thru 39	Time of Operations (10)	5.195	
40 thru 49	Time of Operations (10)	5.195	
50 thru 59	Time of Operations (10)	5.195	
60 thru 69	Time of Operations (10)	5.195	
70 thru 79	Time of Operations (10)	5.195	
80 thru 89	Time of Operations (10)	5.195	
90 thru 99	Time of Operations (10)	5.195	
100 thru 102	Time Zone (3)	5.178	
103 thru 123	Blank (21)		
124 thru 128	File Record Number (5)	5.31	Y

129 thru 132	Cycle Date (4)	5.32	Y

4.1.21C.1 Enroute Airways Restriction Cruising Table Replacement Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 11	Route Identifier (5)	5.8	Y
12	Reserved (1)	Note 1	
13 thru 15	Restriction Identifier (3)	5.154	Y
16 thru 17	Restriction Type (2)	5.201	Y
18	Continuation Record No. (1)	5.16	Y
19 thru 23	Start Fix Identifier (5)	5.13	
24 thru 25	Start Fix ICAO Code (2)	5.14	
26	Start Fix Section Code (1)	5.4	
27	Start Fix Subsection Code (1)	5.5	
28 thru 32	End Fix Identifier (5)	5.13	
33 thru 34	End Fix ICAO Code (2)	5.14	
35	End Fix Section Code (1)	5.4	
36	End Fix Subsection Code (1)	5.5	
37	Blank (Spacing) (1)		
38 thru 44	Start Date (7)	5.157	
45 thru 51	End Date (7)	5.157	
52	Time Code (1)	5.131	
53 thru 93	Blank Spacing (41)		
94 thru 95	Cruise Table Ident (2)	5.134	
96 thru 123	Blank (Spacing) (28)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: The standard length for the Route Identifier is five characters. Some users envisage the need for a six-character field. This reserved column will permit this usage.

4.1.21C.2 Enroute Airways Restriction Cruising Table Replacement Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 17	Fields as on Primary Records		Y
18	Continuation Record No. (1)	5.16	Y
19	Application Type (1) E—Primary Record Extension	5.91	Y
20 thru 95	Reserved (Expansion) (74)		
94 thru 95	Cruise Table Ident (2)	5.134	
96 thru 123	Blank (Spacing) (28)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.21C.3   Enroute Airways Restriction Cruising Table Replacement Formatted Time Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 17	Fields as on Primary Records		Y
18	Continuation Record Number (1)	5.16	Y
19	Application Type (1) T--Formatted Time Data	5.91	Y
27	Time Code (1)	5.131	
28	Time Indicator (1)	5.138	
29	Blank (Spacing) (1)		
30 thru 39	Time of Operations (10)	5.195	
40 thru 49	Time of Operations (10)	5.195	
50 thru 59	Time of Operations (10)	5.195	
60 thru 69	Time of Operations (10)	5.195	
70 thru 79	Time of Operations (10)	5.195	
80 thru 89	Time of Operations (10)	5.195	
90 thru 99	Time of Operations (10)	5.195	
100 thru 102	Time Zone (3)	5.178	
103 thru 123	Blank (21)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.21.2 Enroute Airways Restriction Altitude Exclusion Primary Extension Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 17	Fields as on Primary Records		Y
18	Continuation Record No. (1)	5.16	Y
19	Application Type (1)	5.91	Y
20 thru 93	Reserved (Expansion) (74)		
94	Exclusion Indicator (1)	5.202	
95	Units of Altitude (1)	5.160	
96 thru 98	Restriction Altitude (3)	5.161	
99	Block Indicator (1)	5.203	
100 thru 102	Restriction Altitude (3)	5.161	
103	Block Indicator (1)	5.203	
104 thru 106	Restriction Altitude (3)	5.161	
107	Block Indicator (1)	5.203	
108 thru 110	Restriction Altitude (3)	5.161	
111	Block Indicator (1)	5.203	

112 thru 114	Restriction Altitude (3)	5.161	
115	Block Indicator (1)	5.203	
116 thru 118	Restriction Altitude (3)	5.161	
119	Block Indicator (1)	5.203	
120 thru 122	Restriction Altitude (3)	5.161	
123	Block Indicator (1)	5.203	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.21.3 Enroute Airways Restriction Altitude Exclusion Formatted Time Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 17	Fields as on Primary Records		Y
18	Continuation Record Number (1)	5.16	Y
19	Application Type (1) T – Formatted Time Data	5.91	Y
27	Time Code (1)	5.131	
28	Time Indicator (1)	5.138	
29	Blank (Spacing) (1)		
30 thru 39	Time of Operations (10)	5.195	
40 thru 49	Time of Operations (10)	5.195	
50 thru 59	Time of Operations (10)	5.195	
60 thru 69	Time of Operations (10)	5.195	
70 thru 79	Time of Operations (10)	5.195	
80 thru 89	Time of Operations (10)	5.195	
90 thru 99	Time of Operations (10)	5.195	
100 thru 102	Time Zone (3)	5.178	
103 thru 123	Blank (21)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.22 Airport and Heliport MLS (Azimuth, Elevation and Back Azimuth) Records (PL)

This file will contain a listing of all Microwave Landing Systems, including the Azimuth station, the Elevation station and the Back-Azimuth station if installed.

4.1.22.1 Airport and Heliport MLS Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing (1)		
7 thru 10	Airport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 17	MLS Identifier (4)	5.44	Y
18	MLS Category (1)	5.80	
19 thru 21	Blank (Spacing) (3)		
22	Continuation Record No. (1)	5.16	Y
23 thru 25	Channel (3)	5.166	
26 thru 27	Blank (Spacing) (2)		
28 thru 32	Runway Identifier (5)	5.46	
33 thru 41	Azimuth Latitude (9)	5.36	
42 thru 51	Azimuth Longitude (10)	5.37	
52 thru 55	Azimuth Bearing (4)	5.167	
56 thru 64	Elevation Latitude (9)	5.36	
65 thru 74	Elevation Longitude (10)	5.37	
75 thru 78	Azimuth Position (4)	5.48	
79	Azimuth Position Reference (1)	5.49	
80 thru 83	Elevation Position (4)	5.50	
84 thru 86	Azimuth Proportional Angle Right (3)	5.168	
87 thru 89	Azimuth Proportional Angle Left (3)	5.168	
90 thru 92	Azimuth Coverage Right (3)	5.172	
93 thru 95	Azimuth Coverage Left (3)	5.172	
96 thru 98	Elevation Angle Span (3)	5.169	
99 thru 103	Magnetic Variation (5)	5.39	
104 thru 108	EL Elevation (5)	5.74	
109 thru 112	Nominal Elevation Angle (4)	5.173	
113 thru 115	Minimum Glide Path Angle (3)	5.52	
116 thru 119	Supporting Facility Identifier (4)	5.33 Note 1	
120 thru 121	Supporting Facility ICAO Code (2)	5.14 Note 1	
122	Supporting Facility Section Code (1)	5.4 Note 1	
123	Supporting Facility Subsection Code (1)	5.5 Note 1	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: Terminal Navaids used as Supporting Facilities must be located at the same airport as the MLS.

4.1.22.2 Airport and Heliport MLS Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Field as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 27	Blank (Spacing) (4)		
28 thru 32	Facility Characteristics (5)	5.93	
33 thru 41	Back Azimuth Latitude (9)	5.36	
42 thru 51	Back Azimuth Longitude (10)	5.37	
52 thru 55	Back Azimuth Bearing (4)	5.167	
56 thru 64	MLS Datum Point Latitude (9)	5.36	
65 thru 74	MLS Datum Point Longitude (10)	5.37	
75 thru 78	Back Azimuth Position (4)	5.48	
79	Back Azimuth Position Reference (1)	5.49	
80 thru 83	Blank (Spacing) (4)		
84 thru 86	Back Azimuth Proportional Sector Right (3)	5.168	
87 thru 89	Back Azimuth Proportional Sector Left (3)	5.168	
90 thru 92	Back Azimuth Coverage Right (3)	5.172	
93 thru 95	Back Azimuth Coverage Left (3)	5.172	
96 thru 100	Back Azimuth True Bearing (5)	5.94	
101	Back Azimuth Bearing Source (1)	5.95	
102 thru 106	Azimuth True Bearing (5)	5.94	
107	Azimuth Bearing Source (1)	5.95	
108 thru 110	Glide Path Height at Landing Threshold (3)	5.67	
111 thru 123	Reserved (Expansion) (13)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.23 Enroute Communications Records (EV)

4.1.23.1 Enroute Communications Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 10	FIR/RDO Ident (4)	5.190	Y
11 thru 14	FIR/UIR Address (4)	5.151	Y
15	Indicator (1)	5.117	Y
16 thru 19	Communication Class (4)	5.283	Y
20 thru 21	Sequence Number (2)	5.12	Y
22	Continuation Record No. (1)	5.16	Y
23 thru 25	Communications Type (3)	5.101	
26 thru 32	Transmit Frequency (7)	5.103	
33 thru 39	Receive Frequency (7)	5.103	
40	Frequency Units (1)	5.104	
41	Radar Service (1)	5.102	
42	H24 Indicator (1)	5.181	
43 thru 67	Call Sign (25)	5.105	
68 thru 92	Position Narrative (25)	5.189	
93 thru 101	Latitude (9)	5.36	
102 thru 111	Longitude (10)	5.37	
112 thru 114	Service Indicator (3)	5.106	
115	Modulation (1)	5.198	
116	Signal Emission (1)	5.199	
117	Altitude Descript. (1)	5.29	
118 thru 120	Communication Altitude 1 (3)	5.184	
121 thru 123	Communication Altitude 2 (3)	5.184	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.23.2 Enroute Communications Primary Extension Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1) E—Primary Record Extension	5.91	Y
24 thru 27	Remote Facility (4)	5.200	
28 thru 29	ICAO (2)	5.14	
30	Section (1)	5.4	
31	Subsection (1)	5.5	
32 thru 36	Transmitter Site Mag Var (5)	5.39	
37 thru 41	Transmitter Site Elevation (5)	5.92	
42 thru 66	Assigned Sector Name (25)	5.284	
67	Time Code (1)	5.131	
68	NOTAM (1)	5.132	
69	Level (1)	5.19	
70 thru 123	Blank (Spacing) (54)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.23.3 Enroute Communications Formatted Time Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1) T—Formatted Time Data	5.91	Y
24	Time Code (1)	5.131	
25	NOTAM (1)	5.132	
26	Time Indicator (1)	5.138	
27 thru 29	Time Zone	5.178	
30 thru 49	Blank (Spacing) (20)		
50 thru 59	Time of Operations (10)	5.195	
60 thru 69	Time of Operations (10)	5.195	
70 thru 79	Time of Operation (10)	5.195	
80 thru 89	Time of Operation (10)	5.195	
90 thru 99	Time of Operation (10)	5.195	
100 thru 109	Time of Operation (10)	5.195	
110 thru 119	Time of Operation (10)	5.195	
120 thru 123	Reserved (Expansion) (4)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.23.4 Enroute Communications Narrative Time Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Record		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1) U—Narrative Time Data	5.91	Y
24 thru 123	Time Narrative (100)	5.285	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.24 Preferred Routes Records (ET)

The Preferred Routes file contains details defining the Preferred Routes, North America Routes for North Atlantic Traffic, the Traffic Orientation System, and the similar predefined routings that do not meet the requirements of the Enroute Airway Record.

4.1.24.1 Preferred Route Primary Records

Columns	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 13	Blank (Spacing) (7)		
14 thru 23	Route Identifier (10)	5.8	Y
24 thru 25	Preferred Route Use Ind (2)	5.220	
26 thru 29	Sequence Number (4)	5.12	Y
30 thru 38	Blank (Spacing) (9)		
39	Continuation Record No. (1)	5.16	Y
40 thru 44	To Fix Identifier (5)	5.83	
45 thru 46	ICAO Code (2)	5.14	
47	Section Code (1)	5.4	
48	Subsection Code (1)	5.5	
49 thru 51	VIA Code (3)	5.77	
52 thru 57	SID/STAR/AWY Ident (6) Note 1	5.78	
58 thru 60	AREA Code (3)	5.3	
61	Level (1)	5.19	
62	Route Type (1)	5.7	
63 thru 67	Initial Airport/Fix (5)	5.194	
68 thru 69	ICAO Code (2)	5.14	
70	Section Code (1)	5.4	
71	Subsection Code (1)	5.5	
72 thru 76	Terminus Airport/Fix (5)	5.194	
77 thru 78	ICAO Code (2)	5.14	
79	Section Code (1)	5.4	
80	Subsection Code (1)	5.5	
81 thru 85	Minimum Altitude (5)	5.30	
86 thru 90	Maximum Altitude (5)	5.127	
91	Time Code (1)	5.131	
92 thru 93	Aircraft Use Group (2)	5.221	
94	Direction Restriction (1)	5.115	
95	Altitude Description (1)	5.29	
96 thru 100	Altitude One (5)	5.30	
101 thru 105	Altitude Two (5)	5.30	
106	SID/STAR/App/Awy Route Type (1)	5.7	
107	S/S/A Route Type Qualifier 1 (1)	5.7	
108	S/S/A Route Type Qualifier 2 (1)	5.7	
109 thru 123	Reserved (Expansion) (15)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: The Standard Enroute Airway Identifier is five characters. Some users envision the need for a sixth character. This field length will permit such coding; see Section 5.8.

4.1.24.2 Preferred Route Formatted Time Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 38	Fields as on Primary Records		Y
39	Continuation Record No. (1)	5.16	Y
40	Application Type (1) T—Formatted Time Data	5.91	Y
41	Time Code (1)	5.131	
42	Time Indicator (1)	5.138	
43 thru 52	Time of Operation (10)	5.195	
53 thru 62	Time of Operation (10)	5.195	
63 thru 72	Time of Operation (10)	5.195	
73 thru 82	Time of Operation (10)	5.195	
83 thru 92	Time of Operation (10)	5.195	
93 thru 102	Time of Operation (10)	5.195	
103 thru 112	Time of Operation (10)	5.195	
113 thru 115	Time Zone (3)	5.178	
116 thru 123	Reserved (Expansion) (8)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.24.3 Preferred Route Notes Continuation Record (ET)

Columns	Field Name (Length)	Reference	Required
1 thru 38	Fields as on Primary Records		Y
39	Continuation Record No. (1)	5.16	Y
40	Application Type (1) A—Notes	5.91	Y
41 thru 109	Notes (69)	5.61	
110 thru 123	Reserved (Expansion) (14)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note: Section 5.221 describes the use of this record for Aircraft Use Groups.

4.1.24.4 Prefered Route Narrative Time Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 38	Fields as on Primary Records		Y
39	Continuation Record Number (1)	5.16	Y
40	Application Type (1) U – Narrative Time Data	5.91	Y
41 thru 123	Time Narrative (83)	5.285	
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.25 Controlled Airspace Records (UC)

The Controlled Airspace Record file contains a sequential listing of vertical and lateral limits of all types and classifications of Controlled Airspace. It includes Controlled Airspace associated with Airports and Heliports.

4.1.25.1 Controlled Airspace Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 8	ICAO Code (2)	5.14	Y
9	Airspace Type (1)	5.213	Y
10 thru 14	Airspace Center (5)	5.214	Y
15	Section Code (1)	5.4	Y
16	Subsection Code (1)	5.5	Y
17	Airspace Classification (1)	5.215	Y
18 thru 19	Reserved (Spacing) (2)		
20	Multiple Code (1)	5.130	Y
21 thru 24	Sequence Number (4)	5.12	Y
25	Continuation Record Number (1)	5.16	Y
26	Level (1)	5.19	
27	Time Code (1)	5.131	
28	NOTAM (1)	5.132	
29 thru 30	Blank (Spacing) (2)		
31 thru 32	Boundary Via (2)	5.118	Y
33 thru 41	Latitude (9)	5.36	
42 thru 51	Longitude (10)	5.37	
52 thru 60	Arc Origin Latitude (9)	5.36	
61 thru 70	Arc Origin Longitude (10)	5.37	
71 thru 74	Arc Distance (4)	5.119	
75 thru 78	Arc Bearing (4)	5.120	
79 thru 81	RNP (3)	5.211	
82 thru 86	Lower Limit (5)	5.121	
87	Unit Indicator (1)	5.133	
88 thru 92	Upper Limit (5)	5.121	
93	Unit Indicator (1)	5.133	
94 thru 123	Controlled Airspace Name (30)	5.216	
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.25.2 Controlled Airspace Formatted Time Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 24	Fields as on Primary Records		Y
25	Continuation Record Number (1)	5.16	Y
26	Application Type (1) T—Formatted Time Data	5.91	Y
27	Time Code (1)	5.131	
28	NOTAM (1)	5.132	
29	Time Indicator (1)	5.138	
30 thru 39	Time of Operations (10)	5.195	
40 thru 49	Time of Operations (10)	5.195	
50 thru 59	Time of Operations (10)	5.195	
60 thru 69	Time of Operations (10)	5.195	
70 thru 79	Time of Operations (10)	5.195	
80 thru 89	Time of Operations (10)	5.195	
90 thru 99	Time of Operations (10)	5.195	
100 thru 102	Time Zone (3)	5.178	
103 thru 123	Blank (21)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.25.3 Controlled Airspace Primary Extension Record

When a government source provides a speed restriction(s) for an airspace, a single Primary Extension Continuation Record will be provided, associated to the first sequence of the Controlled Airspace record.

Column	Field Name (Length)	Reference	Required
1 thru 24	Fields as on Primary Records		Y
25	Continuation Record Number (1)	5.16	Y
26	Application Type (1) E—Primary Record Extension	5.91	Y
27 thru 29	Speed Limit (3)	5.72	
30 thru 34	Speed Limit Altitude (5)	5.73	
35	Speed Limit Aircraft Category/Type (1)	5.301	
36 thru 38	Speed Limit 2 (3)	5.72	
39 thru 43	Speed Limit Altitude 2 (5)	5.73	
44	Speed Limit Aircraft Category/Type 2 (1)	5.301	
45 thru 123	Blank (79)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.25.4 Controlled Airspace Narrative Time Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 24	Fields as on Primary Records		Y
25	Continuation Record Number (1)	5.16	Y
26	Application Type (1) U – Narrative Time Data	5.91	Y
27-123	Time Narrative (97)	5.285	
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.25.5 Controlled Airspace Controlling Agency Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 24	Fields as on Primary Records		Y
25	Continuation Record Number (1)	5.16	Y
26	Application Type (1) C – Controlling Agency	5.91	Y
27-99	Blank (73)		
100 thru 123	Controlling Agency (24)	5.140	
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.26 Geographical Reference Table Records (TG)

The Geographical Reference Table file contains information that permits the cross referencing of otherwise undefined geographical entities and Route Identifiers in the Preferred Route file. The contents are not standardized and may vary from data supplier to data supplier. The contents of such a file can only be used in conjunction with the Preferred Route file of the same database in which the file is presented.

4.1.26.1 Geographical Reference Table Primary Records (TG)

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 8	Geographical Ref Table ID (2)	5.218	Y
9	Sequence Number (1)	5.12	Y
10 thru 38	Geographical Entity (29)	5.219	Y
39	Continuation Record No (1)	5.16	Y
40	Reserved (1)		
41 thru 50	Preferred Route Ident (10)	5.8	
51 thru 52	Preferred Route Use Indicator (2)	5.220	
53 thru 62	Preferred Route Ident (10)	5.8	
63 thru 64	Preferred Route Use Indicator (2)	5.220	
65 thru 74	Preferred Route Ident (10)	5.8	
75 thru 76	Preferred Route Use Indicator (2)	5.220	
77 thru 86	Preferred Route Ident (10)	5.8	
87 thru 88	Preferred Route Use Indicator (2)	5.220	
89 thru 98	Preferred Route Ident (10)	5.8	
99 thru 100	Preferred Route Use Indicator (2)	5.220	
101 thru 110	Preferred Route Ident (10)	5.8	
111 thru 112	Preferred Route Use Indicator (2)	5.220	
113 thru 123	Blank (Spacing) (11)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.26.2 Geographical Reference Table Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 38	Fields as on Primary Records		Y
39	Continuation Record No. (1)	5.16	Y
40	Application Type (1)	5.91	Y
41 thru 123	Notes (83)	5.61	
124 thru 128	File Record No. (5)	5.31	
129 thru 132	Cycle Date (4)	5.32	Y

4.1.27 Flight Planning Arrival/Departure Data Records (PR)

The Flight Planning Arrival/Departure Data Record is used to provide the sub-set of data defining SIDs (PD), STARs (PE), and Approach Procedures (PF) from Section 4.1.9 required for the computer generation of Flight Plans which include Terminal Procedures. The file contains a sequential listing of published Arrival Procedures, Approach Procedures and Departure Procedures, the available Enroute and Runway Transitions for those procedures, the Transition waypoints, the appropriate along track distance fields, and the intermediate fixes along those routes.

4.1.27.1 Flight Planning Arrival/Departure Data Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Airport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 19	SID/STAR/Approach Identifier (6)	5.9, 5.10	
20	Procedure Type (1)	5.230	
21 thru 25	Runway Transition Identifier (5)	5.11	
26 thru 30	Runway Transition Fix (5)	5.13	
31 thru 32	ICAO Code (2)	5.14	
33	Section Code (1)	5.4	
34	Subsection Code (1)	5.5	
35 thru 37	Runway Transition Along Track Distance (3)	5.231	
38 thru 42	Common Segment Transition Fix (5)	5.13	
43 thru 44	ICAO Code (2)	5.14	
45	Section Code (1)	5.4	
46	Subsection Code (1)	5.5	
47 thru 49	Common Segment Along Track Distance (3)	5.231	
50 thru 54	Enroute Transition Identifier (5)	5.11	
55 thru 59	Enroute Transition Fix (5)	5.13	
60 thru 61	ICAO Code (2)	5.14	
62	Section Code (1)	5.4	
63	Subsection Code (1)	5.5	
64 thru 66	Enroute Transition Along Track Distance (3)	5.231	
67 thru 69	Sequence Number (3)	5.12	
70	Continuation Number (1)	5.16	
71 thru 74	Number of Engines (4)	5.232	
75	Turboprop/Jet Indicator (1)	5.233	
76	RNAV Flag (1)	5.234	
77	ATC Weight Category (1)	5.235	
78 thru 84	ATC Identifier (7)	5.236	
85	Time Code (1)	5.131	
86 thru 100	Procedure Description (15)	5.237	
101 thru 102	Leg Type Code (2)	5.238	
103	Reporting Code (1)	5.239	
104 thru 107	Initial Departure Magnetic Course (4)	5.26	
108	Altitude Description (1)	5.29	
109 thru 111	Altitude (3)	5.240	
112 thru 114	Altitude (3)	5.240	
115 thru 117	Speed Limit (3)	5.72	
118 thru 119	Initial Cruise Table (2)	5.134	
120	Speed Limit Description (1)	5.261	
121 thru 123	Blank (Spacing) (3)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.27.2 Flight Planning Arrival/Departure Data Primary Extension Continuation Records

This Flight Planning Arrival/Departure Data Continuation Record is provided when Intermediate Fix information is required for the procedure coded in the Primary Record.

Column	Field Name (Length)	Reference	Required
1 thru 69	Fields as on Primary Records		Y
70	Continuation Number (1)	5.16	Y
71	Application Type (1) E—Primary Record Extension	5.91	Y
72 thru 76	Intermediate Fix Identifier (5)	5.13	
77 thru 78	ICAO Code (2)	5.14	
79	Section Code (1)	5.4	
80	Subsection Code (1)	5.5	
81 thru 83	Intermediate Distance (ATD) (3)	5.231	
84	Fix Related Transition Code (1)	5.241	
85 thru 89	Intermediate Fix Identifier (5)	5.13	
90 thru 91	ICAO Code (2)	5.14	
92	Section Code (1)	5.4	
93	Subsection Code (1)	5.5	
94 thru 96	Intermediate Distance (ATD) (3)	5.231	
97	Fix Related Transition Code (1)	5.241	
98 thru 102	Intermediate Fix Identifier (5)	5.13	
103 thru 104	ICAO Code (2)	5.14	
105	Section Code (1)	5.4	
106	Subsection Code (1)	5.5	
107 thru 109	Intermediate Distance (ATD) (3)	5.231	
110	Fix Related Transition Code (1)	5.241	
111 thru 115	Intermediate Fix Identifier (5)	5.13	
116 thru 117	ICAO Code (2)	5.14	
118	Section Code (1)	5.4	
119	Subsection Code (1)	5.5	
120 thru 122	Intermediate Distance (ATD) (3)	5.231	
123	Fix Related Transition Code (1)	5.241	
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.27.3 Flight Planning Arrival/Departure Data Formatted Time Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 69	Fields as on Primary Records		Y
70	Continuation Number (1)	5.16	Y
71	Application Type (1) T—Formatted Time Data	5.91	Y
72	Time Code (1)	5.131	
73	Time Indicator (1)	5.138	
74 thru 83	Time of Operation (10)	5.195	
84 thru 93	Time of Operation (10)	5.195	
94 thru 103	Time of Operation (10)	5.195	
104 thru 113	Time of Operation (10)	5.195	
114 thru 123	Time of Operation (10)	5.195	
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note: If more than four Times of Operations (5.195) values are needed, this continuation record will need to be provided more than once.

Column	Field Name (Length)	Reference	Required
1 thru 69	Fields as on Primary Records		Y
70	Continuation Record Number (1)	5.16	Y
71	Application Type (1) U – Narrative Time Data	5.91	Y
72 thru 123	Time Narrative (52)	5.285	
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.28 Airport SBAS Path Point Records (PP)

This file will contain Path Point Records. See Section 5.7 for details.

4.1.28.1 Airport SBAS Path Point Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (1)		
7 thru 10	*Airport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 19	Approach Procedure Ident (6)	5.10	Y
20 thru 24	*Runway Identifier or Final Approach Course as Runway (5)	5.46 or 5.300	Y
25 thru 26	*Operation Type (2)	5.223	Y
27	Continuation Record Number (1)	5.16	Y
28	*Route Indicator (1)	5.224	Y
29 thru 30	*SBAS Service Provider Identifier (2)	5.255	Y
31 thru 32	*Reference Path Data Selector (2)	5.256	Y
33 thru 36	*Reference Path Identifier (4)	5.257	Y
37	*Approach Performance Designator (1)	5.258	Y
38 thru 48	*Landing Threshold Point Latitude (11)	5.267	Y
49 thru 60	*Landing Threshold Point Longitude (12)	5.268	Y
61 thru 66	*(LTP) Ellipsoid Height (6)	5.225	Y
67 thru 70	*Glide Path Angle (4)	5.226	Y
71 thru 81	*Flight Path Alignment Point Latitude (11)	5.267	Y
82 thru 93	*Flight Path Alignment Point Longitude (12)	5.268	Y
94 thru 98	*Course Width at Threshold (5)	5.228	Y
99 thru 102	*Length Offset (4)	5.259	Y
103 thru 108	*Path Point TCH (6)	5.265	Y
109	*TCH Units Indicator (1)	5.266	Y
110 thru 112	*HAL (3)	5.263	Y
113 thru 115	*VAL (3)	5.264	Y
116 thru 123	SBAS FAS Data CRC Remainder (8)	5.229	Y
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: In the Path Point Record description, the field prefixed with * in the Field Name are those columns that have been determined as required for the data wrap for CRC calculations

Note 2: In order to properly convert values and binary pack these fields for the CRC data wrap, refer to RTCA DO-229 Minimum Operational

Performance Standards for Global Positioning System/Wide Area Augmentation System Airborne Equipment for Final Approach Segment (FAS) Data Block CRC standards.

4.1.28.2 Path Point Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 26	Fields as on Primary Record Type		Y
27	Continuation Record Number (1)	5.16	Y
28	Application Type (1)	5.91	Y
29 thru 34	(FPAP) Ellipsoid Height (6)	5.225	
35 thru 40	(FPAP) Orthometric Height (6)	5.227	
41 thru 46	(LTP) Orthometric Height (6)	5.227	
47 thru 56	Approach Type Identifier (10)	5.262	
57 thru 61	GBAS/SBAS Channel Number (5)	5.244	Y
62 thru 65	SBAS Final Approach Course (4)	5.320	
66 thru 123	Blank (Spacing) (58)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.29 GLS Record (PT)

This record contains a sequential listing of all GNSS Landing Systems (GLS) approaches, including the slope, course, and reference path idents of the GLS approach. A GLS approach is identified by its ident and channel. Note that several GLS approaches can be supported by a single differential GBAS ground station.

4.1.29.1 GLS Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (1)		
7 thru 10	Airport or Heliport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection code (1)	5.5	Y
14 thru 17	GLS Ref Path Identifier (4)	5.44	Y
18	GLS Category (1)	5.80	
19 thru 21	Blank (3)		
22	Continuation Number (1)	5.16	Y
23 thru 27	GBAS/SBAS Channel (5)	5.244	
28 thru 32	Runway or Helipad Identifier (5)	5.46 or 5.180	
33 thru 51	Blank (19)		
52 thru 55	GLS Approach Bearing (4)	5.47 ~~Note 1~~	
56 thru 64	Station Latitude (9)	5.36 Note 1	
65 thru 74	Station Longitude (10)	5.37	
75 thru 78	GLS Station ident (4)	5.243	
79 thru 83	Blank (5)		
84 thru 85	Service Volume Radius (2)	5.245	
86 thru 87	TDMA Slots (2)	5.246	
88 thru 90	GLS Approach Slope (3)	5.52	
91 thru 95	Magnetic Variation (5)	5.39	
96 thru 97	Reserved (2)		
98 thru 102	Station Elevation (5)	5.74	
103 thru 105	Datum Code (3)	5.197	
106 thru 108	Station Type (3)	5.247	
109 thru 110	Blank (2)		
111 thru 115	Station Elevation WGS 84 (5)	5.248	
116 thru 118	Glide Path TCH (3)	5.67	
119 thru 123	Blank (4)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: GLS reference point should be equal to IFR landing threshold position, as it is the trajectory reference point.

~~Note 2: All the latitudes/longitudes of the record refer to the same datum code.~~

4.1.29.2 GLS Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 123	Notes (100)	5.61	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.30 Alternate Record (RA)

The Alternate Record file contains a listing of up to six Alternate Airport Identifiers or, up to six Alternate Company Route Identifiers or any combination of Alternate Airport or Alternate Route

Identifiers for a given departure airport, destination airport or enroute fix. The data content of the record is customer defined.

4.1.30.1 Alternate Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 11	Alternate Related Airport or Fix (5)	5.75	Y
12 thru 13	Alternate Related ICAO Code (2)	5.14	Y
14	Alternate Related Section Code (1)	5.4	Y
15	Alternate Related Subsection Code (1)	5.5	Y
16 thru 17	Alternate Record Type (2)	5.250	Y
18 thru 19	Blank (Spacing) (2)		
20 thru 22	Distance to Alternate (3)	5.251	
23	Alternate Type (1)	5.252	
24 thru 33	Primary Alternate Identifier (10)	5.253	
34 thru 35	Blank (Spacing) (2)		
36 thru 38	Distance to Alternate (3)	5.251	
39	Alternate Type (1)	5.252	
40 thru 49	Additional Alternate Identifier One (10)	5.253	
50 thru 51	Blank (Spacing) (2)		
52 thru 54	Distance to Alternate (3)	5.251	
55	Alternate Type (1)	5.252	
56 thru 65	Additional Alternate Identifier Two (10)	5.253	
66 thru 67	Blank (Spacing) (2)		
68 thru 70	Distance to Alternate (3)	5.251	
71	Alternate Type (1)	5.252	
72 thru 81	Additional Alternate Identifier Three (10)	5.253	
82 thru 83	Blank (Spacing) (2)		
84 thru 86	Distance to Alternate (3)	5.251	
87	Alternate Type (1)	5.252	
88 thru 97	Additional Alternate Identifier Four (10)	5.253	
98 thru 99	Blank (Spacing) (2)		
100 thru 102	Distance to Alternate (3)	5.251	
103	Alternate Type (1)	5.252	
104 thru 113	Additional Alternate Identifier Five (10)	5.253	
114 thru 123	Reserved (expansion) (10)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.31 Airport TAA (PK)

The Airport Terminal Arrival Altitude (TAA) file contains details relating to TAA sectorization and sector altitudes.

4.1.31.1 Airport TAA Primary Records (PK)

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Airport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 19	Approach Identifier (6)	5.10	Y
20 thru 24	TAA Waypoint (5)	5.273	Y
25 thru 26	ICAO Code (2)	5.14	Y
27	Section Code (1)	5.4	Y
28	Subsection Code (1)	5.5	Y
29	TAA Fix Position Indicator (1)	5.272	Y
30	Continuation Record No. (1)	5.16	Y
31 thru 32	Blank (2)		
33 thru 38	Sector Bearing (6)	5.146	
39 thru 41	Sector Minimum Altitude (3)	5.147	
42 thru 45	Sector Radius 1 (4)	5.274	
46	Procedure Turn Indicator (1)	5.271	
47 thru 52	Sector Bearing (6)	5.146	
53 thru 55	Sector Minimum Altitude (3)	5.147	
56 thru 59	Sector Radius 1 (4)	5.274	
60	Procedure Turn Indicator (1)	5.271	
61 thru 66	Sector Bearing (6)	5.146	
67 thru 69	Sector Minimum Altitude (3)	5.147	
70 thru 73	Sector Radius 1 (4)	5.274	
74	Procedure Turn Indicator (1)	5.271	
75 thru 80	Sector Bearing (6)	5.146	
81 thru 83	Sector Minimum Altitude (3)	5.147	
84 thru 87	Sector Radius 1 (4)	5.274	
88	Procedure Turn Indicator (1)	5.271	
89 thru 94	Sector Bearing (6)	5.146	
95 thru 97	Sector Minimum Altitude (3)	5.147	
98 thru 101	Sector Radius 1 (4)	5.274	
102	Procedure Turn Indicator (1)	5.271	
103 thru 107	Sector Bearing Reference Waypoint (5)	5.304	
108 thru 109	ICAO Code (2)	5.14	
110	Section Code (1)	5.4	
111	Subsection Code (1)	5.5	
112 thru 116	Blank (5)		
117	Procedure Design Aircraft Category or Type (1)	5.301	
118	Approach Route Qualifier 1 (1)	5.7	
119	Approach Route Qualifier 2 (1)	5.7	
120	Mag/True Indicator (1)	5.165	
121 thru 123	Blank (Spacing) (3)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.31.2 Airport Terminal Arrival Altitude Continuation Records (PK)

Column	Field Name (Length)	Reference	Required
1 thru 30	Fields as on Primary Records		Y
31	Application Type (1)	5.91	Y
32	Blank (Spacing) (1)		
33 thru 38	Sector Bearing (6)	5.146	
39 thru 41	Sector Minimum Altitude (3)	5.147	
42 thru 45	Sector Radius 1 (4)	5.274	
46	Procedure Turn Indicator (1)	5.271	
47 thru 52	Sector Bearing (6)	5.146	
53 thru 55	Sector Minimum Altitude (3)	5.147	
56 thru 59	Sector Radius 1 (4)	5.274	
60	Procedure Turn Indicator (1)	5.271	
61 thru 66	Sector Bearing (6)	5.146	
67 thru 69	Sector Minimum Altitude (3)	5.147	
70 thru 73	Sector Radius 1 (4)	5.274	
74	Procedure Turn Indicator (1)	5.271	
75 thru 80	Sector Bearing (6)	5.146	
81 thru 83	Sector Minimum Altitude (3)	5.147	
84 thru 87	Sector Radius 1 (4)	5.274	
88	Procedure Turn Indicator (1)	5.271	
89 thru 109	Notes (21)	5.61	
110 thru 116	Reserved (Expansion) (7)		
117	Procedure Design Aircraft Category or Type (1)	5.301	
118	Approach Route Qualifier 1 (1)	5.7	
119	Approach Route Qualifier 2 (1)	5.7	
120 thru 123	Blank (4)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.32 TACAN-Only NAVAID Record (DT)

The TACAN-only NAVAID file contains TACAN stations with a duplicate identifier (same ident and ICAO Code) navaid in the VHF Navaid (D) file.

4.1.32.1 TACAN-Only NAVAID Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 10	Airport Identifier (4)	5.6	
11 thru 12	ICAO Code (2)	5.14	
13	Blank (Spacing) (1)		
14 thru 17	VOR Identifier (4)	5.33	Y
18 thru 19	Blank (Spacing) (2)		
20 thru 21	ICAO Code (2)	5.14	Y
22	Continuation Record No. (1)	5.16	
23 thru 27	VOR Frequency (5)	5.34	
28 thru 32	NAVAID Class (5)	5.35	
33 thru 51	Blank (Spacing) (19)		
52 thru 55	TACAN Ident (4)	5.38	
56 thru 64	TACAN Latitude (9)	5.36	
65 thru 74	TACAN Longitude (10)	5.37	
75 thru79	Station Declination (5)	5.66	
80 thru 84	TACAN Elevation (5)	5.40	
85	Navaid Useable Range (1)	5.149	
86 thru 87	Blank (Spacing) (2)		
88 thru 90	Frequency Protection (3)	5.150	
91 thru 93	Datum Code (3)	5.197	
94 thru 123	TACAN Name (30)	5.71	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.32.2 TACAN-Only NAVAID Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 92	Notes (69)	5.61	
93 thru 123	Reserved (Expansion) (31)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.32.3 TACAN-Only NAVAID Simulation Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 27	Blank (Spacing) (4)		
28 thru 32	Facility Characteristics (5)	5.93	
33 thru 74	Reserved (Spacing) (42)		
75 thru 79	Magnetic Variation (5)	5.39	
80 thru 84	Facility Elevation (5)	5.92	
85 thru 123	Reserved (Expansion) (39)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.32.4 TACAN-Only NAVAID Flight Planning Continuation Records

This Continuation Record is used to indicate the FIR and UIR within which the VHF NAVAID defined in the Primary Record is located and the Start/End validity dates/times of the Primary Record.

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 27	FIR Identifier (4)	5.116	
28 thru 31	UIR Identifier (4)	5.116	
32 thru 43	Blank (Spacing) (12)		
44 thru 123	Reserved (Expansion) (80)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.32.5 TACAN-Only NAVAID Limitation Continuation Record

This Continuation Record is used to provide details on signal limitations of the TACAN-Only Navaid contained in the Primary Record Section 4.1.32.1. Note that multiple records formatted as in Section 4.1.32.5 may be included for a single Primary Record. As Service Volume or Designated Operational Coverage may also be considered limitations, this information is also provided for each navaid listed in the Primary Records, where such information is available.

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24	Navaid Limitation Code (1)	5.205	
25	Component Affected Indicator (1)	5.206	
26 thru 27	Sequence Number (2)	5.12	
28 thru 29	Sector From/Sector To (2)	5.207	
30	Distance Description (1)	5.187	
31 thru 36	Distance Limitation (6)	5.208	
37	Altitude Description (1)	5.29	
38 thru 43	Altitude Limitation (6)	5.209	
44 thru 45	Sector From/Sector To (2)	5.207	
46	Distance Description (1)	5.187	
47 thru 52	Distance Limitation (6)	5.208	
53	Altitude Description (1)	5.29	
54 thru 59	Altitude Limitation (6)	5.209	
60 thru 61	Sector From/Sector To (2)	5.207	
62	Distance Description (1)	5.187	
63 thru 68	Distance Limitation (6)	5.208	
69	Altitude Description (1)	5.29	
70 thru 75	Altitude Limitation (6)	5.209	
76 thru 77	Sector From/Sector To (2)	5.207	
78	Distance Description (1)	5.187	
79 thru 84	Distance Limitation (6)	5.208	
85	Altitude Description (1)	5.29	
86 thru 91	Altitude Limitation (6)	5.209	
92 thru 93	Sector From/Sector To (2)	5.207	
94	Distance Description (1)	5.187	
95 thru 100	Distance Limitation (6)	5.208	
101	Altitude Description (1)	5.29	
102 thru 107	Altitude Limitation (6)	5.209	
108	Sequence End Indicator (1)	5.210	
109 thru 123	Blank (Spacing) (15)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.33 Special Activity Area (ES)

The Special Activity Area (SAA) file contains details relating to operation that could be hazardous to aeronautical navigation around a specified location.

4.1.33.1 Special Activity Area Primary Record

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer /Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7	SAA Type (1)	5.278	Y
8 thru 13	SAA Identifier (6)	5.279	Y
14 thru 15	ICAO Code (2)	5.14	Y
16 thru19	Airport Identifier (4)	5.6	
20 thru 21	ICAO Code (2)	5.14	
22	Continuation Record No. (1)	5.16	Y
23	Blank (Spacing) (1)		
24 thru 32	Latitude (9)	5.36	
33 thru 42	Longitude (10)	5.37	
43 thru 45	SAA Size (3)	5.280	
46	Comm Freq Units (1)	5.104	
47 thru 51	Upper Limit (5)	5.121	
52	Unit Indicator (1)	5.133	
53	SAA Volume (1)	5.281	
54 thru 56	Operating Times (3)	5.282	
57	Public or Military (1)	5.177	
58	Blank (Spacing) (1)		
59 thru 83	Controlling Agency (25)	5.140	
84 thru 86	Communication Type (3)	5.101	
87 thru 93	Communication Frequency (7)	5.103	
94 thru 123	Special Activity Area Name (30)	5.126	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.34 Communication Type Translation (TV)

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.3	Y
2 thru 4	Reserved (3)		
5	Section (1)	5.4	Y
6	Subsection (1)	5.5	Y
7 thru 9	Communication Type (3)	5.101	Y
10	Type Recognized By (1)	5.287	
11 thru 90	Translation (80)	5.288	
91	Used On (1)	5.289	
92 thru 95	Communication Class (4)	5.283	
96 thru 123	Blank (Spacing) (28)		
124 thru 128	File Record Number (1)	5.31	Y
129 thru 132	Cycle Date (1)	5.32	Y

4.1.35 GBAS Path Point Record (PQ)

This file will contain Path Point records for GLS Approach Procedures.

4.1.35.1 GBAS Path Point Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (1)		
7 thru 10	*Airport or Heliport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 19	Approach Procedure Ident (6)	5.10	Y
20 thru 24	*Runway Identifier or Final Approach Course as Runway (5)	5.46 or 5.300	Y
25 thru 26	*Operations Type (2)	5.223	Y
27	Continuation Record Number (1)	5.16	Y
28	*Route Indicator (1)	5.224	Y
29 thru 30	*SBAS Service Provider (2)	5.255 Note 3	Y
31 thru 32	*Reference Path Data Selector (2)	5.256	Y
33 thru 36	*Reference Path Identifier (4)	5.257	Y
37	*Approach Performance Designator (1)	5.258	Y
38 thru 48	*Landing Threshold Point Latitude (11)	5.267	Y
49 thru 60	*Landing Threshold Point Longitude (12)	5.268	Y
61 thru 66	*(LTP) Ellipsoid Height (6)	5.225	Y
67 thru 70	*Glide Path Angle (4)	5.226	Y
71 thru 81	*Flight Path Alignment Point Latitude (11)	5.267	Y
82 thru 93	*Flight Path Alignment Point Longitude (12)	5.268	Y
94 thru 98	*Course Width at Threshold (5)	5.228	Y
99 thru 102	*Length Offset (4)	5.259	Y
103 thru 108	*Path Point TCH (6)	5.265	Y
109	*TCH Units Indicator (1)	5.266	Y
110 thru 115	Blank (Spacing) (6)		
116 thru 123	GBAS FAS Data CRC Remainder (8)	5.229	Y
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: In the GBAS Path Point Record description, the fields prefixed with * in the Field Name are those columns that have been determined as required for the data wrap for CRC calculations.

Note 2: In order to properly convert values and binary pack these fields for the CRC data wrap, refer to RTCA DO-246 GNSS Based Precision Approach Local Area Augmentation System (LAAS) – Signal-in-Space Interface Control Document (ICD) for Final Approach Segment (FAS) Data Block CRC standards.

Note 3: SBAS Service Provider: this field is used by SBAS equipment to associate the data with an SBAS service provider. This field has no application for GBAS and should be ignored – except for the CRC calculations – in a GBAS application.

4.1.35.2 GBAS Path Point Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 26	Fields as on Primary Record Type		Y
27	Continuation Record Number (1)	5.16	Y
28	Application Type (1)	5.91	Y
29 thru 34	(FPAP) Ellipsoid Height (6)	5.225	
35 thru 40	(FPAP) Orthometric Height (6)	5.227	
41 thru 46	(LTP) Orthometric Height (6)	5.227	
47 thru 56	Approach Type Identifier (10)	5.262	
57 thru 61	GBAS/SBAS Channel Number (5)	5.244	Y
62 thru 123	Blank (Spacing) (65)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.36 Airport Helipad Record (PH)

This file will contain a listing of all helipads associated with airports.

4.1.36.1 Airport Helipad Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Airport or Heliport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 18	Helipad Identifier (5)	5.180	Y
19 thru 21	Blank (Spacing) (3)		
22	Continuation Record No. (1)	5.16	Y
23	Helipad Shape (1)	5.303	
24 thru 31	Helipad TLOF Dimension (8)	5.176	
32	Reserved (Expansion) (1)		
33 thru 41	Helipad Latitude (9)	5.36	Y
42 thru 51	Helipad Longitude (10)	5.37	Y
52	Helipad Surface Code (1)	5.249	
53 thru 56	Helipad Surface Type (4)	5.302	
57 thru 59	Max Allowable Helicopter Weight (3)	5.309	
60	Helicopter Performance Requirement (1)	5.310	
61 thru 63	Helipad Maximum Rotor Diameter (3)	5.321	
64	Helipad Type (1)	5.322	
65	Reserved (Expansion) (1)		
66 thru 70	Helipad Elevation (5)	5.68	
71 thru 78	Helipad FATO Dimension (8)	5.176	
79 thru 86	Safety Area Dimension (8)	5.176	
87 thru 91	Helipad Orientation (5)	5.323	
92 thru 96	Helipad Identifier Orientation (5)	5.324	
97 thru 100	Preferred Approach Bearing 1 (4)	5.325	
101 thru 104	Preferred Approach Bearing 2 (4)	5.325	
105 thru 123	Reserved (Expansion) (17)		
124 thru 128	File record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.1.37 ATN Data (ATN NSAP) Record (TL)

The ATN Data record contains all ATN Ground Facility logon codes and supporting ATN Network Service Access Point (NSAP) Address data for the CPDLC system to logon to the ATSU where CPDLC is provided via ATN.

4.1.37.1 ATN Data Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Blank (Spacing) (3)		
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 14	Ground Facility Identifier (8)	5.326	Y
15 thru 18	Blank (Spacing) (4)		
19	Continuation Record No. (1)	5.16	Y
20 thru 21	Authority and Format Identifier (2)	5.327	
22 thru 25	Initial Domain Identifier (4)	5.328	
26 thru 27	Version Identifier (2)	5.329	
28 thru 33	Administrative Identifier (6)	5.300	
34 thru 35	Routing Domain Format (2)	5.331	
36 thru 41	Administrative Region Selector (6)	5.332	
42 thru 45	Location Identifier (4)	5.333	
46 thru 57	System Identifier (12)	5.334	
58 thru 59	NSAP Selector (2)	5.335	
60 thru 63	CM Transport Selector (4)	5.336	
64	Use Indicator (1)	5.337	
65 thru 89	FIR/UIR Name (25)	5.125	
90 thru 123	Blank (Spacing) (34)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2 Master Helicopter User File (HA)

This section contains record information unique to helicopter operations. In addition to the records identified in this section, records identified in Section 4.1, Master Airline User File, are used in the Master Helicopter User File.

4.2.1   Heliport Records (HA)

This file will contain heliport information.

4.2.1.1 Heliport Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Heliport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 16	ATA/IATA Designator (3)	5.107	
17 thru 18	Reserved (Expansion) (2)		
19 thru 21	Blank (Spacing) (3)		
22	Continuation Record No. (1)	5.16	
23 thru 27	Speed Limit Altitude (5)	5.73	
28 thru 30	Datum Code (3)	5.197	
31	IFR Capability (1)	5.108	
32	Heliport Type	5.305	
33 thru 41	Heliport Reference Point Latitude (9)	5.36	Y
42 thru 51	Heliport Reference Point Longitude (10)	5.37	Y
52 thru 56	Magnetic Variation (5)	5.39	
57 thru 61	Heliport Elevation (5)	5.55	
62 thru 64	Speed Limit (3)	5.72	
65 thru 68	Recommended Navaid (4)	5.23	
69 thru 70	ICAO Code (2)	5.14	
71 thru 75	Transition Altitude (5)	5.53	
76 thru 80	Transition Level (5)	5.53	
81	Public Military Indicator (1)	5.177	
82 thru 84	Time Zone (3)	5.178	
85	Daylight Indicator (1)	5.179	
86 thru 91	Reserved Expansion (6)		
92	Magnetic/True Indicator (1)	5.165	
93	Reserved (Expansion) (1)		
94 thru 123	Heliport Name (30)	5.71	
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.1.2 Heliport Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 92	Notes (69)	5.61	
93 thru 123	Reserved (Expansion) (31)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.1.3 Heliport Flight Planning Continuation Records

This Continuation Record is used to indicate the FIR and UIR within which the Heliport defined in the Primary Record is located, and to provide an indication if the Heliport defined in the Primary Record is associated with Controlled Airspace.

Column	Field Name (Length)	Reference	Required

1 thru 21	Fields as on Primary Records		Y
22	Continuation Record Number (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 27	FIR Identifier (4)	5.116	
28 thru 31	UIR Identifier (4)	5.116	
32 thru 66	Blank (Spacing) (35)		
67	Controlled Airspace Indicator (1)	5.217	
68 thru 71	Controlled Airspace Airport Identifier (4)	5.6	
72 thru 73	Controlled Airspace Airport ICAO (2)	5.14	
74 thru 123	Blank (Spacing) (50)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.1.4 Heliport Flight Planning Continuation Records

Deleted by Supplement 19.

4.2.2 Heliport Terminal Waypoint Records (HC)

The Heliport Terminal Waypoint file contains all terminal waypoints and VFR waypoint within the geographical area of each heliport. Heliport Terminal Waypoints utilized by two or more heliports will be stored in the Enroute Waypoint file to eliminate duplication. Terminal Waypoints used jointly by an airport and a heliport are also stored in the Enroute waypoint file.

4.2.2.1 Heliport Terminal Waypoint Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Heliport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 18	Waypoint Identifier (5)	5.13	Y
19	Blank (Spacing) (1)		
20 thru 21	ICAO Code (2)	5.14	Y
22	Continuation Record Number (1)	5.16	Y
23 thru 26	Blank (Spacing) (4)		
27 thru 29	Waypoint Type (3)	5.42	
30	Reserved (1)		
31	Waypoint Usage (1)	5.82	
32	Blank (Spacing) (1)		
33 thru 41	Waypoint Latitude (9)	5.36	Y
42 thru 51	Waypoint Longitude (10)	5.37	Y
52 thru 74	Blank (Spacing) (23)		
75 thru 79	Dynamic Magnetic Variation (5)	5.39	
80 thru 84	Reserved (Expansion) (5)		
85 thru 87	Datum Code (3)	5.197	
88 thru 95	Reserved (Expansion) (8)		
96 thru 98	Name Format Indicator (3)	5.196	
99 thru 123	Waypoint Name/Description (25)	5.43	
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.2.2 Heliport Terminal Waypoint Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record Number (1)	5.16	Y
23	Application Type) (1)	5.91	Y
24 thru 92	Notes (69)	5.61	
93 thru 123	Reserved (Expansion) (31)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.2.3 Heliport Terminal Waypoint Flight Planning Continuation Records

This Continuation Record is used to indicate the FIR and UIR within which the Waypoint defined in the Primary Records is located.

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record Number (1)	5.16	Y
23	Application Type (1)	5.91	Y
24 thru 27	FIR Identifier (4)	5.116	
28 thru 31	UIR Identifier (4)	5.116	
32 thru 43	Blank (Spacing) (12)		
44 thru 123	Reserved (Expansion) (80)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.2.4 Heliport Terminal Waypoint Flight Planning Continuation Records

Deleted by Supplement 19.

4.2.3 Heliport SID/STAR/Approach (HD/HE/HF)

Heliport SIDs, STARs, and Approach Procedures are contained in three separate section/subsection groupings, using this single record format. Section/Subsection HD contains a sequential listing of those published Heliport Standard Instrument Departures that can be encoded according to this specification. Section/Subsection HE contains a sequential list of those published Heliport Standard Terminal Arrival Routes that can be encoded according to this specification. Section/Subsection HF contains a sequential listing of those published Heliport Standard Instrument Approach Procedures that can be encoded according to this specification.

4.2.3.1 Heliport SID/STAR/Approach Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Heliport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 19	SID/STAR/APP Identifier (6)	5.9, 5.10 Note 1	Y
20	Route Type (1)	5.7	Y
21 thru 25	Transition Identifier (5)	5.11	Y
26	Procedure Design Aircraft Category or Type	5.301	
27 thru 29	Sequence Number (3)	5.12	Y
30 thru 34	Fix Identifier (5)	5.13	
35 thru 36	ICAO Code (2)	5.14	
37	Section Code (1)	5.4	
38	Subsection Code (1)	5.5	
39	Continuation Record Number (1)	5.16	Y
40 thru 43	Waypoint Description Code (4)	5.17	
44	Turn Direction (1)	5.20	
45 thru 47	RNP (3)	5.211 Note 4	
48 thru 49	Path and Termination (2)	5.21	Y
50	Turn Direction Valid (1)	5.22	
51 thru 54	Recommended Navaid (4)	5.23	
55 thru 56	ICAO Code (2)	5.14	
57 thru 62	ARC Radius (6)	5.204	
63 thru 66	Theta (4)	5.24	
67 thru 70	Rho (4)	5.25	
71 thru 74	Magnetic Course (4)	5.26	
75 thru 78	Route Distance/Holding Distance or Time (4)	5.27	
79	Recommended Navaid Section (1)	5.4	
80	Recommended Navaid Subsection (1)	5.5	
81	Inbound/Outbound Indicator (1)	5.298	
82	Reserved (Spacing) (1)		
83	Altitude Description (1)	5.29	
84	ATC Indicator (1)	5.81	
85 thru 89	Altitude (5)	5.30	
90 thru 94	Altitude (5)	5.30	
95 thru 99	Transition Altitude (5)	5.53	
100 thru 102	Speed Limit (3)	5.72	
103 thru 106	Vertical Angle (4)	5.70	
107 thru 111	Center Fix or TAA Procedure Turn Indicator (5)	5.144 or 5.271	
112	Multiple Code or TAA, Sector Identifier (1)	5.130 or 5.272	
113 thru 114	ICAO Code (2)	5.14 Note 3	
115	Section Code (1)	5.4 Note 3	
116	Subsection Code (1)	5.5 Note 3	
117	GNSS/FMS Indicator (1)	5.222	
118	Speed Limit Description (1)	5.261	
119	Route Qualifier 1 (1)	5.7 Note 2	
120	Route Qualifier 2 (1)	5.7 Note 2	
121	Route Qualifier 3 (1)	5.7 Note 2	
122	Preferred Multiple Approach Indicator (1)	5.306	
123	Reserved (Expansion) (1)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: For approach route idents including Multiple Indicators, see Section 5.10.

Note 2: Columns 119 thru 121 (Route Qualifier 1, 2, and 3) are required to match the Primary Record to the Continuation Record(s). This non-standard column sorting sequence was selected to preserve the Primary Record Layout for SID/STAR/Approach Records as much as possible as these new fields were introduced in Supplement 14.

Note 3: When columns 107 thru 116 are providing a reference to a MSA or the center fix for an RF leg, all of the columns are used. When they are providing a reference to a TAA, only columns 107 thru 112 are used and 113 thru 116 are blank.

Note 4: If there is only one set of RNP criteria for the RNAV procedure, that criteria is provided in the RNP value field for Primary Record. Otherwise, the Primary Record contains one consistent set of RNP values for the least restrictive RNAV operating criteria and not a mix of RNP values for different RNP operating criteria.

4.2.3.2 Heliport SID/STAR/Approach Primary Extension Continuation Records

Column	Field Name (Length)	Reference		Required
1 thru 38	Fields as on Primary Records			Y
39	Continuation Record Number (1)	5.16		Y
40	Application Type (1)	5.91		Y
41 thru 43	Procedure TCH (3)	5.67		
44 thru 60	Blank Spacing (17)			
61 thru 65	Procedure Design Mag Var (5)	5.39	Note 2	
66	Procedure Design Mag Var Indicator (1)	5.291	Note 2	
67 thru 71	Procedure Referenced Fix Ident (5)	5.299	Note 3	
72 thru 73	ICAO Code (2)	5.14		
74	Section Code	5.4		
75	Subsection Code	5.5		
76 thru 80	Procedure Referenced Fix Ident (5)	5.299	Note 3	
81 thru 82	ICAO Code (2)	5.14		
83	Section Code	5.4		
84	Subsection Code	5.5		
85 thru 89	Procedure Referenced Fix Ident (5)	5.299	Note 3	
90 thru 91	ICAO Code (2)	5.14		
92	Section Code	5.4		
93	Subsection Code	5.5		
94 thru 98	Procedure Referenced Fix Ident (5)	5.299	Note 3	
99 thru 100	ICAO Code (2)	5.14		
101	Section Code	5.4		
102	Subsection Code	5.5		
103 thru 104	CAT A Radii (2)	5.292		
105 thru 110	Reserved (6)			
111	Special Indicator	5.307		
112 thru 115	Reserved (4)			
116 thru 118	Vertical Scale Factor (3)	5.293		
119	Route Qualifier 1 (1)	5.7	Note 1	
120	Route Qualifier 2 (1)	5.7	Note 1	
121	Route Qualifier 3 (1)	5.7	Note 1	
122 thru 123	Reserved (2)			
124 thru 128	File Record Number (5)	5.31		Y
129 thru 132	Cycle Date (4)	5.32		Y

Note 1: Columns 119 thru 121, (Approach Route Qualifier 1, 2, and 3) are required to match the Primary Record to the Continuation Record(s). This non-standard column sorting sequence was selected to preserve the Primary Record for SID/STAR/Approach Records as much as possible as these new fields were introduced in Supplement 14.

Note 2: When government source provides Procedure Design Mag Var at the procedure level, a single Primary Extension Continuation Record will be provided, associated to the first sequence in each transition and the Procedure Design Mag Var Indicator will be set to P. This is consistent with the intent of this continuation record. When government source provides Procedure Design Mag Var the leg level, a Primary Extension Continuation Record will be provided associated with each sequence of each transitions and the Procedure Design Mag Var Indicator will be set to L.

Note 3: When government source provided more than four Procedure Referenced Fix Ident, multiple Heliport SID/STAR/Approach Primary Extension Continuation Records will be provided.

4.2.3.3 Heliport SID/STAR/Approach Flight Planning Continuation Records

This Continuation Record is used to indicate the Leg Distance for each segment of the Route.

Column	Field Name (Length)	Reference	Required
1 thru 38	Fields as on Primary Records		Y
39	Continuation Record Number (1)	5.16	Y
40	Application Type (1)	5.91	Y
41	ATC Assigned Only (1)	5.159	
41 thru 74	Blank (Spacing) (34)		
75 thru 78	Leg Distance (4)	5.260	
79 thru 118	Reserved (Expansion) (40)		
119	Route Qualifier 1 (1)	5.7 Note 1	
120	Route Qualifier 2 (1)	5.7 Note 1	
121	Route Qualifier 3 (1)	5.7 Note 1	
122 thru 123	Blank (Spacing) (2)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: Columns 119 thru 121 (Approach Route Qualifier 1, 2, and 3) are required to match the Primary Record to the Continuation Record(s). This non-standard column sorting sequence was selected to preserve the Primary Record for SID/STAR/Approach Records as much as possible as these new fields were introduced in Supplement 14.

4.2.3.4 Heliport SID/STAR/Approach Flight Planning Continuation Records

Deleted by Supplement 19.

4.2.3.5 Heliport Procedure Data Continuation Record

The Heliport Procedure Data Continuation Record is used to provide Level of Service information for RNAV Approach Procedures. Level of Service and Authorization are based on source provided operating minimums as described in Sections 5.275, 5.276, and 5.296 of this document. This Continuation Record is provided once per procedure as a Continuation to Primary Approach Procedure Record that contains the encoding for Final Approach Fix (FAF) of the procedure.

Column	Field Name (Length)	Reference	Required
1 thru 38	Fields as on Primary Record		Y
39	Continuation Record Number (1)	5.16	Y
40	Application Type (1)	5.91	Y
41	FAS Block Provided	5.276	
42 thru 51	FAS Block Provided Level of Service Name (10)	5.275	
52	LNAV/VNAV Authorized (1)	5.276	
53 thru 62	LNAV/VNAV Level of Service Name (10)	5.275	
63	LNAV Authorized (1)	5.276	
64 thru 73	LNAV Level of Service Name (10)	5.275	
74	Remote Altimeter Flag (1)	5.308	
75	Baro VNAV Not Authorized (1)	5.155	
76 thru 88	Blank (Spacing) (14)		
89	RNP Authorized (1)	5.276	
90 thru 92	RNP Level of Service value (3)	5.296	
93	RNP Authorized (1)	5.276	
94 thru 96	RNP Level of Service value (3)	5.296	
97	RNP Authorized (1)	5.276	
98 thru 100	RNP Level of Service value (3)	5.296	
101	RNP Authorized (1)	5.276	
102 thru 104	RNP Level of Service value (3)	5.296	
105 thru 118	Blank (Spacing) (14)		
119	Route Qualifier 1 (1)	5.7 Note 1	
120	Route Qualifier 2 (1)	5.7 Note 1	
121	Route Qualifier 3 (1)	5.7 Note 1	
122 thru 123	Blank (2)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: Columns 119 thru 121 (Approach Route Type Qualifiers 1, 2, and 3) are required to match the Primary Record to the Continuation Record(s). This non-standard column sorting sequence was selected to preserve the Primary Record for SID/STAR/Approach Records as much as possible as these new fields were introduced in Supplement 14.

4.2.3.6 Heliport SID/STAR/Approach Procedure Name Continuation Record

The Heliport SID/STAR/Approach Name Continuation Record contains the textual representation of the SID/STAR/Approach full procedure name as described in Section 5.139 of this document.

For SID and STAR procedures having a common portion (Route Type 2), this Continuation Record is provided for the first record of the route type 2 coding.

For SID and STAR procedures having no common portion (Route Type 2), this Continuation Record is provided for the first record of each runway transition.

For approach procedures, this Continuation Record is provided once per procedure as a Continuation to the first record of the final approach coding

Column	Field Name (Length)	Reference
1 thru 38	Fields as on Primary Record	
39	Continuation Record Number (1)	5.16
40	Application Type (1)	5.91
41 thru 118	Procedure Name (78)	5.139
119	Route Qualifier 1 (1)	5.7 Note 1
120	Route Qualifier 2 (1)	5.7 Note 1
121	Route Qualifier 3 (1)	5.7 Note 1
122 thru 123	Blank (2)	
124 thru 128	File Record Number (5)	5.31
129 thru 132	Cycle Date (4)	5.32

4.2.4   Heliport MSA (HS)

The Heliport Minimum Sector Altitude (MSA) file contains details relating to available Sector Altitudes.

4.2.4.1 Heliport MSA Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Heliport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 18	MSA Center (5)	5.144	Y
19 thru 20	ICAO Code (2)	5.14	Y
21	Section Code (1)	5.4	Y
22	Subsection Code (1)	5.5	Y
23	Multiple Code (1)	5.130	Y
24 thru 38	Reserved (Expansion) (15)		
39	Continuation Record Number (1)	5.16	Y
40 thru 42	Reserved (Spacing) (3)		
43 thru 48	Sector Bearing (6)	5.146	
49 thru 51	Sector Altitude (3)	5.147	
52 thru 53	Sector Radius (2)	5.145	
54 thru 59	Sector Bearing (6)	5.146	
60 thru 62	Sector Altitude (3)	5.147	
63 thru 64	Sector Radius (2)	5.145	
65 thru 70	Sector Bearing (6)	5.146	
71 thru 73	Sector Altitude (3)	5.147	
74 thru 75	Sector Radius (2)	5.145	
76 thru 81	Sector Bearing (6)	5.146	
82 thru 84	Sector Altitude (3)	5.147	
85 thru 86	Sector Radius (2)	5.145	
87 thru 92	Sector Bearing (6)	5.146	
93 thru 95	Sector Altitude (3)	5.147	
96 thru 97	Sector Radius (2)	5.145	
98 thru103	Sector Bearing (6)	5.146	
104 thru 106	Sector Altitude (3)	5.147	
107 thru 108	Sector Radius (2)	5.145	
109 thru 114	Sector Bearing (6)	5.146	
115 thru 117	Sector Altitude (3)	5.147	
118 thru119	Sector Radius (2)	5.145	
120	Magnetic/True Indicator (1)	5.165	
121 thru 123	Reserved (Expansion) (3)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.4.2 Heliport MSA Primary Record Extension

Column	Field Name (Length)	Reference	Required
1 thru 38	Field as on Primary Records		Y
39	Continuation Record No. (1)	5.16	Y
40	Application Type (1)	5.91	Y
41 thru 42	Reserved (Spacing) (3)		
43 thru 48	Sector Bearing (6)	5.146	
49 thru 51	Sector Altitude (3)	5.147	
52 thru 53	Sector Radius (2)	5.145	
54 thru 59	Sector Bearing (6)	5.146	
60 thru 62	Sector Altitude (3)	5.147	
63 thru 64	Sector Radius (2)	5.145	
65 thru 70	Sector Bearing (6)	5.146	
71 thru 73	Sector Altitude (3)	5.147	
74 thru 75	Sector Radius (2)	5.145	
76 thru 81	Sector Bearing (6)	5.146	
82 thru 84	Sector Altitude (3)	5.147	
85 thru 86	Sector Radius (2)	5.145	
87 thru 92	Sector Bearing (6)	5.146	
93 thru 95	Sector Altitude (3)	5.147	
96 thru 97	Sector Radius (2)	5.145	
98 thru 103	Sector Bearing (6)	5.146	
104 thru 106	Sector Altitude (3)	5.147	
107 thru 108	Sector Radius (2)	5.145	
109 thru 114	Sector Bearing (6)	5.146	
115 thru 117	Sector Altitude (3)	5.147	
118 thru 119	Sector Radius (2)	5.145	
120 thru 123	Field as on Primary Records		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.4.3 Heliport MSA Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 38	Fields as on Primary Records		Y
39	Continuation Record Number (1)	5.16	Y
40	Application Type (1)	5.91	Y
41 thru 109	Notes (69)	5.61	
110 thru 123	Reserved (Expansion) (14)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.5 Heliport Communications Records (HV)

These files will contain Heliport Communications Facilities.

4.2.5.1 Heliport Communications Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Heliport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 15	Blank (Spacing) (2)		
16 thru 19	Communication Class (4)	5.283	Y
20 thru 21	Sequence Number (2)	5.12	Y
22	Continuation Number (1)	5.16	Y
23 thru 25	Communication Types (3)	5.101	
26 thru 32	Transmit Frequency (7)	5.103	
33 thru 39	Receive Frequency (7)	5.103	
40	Frequency Units (1)	5.104	
41	Radar Units (1)	5.102	
42	H24 Indicator (1)	5.181	
43 thru 67	Call Signs (25)	5.105	
68	Multi-Sector Indicator (1)	5.286	
69 thru 74	Sectorization (6)	5.183	
75 thru 78	Sector Facility (4)	5.185	
79 thru 80	ICAO (2)	5.14	
81	Section Code (1)	5.4	
82	Subsection Code (1)	5.5	
83	Altitude Description Code (1)	5.29	
84 thru 86	Communication Altitude 1 (3)	5.184	
87 thru 89	Communication Altitude 2 (3)	5.184	
90	Distance Description Code (1)	5.187	
91 thru 92	Communication Distance (2)	5.188	
93 thru 101	Transmitter Latitude (9)	5.36	
102 thru 111	Transmitter Longitude (10)	5.37	
112 thru 114	Service Indicator (3)	5.106	
115	Modulation (1)	5.198	
116	Signal Emission (2)	5.199	
117	Time Code (1)	5.131	
118	NOTAM (1)	5.132	
119 thru 123	Blank (Spacing) (5)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.5.2 Heliport Communications Primary Extension Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1) E—Primary Record Extension	5.91	Y
24 thru 27	Remote Facility (4)	5.200	
28 thru 29	ICAO (2)	5.14	
30	Section (1)	5.4	
31	Subsection (1)	5.5	
32 thru 36	Transmitter Site Mag Var (5)	5.39	
37 thru 41	Transmitter Site Elevation (5)	5.92	
42 thru 47	Additional Sectorization 1 (6)	5.183	
48	Additional Sectorization 1 Altitude Description (1)	5.29	
49 thru 51	Additional Sectorization 1 Altitude 1 (3)	5.184	
52 thru 54	Additional Sectorization 1 Altitude 2 (3)	5.184	
55 thru 60	Additional Sectorization 2 (6)	5.183	
61	Additional Sectorization 2 Altitude Description (1)	5.29	
62 thru 64	Additional Sectorization 2 Altitude 1 (3)	5.184	
65 thru 67	Additional Sectorization 2 Altitude 2 (3)	5.184	
68 thru 123	Blank (Spacing) (56)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.5.3 Heliport Communications Sector Narrative Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1) N—Sector Narrative	5.91	Y
24 thru 83	Sectorization Narrative (60)	5.186	
84 thru 123	Reserved (Spacing) (40)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.5.4 Heliport Communications Formatted Time Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Fields as on Primary Records		Y
22	Continuation Record No. (1)	5.16	Y
23	Application Type (1) T—Formatted Time Data	5.91	Y
24	Time Code (1)	5.131	
25	NOTAM (1)	5.132	
26	Time Indicator (1)	5.138	
27 thru 29	Time Zone	5.178	
30 thru 49	Blank (Spacing) (20)		
50 thru 59	Time of Operations (10)	5.195	
60 thru 69	Time of Operations (10)	5.195	
70 thru 79	Time of Operation (10)	5.195	
80 thru 89	Time of Operation (10)	5.195	
90 thru 99	Time of Operation (10)	5.195	
100 thru 109	Time of Operation (10)	5.195	
110 thru 119	Time of Operation (10)	5.195	
120 thru 123	Reserved (Expansion) (4)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.5.5 Heliport Communications Narrative Time Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 21	Field as on Primary Record		Y
22	Continuation Record Number (1)	5.16	Y
23	Application Type (1) U—Narrative Time Data	5.91	Y
24 thru 123	Time Narrative (100)	5.285	
124 thru 128	File Record numbers (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.6 Heliport (TAA) (HK)

The Heliport Terminal Arrival Altitude (TAA) file contains details relating to TAA sectorization and sector altitudes.

4.2.6.1 Heliport TAA Primary Records (HK)

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Heliport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 19	Approach Identifier (6)	5.10	Y
20 thru 24	TAA Waypoint (5)	5.273	Y
25 thru 26	ICAO Code (2)	5.14	Y
27	Section Code (1)	5.4	Y
28	Subsection Code (1)	5.5	Y
29	TAA Fix Position Indicator (1)	5.272	Y
30	Continuation Record No. (1)	5.16	Y
31 thru 32	Blank (Spacing) (2)		
33 thru 38	Sector Bearing (6)	5.146	
39 thru 41	Sector Minimum Altitude (3)	5.147	
42 thru 45	Sector Radius 1 (4)	5.274	
46	Procedure Turn Indicator (1)	5.271	
47 thru 52	Sector Bearing (6)	5.146	
53 thru 55	Sector Minimum Altitude (3)	5.147	
56 thru 59	Sector Radius 1 (4)	5.274	
60	Procedure Turn Indicator (1)	5.271	
61 thru 66	Sector Bearing (6)	5.146	
67 thru 69	Sector Minimum Altitude (3)	5.147	
70 thru 73	Sector Radius 1 (4)	5.274	
74	Procedure Turn Indicator (1)	5.271	
75 thru 80	Sector Bearing (6)	5.146	
81 thru 83	Sector Minimum Altitude (3)	5.147	
84 thru 87	Sector Radius 1 (4)	5.274	
88	Procedure Turn Indicator (1)	5.271	
89 thru 94	Sector Bearing (6)	5.146	
95 thru 97	Sector Minimum Altitude (3)	5.147	
98 thru 101	Sector Radius 1 (4)	5.274	
102	Procedure Turn Indicator (1)	5.271	
103 thru 107	Sector Bearing Reference Waypoint (5)	5.304	
108 thru 109	ICAO Code (2)	5.14	
110	Section Code (1)	5.4	
111	Subsection Code (1)	5.5	
112 thru 116	Blank (5)		
117	Procedure Design Aircraft Category or Type (1)	5.301	
118	Approach Route Qualifier 1 (1)	5.7	
119	Approach Route Qualifier 2 (1)	5.7	
120	Mag/True Indicator (1)	5.165	
121 thru 123	Blank (Spacing) (3)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.6.2 Heliport Terminal Arrival Altitude Continuation Records (HK)

Column	Field Name (Length)	Reference	Required

1 thru 30	Fields as on Primary Records		Y
31	Application Type Users (1)	5.91	Y
32	Blank (Spacing) (1)		
33 thru 38	Sector Bearing (6)	5.146	
39 thru 41	Sector Minimum Altitude (3)	5.147	
42 thru 45	Sector Radius 1 (4)	5.274	
46	Procedure Turn Indicator (1)	5.271	
47 thru 52	Sector Bearing (6)	5.146	
53 thru 55	Sector Minimum Altitude (3)	5.147	
56 thru 59	Sector Radius 1 (4)	5.274	
60	Procedure Turn Indicator (1)	5.271	
61 thru 66	Sector Bearing (6)	5.146	
67 thru 69	Sector Minimum Altitude (3)	5.147	
70 thru 73	Sector Radius 1 (4)	5.274	
74	Procedure Turn Indicator (1)	5.271	
75 thru 80	Sector Bearing (6)	5.146	
81 thru 83	Sector Minimum Altitude (3)	5.147	
84 thru 87	Sector Radius 1 (4)	5.274	
88	Procedure Turn Indicator (1)	5.271	
89 thru 109	Notes (21)	5.61	
110 thru 116	Reserved (Expansion) (7)		
117	Procedure Design Aircraft Category or Type (1)	5.301	
118	Approach Route Qualifier 1 (1)	5.7	
119	Approach Route Qualifier 2 (1)	5.7	
120 thru 123	Blank (4)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.7 Helicopter Operations Company Route Records (RH)

This file contains company tailored route information for helicopter operations.

4.2.7.1 Helicopter Operations Company Route Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Subsection Code (1)	5.5	Y
7 thru 11	From Airport Heliport/Fix (5)	5.75	Y
12 thru 16	Helipad Ident (5)	5.180	Y
17	Blank (Spacing) (1)		
18 thru 19	ICAO Code (2)	5.14	Y
20	Section Code (1)	5.4	Y
21	Subsection Code (1)	5.5	Y
22 thru 26	To Airport/Heliport/Fix (5)	5.75	Y
27 thru 31	Helipad Ident (5)	5.180	Y
32	Blank (Spacing) (1)		
33 thru 34	ICAO Code (2)	5.14	Y
35	Section Code (1)	5.4	Y
36	Subsection Code (1)	5.5	Y
37 thru 46	Company Route ID (10)	5.76	Y
47 thru 49	Sequence No. (3)	5.12	Y
50 thru 52	VIA Code (3)	5.77	Y
53 thru 58	SID/STAR/App/Awy (6)	5.78	
59	Section Code (1)	5.4	
60	Subsection Code (1)	5.5	
61	SID/STAR/App/Awy Route Type (1)	5.7	
62	S/S/A Route Type Qualifier 1 (1)	5.7	
63	S/S/A Route Type Qualifier 2 (1)	5.7	
64 thru 66	Area Code (3)	5.3	
67 thru 72	To Fix (6)	5.83	
73 thru 74	ICAO Code (2)	5.14	
75	Section Code (1)	5.4	
76	Subsection Code (1)	5.5	
77 thru 81	Runway/Helipad Transition ID (5)	5.84	
82 thru 86	Enroute Transition ID (5)	5.85	
87	Reserved (1)		
88 thru 92	Cruise Altitude (5)	5.86	
93 thru 96	Terminal/Alternate Heliport (4)	5.87	
97 thru 98	ICAO Code (2)	5.14	
99	Section Code (1)	5.4	
100	Subsection Code (1)	5.5	
101 thru 104	Alternate Distance (4)	5.88	
105 thru 107	Cost Index (3)	5.89	
108 thru 111	Enroute Alternate Heliport (4)	5.148	
112 thru 123	Reserved (Expansion) (12)		
124 thru 128	File Record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: This Helicopter Operations Company Route Record is defined for use with rotor wing aircraft operating at airports using helicopter operations procedures to/from runways, at heliports and from/to helipads at airports. Heliports referenced will be in Section/Subsection HA. Terminal Procedures referenced will be in Section/Subsection PD/PE/PF for helicopter operations from/to runways at airports (Section/Subsection PG) or in Section/Subsection HD/HE/HF for helicopter operations from/to

heliports or helipads at airports (Section/Subsection HA). For fixed wing Aircraft Company routes, see Section 4.1.12.

4.2.8   Helicopter Operations SBAS Path Point Records (HP)

This file will contain Helicopter Operations SBAS Path Point Records for RNAV GPS (SBAS) Approach Procedures.

4.2.8.1   Helicopter Operations SBAS Path Point Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (1)		
7 thru 10	*Airport or Heliport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 19	Approach Procedure Ident (6)	5.10	Y
20 thru 24	*Runway ~~Indentifier~~Identifier or Final Approach Course As Runway (5)	5.46 or 5.300	
25 thru 26	*Operation Type (2)	5.223	
27	Continuation Record Number (1)	5.16	
28	*Route Indicator (1)	5.224	
29 thru 30	*SBAS Service Provider Identifier (2)	5.255	
31 thru 32	*Reference Path Data Selector (2)	5.256	
33 thru 36	*Reference Path Identifier (4)	5.257	
37	*Approach Performance Designator (1)	5.258	
38 thru 48	*Fictitious Threshold Point Latitude (11)	5.267	
49 thru 60	*Fictitious Threshold Point Longitude (12)	5.268	
61 thru 66	*(FTP) Ellipsoid Height (6)	5.225	
67 thru 70	*Glide Path Angle (4)	5.226	
71 thru 81	*Flight Path Alignment Point Latitude (11)	5.267	
82 thru 93	*Flight Path Alignment Point Longitude (12)	5.268	
94 thru 98	*Course Width at Threshold (5)	5.228	
99 thru 102	*Length Offset (4)	5.259	
103 thru 108	*Path Point TCH (6)	5.265	
109	*Path Point TCH Units Indicator (1)	5.266	
110 thru 112	*HAL (3)	5.263	
113 thru 115	*VAL (3)	5.264	
116 thru 123	SBAS FAS Data CRC Remainder (8)	5.229	
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

Note 1: In the Airport and Helicopter Operations SBAS Path Point Record description, the field prefixed with * in the Field Name are those columns that have been determined as required for the data wrap for CRC calculations.

Note 2: In order to properly convert values and binary pack these fields for the CRC data wrap, refer to RTCA DO-229 Minimum Operational Performance Standards for Global Positioning System/Wide Area Augmentation System Airborne Equipment for Final Approach Segment (FAS) Data Block CRC standards.

4.2.8.2   Helicopter Operations SBAS Path Point Continuation Records

Column	Field Name (Length)	Reference	Required
1 thru 26	Fields as on Primary Record Type		Y
27	Continuation Record Number (1)	5.16	Y
28	Application Type (1)	5.91	Y
29 thru 34	(FPAP) Ellipsoid Height (6)	5.225	
35 thru 40	(FPAP) Orthometric Height (6)	5.227	
41 thru 46	(FTP) Orthometric Height (6)	5.227	
47 thru 56	Approach Type Identifier (10)	5.262	
57 thru 61	GBAS/SBAS Channel Number (5)	5.244	
62 thru 71	Blank (Spacing) (10)		
72 thru 74	Helicopter Procedure Course (3)	5.269	
75 thru 123	Blank (Spacing) (49)		
124 thru 128	File Record Number (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y

4.2.9   Heliport Helipad Record (HH)

This file will contain a listing of all helipads associated with heliports.

4.2.9.1 Heliport Helipad Primary Records

Column	Field Name (Length)	Reference	Required
1	Record Type (1)	5.2	Y
2 thru 4	Customer/Area Code (3)	5.3	Y
5	Section Code (1)	5.4	Y
6	Blank (Spacing) (1)		
7 thru 10	Heliport Identifier (4)	5.6	Y
11 thru 12	ICAO Code (2)	5.14	Y
13	Subsection Code (1)	5.5	Y
14 thru 18	Helipad Identifier (5)	5.180	Y
19 thru 21	Blank (Spacing) (3)		
22	Continuation Record No. (1)	5.16	Y
23	Helipad Shape (1)	5.303	
24 thru 31	Helipad Dimension (8)	5.176	
32	Reserved (Expansion) (1)		
33 thru 41	Helipad Latitude (9)	5.36	
42 thru 51	Helipad Longitude (10)	5.37	
52	Helipad Surface Code (1)	5.249	
53 thru 56	Helipad Surface Type (4)	5.302	
57 thru 59	Max Allowable Helicopter Weight (3)	5.309	
60	Helicopter Performance Requirement (1)	5.310	
61 thru 63	Helipad Maximum Rotor Diameter (3)	5.321	
64	Helipad Type (1)	5.322	
65	Reserved (Expansion) (1)		
66 thru 70	Helipad Elevation (5)	5.68	
71 thru 78	Helipad FATO Dimension (8)	5.176	
79 thru 86	Safety Area Dimension (8)	5.176	
87 thru 91	Helipad Orientation (5)	5.323	
92 thru 96	Helipad Identifier Orientation (5)	5.324	
97 thru 100	Preferred Approach Bearing 1 (4)	5.325	
101 thru 104	Preferred Approach Bearing 2 (4)	5.325	
105 thru 123	Reserved (Expansion) (17)		
124 thru 128	File record No. (5)	5.31	Y
129 thru 132	Cycle Date (4)	5.32	Y