

**BELIZE**

**DEPARTMENT OF**

**CIVIL AVIATION**



**BELIZE CIVIL AVIATION REGULATIONS**

**AERONAUTICAL INFORMATION**

**SERVICES**

**BCAR 15**

First issue  
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Date: 10/05/2013

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**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**BCAR 15**

**Issue and Revision System**

**THE REVISIONS TO THIS REGULATION WILL BE INDICATED BY A VERTICAL BAR ON THE LEFT SIDE, IN FRONT OF THE LINE, SECTION OR FIGURE THAT HAS BEEN AFFECTED. AN ISSUE WILL BE THE REPLACEMENT OF THE COMPLETE DOCUMENT.**

**THESE REVISIONS MUST BE RECORDED ON THE RECORD OF REVISIONS TABLE OF THIS DOCUMENT, INDICATING THE RESPECTIVE NUMBER, DATE IT WAS ENTERED AND SIGNED BY THE PERSON ENTERING THE REVISION.**









**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**BCAR 15**

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**Preamble.**

The BCAR 15 was emitted on May 2010 and it was developed based on ICAO's Annex 15, thirteenth edition of July 2010, amendment 36 dated 12 July 2010.







**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**BCAR 15**

**List of effective pages**

| <b>PAGE NUMBER</b> | <b>REVISION NUMBER</b> | <b>DATE</b> |
|--------------------|------------------------|-------------|
| Front Cover        | First Issue            | 10/05/2013  |
| IRS-1              | First Issue            | 10/05/2013  |
| RR-1               | First Issue            | 10/05/2013  |
| P-1                | First Issue            | 10/05/2013  |
| LEP-1              | First Issue            | 10/05/2013  |
| LEP-2              | First Issue            | 10/05/2013  |
| TC-1               | First Issue            | 10/05/2013  |
| TC-2               | First Issue            | 10/05/2013  |
| TC-3               | First Issue            | 10/05/2013  |
| TC-4               | First Issue            | 10/05/2013  |
| <b>SECTION 1</b>   |                        |             |
| 1-0-1              | First Issue            | 10/05/2013  |
| 1-0-2              | First Issue            | 10/05/2013  |
| 1LA-1              | First Issue            | 10/05/2013  |
| 1LA-2              | First Issue            | 10/05/2013  |
| <b>Subpart A</b>   |                        |             |
| 1-A1               | First Issue            | 10/05/2013  |
| <b>Subpart B</b>   |                        |             |
| 1-B-1              | First Issue            | 10/05/2013  |
| 1-B-2              | First Issue            | 10/05/2013  |
| 1-B-3              | First Issue            | 10/05/2013  |
| 1-B-4              | First Issue            | 10/05/2013  |
| 1-B-5              | First Issue            | 10/05/2013  |
| <b>SubpartC</b>    |                        |             |
| 1-C-1              | First Issue            | 10/05/2013  |
| 1-C-2              | First Issue            | 10/05/2013  |
| 1-C-3              | First Issue            | 10/05/2013  |
| 1-C-4              | First Issue            | 10/05/2013  |
| 1-C-5              | First Issue            | 10/05/2013  |
| 1-C-6              | First Issue            | 10/05/2013  |
| <b>SubpartD</b>    |                        |             |
| 1-D-1              | First Issue            | 10/05/2013  |
| 1-D-2              | First Issue            | 10/05/2013  |
| 1-D-3              | First Issue            | 10/05/2013  |
| <b>SubpartE</b>    |                        |             |
| 1-E-1              | First Issue            | 10/05/2013  |
| 1-E-2              | First Issue            | 10/05/2013  |
| 1-E-3              | First Issue            | 10/05/2013  |
| 1-E-4              | First Issue            | 10/05/2013  |
| <b>Subpart F</b>   |                        |             |

| <b>PAGE NUMBER</b> | <b>REVISION NUMBER</b> | <b>DATE</b> |
|--------------------|------------------------|-------------|
| 1-F-1              | First Issue            | 10/05/2013  |
| <b>Subpart G</b>   |                        |             |
| 1-G-1              | First Issue            | 10/05/2013  |
| 1-G-2              | First Issue            | 10/05/2013  |
| <b>Subpart H</b>   |                        |             |
| 1-H-1              | First Issue            | 10/05/2013  |
| 1-H-2              | First Issue            | 10/05/2013  |
| <b>Subpart I</b>   |                        |             |
| 1-I-1              | First Issue            | 10/05/2013  |
| <b>Subpart J</b>   |                        |             |
| 1-J-1              | First Issue            | 10/05/2013  |
| 1-J-2              | First Issue            | 10/05/2013  |
| 1-J-3              | First Issue            | 10/05/2013  |
| <b>APPENDICES</b>  |                        |             |
| 1-APP-1            | First Issue            | 10/05/2013  |
| 1-APP-2            | First Issue            | 10/05/2013  |
| <b>APPENDIX 1</b>  |                        |             |
| 1-APP1-1           | First Issue            | 10/05/2013  |
| 1-APP1-2           | First Issue            | 10/05/2013  |
| 1-APP1-3           | First Issue            | 10/05/2013  |
| 1-APP1-4           | First Issue            | 10/05/2013  |
| 1-APP1-5           | First Issue            | 10/05/2013  |
| 1-APP1-6           | First Issue            | 10/05/2013  |
| 1-APP1-7           | First Issue            | 10/05/2013  |
| 1-APP1-8           | First Issue            | 10/05/2013  |
| 1-APP1-9           | First Issue            | 10/05/2013  |
| 1-APP1-10          | First Issue            | 10/05/2013  |
| 1-APP1-11          | First Issue            | 10/05/2013  |
| 1-APP1-12          | First Issue            | 10/05/2013  |
| 1-APP1-13          | First Issue            | 10/05/2013  |
| 1-APP1-14          | First Issue            | 10/05/2013  |
| 1-APP1-15          | First Issue            | 10/05/2013  |
| 1-APP1-16          | First Issue            | 10/05/2013  |
| 1-APP1-17          | First Issue            | 10/05/2013  |
| 1-APP1-18          | First Issue            | 10/05/2013  |
| 1-APP1-19          | First Issue            | 10/05/2013  |
| 1-APP1-20          | First Issue            | 10/05/2013  |
| 1-APP1-21          | First Issue            | 10/05/2013  |
| 1-APP1-22          | First Issue            | 10/05/2013  |
| 1-APP1-23          | First Issue            | 10/05/2013  |
| 1-APP1-24          | First Issue            | 10/05/2013  |
| 1-APP1-25          | First Issue            | 10/05/2013  |
| 1-APP1-26          | First Issue            | 10/05/2013  |
| 1-APP1-27          | First Issue            | 10/05/2013  |



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**BCAR 15**

| PAGE NUMBER       | REVISION NUMBER | DATE       |
|-------------------|-----------------|------------|
| 1-APP1-28         | First Issue     | 10/05/2013 |
| 1-APP1-29         | First Issue     | 10/05/2013 |
| <b>APPENDIX 2</b> |                 |            |
| 1-APP2-1          | First Issue     | 10/05/2013 |
| <b>APPENDIX 3</b> |                 |            |
| 1-APP3-1          | First Issue     | 10/05/2013 |
| 1-APP3-2          | First Issue     | 10/05/2013 |
| 1-APP3-3          | First Issue     | 10/05/2013 |
| 1-APP3-4          | First Issue     | 10/05/2013 |
| <b>APPENDIX 4</b> |                 |            |
| 1-APP4-1          | First Issue     | 10/05/2013 |
| 1-APP4-2          | First Issue     | 10/05/2013 |
| <b>APPENDIX 5</b> |                 |            |
| 1-APP5-1          | First Issue     | 10/05/2013 |
| <b>APPENDIX 6</b> |                 |            |
| 1-APP6-1          | First Issue     | 10/05/2013 |
| 1-APP6-2          | First Issue     | 10/05/2013 |
| 1-APP6-3          | First Issue     | 10/05/2013 |
| 1-APP6-4          | First Issue     | 10/05/2013 |
| <b>APPENDIX 7</b> |                 |            |
| 1-APP7-1          | First Issue     | 10/05/2013 |
| 1-APP7-2          | First Issue     | 10/05/2013 |
| 1-APP7-3          | First Issue     | 10/05/2013 |
| 1-APP7-4          | First Issue     | 10/05/2013 |
| 1-APP7-5          | First Issue     | 10/05/2013 |
| <b>SECTION 2</b>  |                 |            |
| 1-0-1             | First Issue     | 10/05/2013 |
| 1-0-2             | First Issue     | 10/05/2013 |
| <b>Subpart A</b>  |                 |            |
| 2-A-1             | First Issue     | 10/05/2013 |
| <b>SubpartB</b>   |                 |            |
| 2-B-1             | First Issue     | 10/05/2013 |
| 2-B-2             | First Issue     | 10/05/2013 |
| 2-B-3             | First Issue     | 10/05/2013 |
| 2-B-4             | First Issue     | 10/05/2013 |
| <b>SubpartC</b>   |                 |            |
| 2-C-1             | First Issue     | 10/05/2013 |
| 2-C-2             | First Issue     | 10/05/2013 |
| 2-C-3             | First Issue     | 10/05/2013 |
| 2-C-4             | First Issue     | 10/05/2013 |
| <b>SubpartD</b>   |                 |            |
| 2-D-1             | First Issue     | 10/05/2013 |
| 2-D-2             | First Issue     | 10/05/2013 |
| <b>SubpartE</b>   |                 |            |
| 2-E-1             | First Issue     | 10/05/2013 |
| 2-E-2             | First Issue     | 10/05/2013 |
| <b>SubpartF</b>   |                 |            |

| PAGE NUMBER     | REVISION NUMBER | DATE       |
|-----------------|-----------------|------------|
| 2-F-1           | First Issue     | 10/05/2013 |
| <b>SubpartG</b> |                 |            |
| 2-G-1           | First Issue     | 10/05/2013 |
| <b>SubpartH</b> |                 |            |
| 2-H-1           | First Issue     | 10/05/2013 |
| <b>SubpartI</b> |                 |            |
| 2-I-1           | First Issue     | 10/05/2013 |
| <b>SubpartJ</b> |                 |            |
| 2-J-1           | First Issue     | 10/05/2013 |
| 2-J-2           | First Issue     | 10/05/2013 |

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BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES

BCAR 15

Table of Contents

|  |       |
|--|-------|
| Issue and Revision System .....  | Page  |
| Record of Revisions.....   | IRS-1 |
| Preamble.....  | RR-1  |
| List of effective pages.....   | P-1   |
| Table of Contents .....  | LEP-1 |
| SECTION 1-REQUIREMENTS .....   | TC-1  |
| SECTION 1-REQUIREMENTS .....   | S-O-1 |
| List of Acronyms: .....  | LA-1  |
| SUBPART A .....  | 1-A-1 |
| CHAPTER 1 - INTRODUCTION.....  | 1-A-1 |
| BCAR 15 1.0 INTRODUCTION .....   | 1-A-1 |
| SUBPART B .....  | 1-B-1 |
| CHAPTER 2 - Definitions .....  | 1-B-1 |
| BCAR 15 2.0 Definitions .....  | 1-B-1 |
| SUBPART C .....  | 1-C-1 |
| CHAPTER 3 - GENERAL .....  | 1-C-1 |
| BCAR 15 3.1.1 Responsibilities and functions .....   | 1-C-1 |
| BCAR 15 3.1.2 Aeronautical Information Service before and during the flight.....             | 1-C-1 |
| BCAR 15 3.2 Quality management system .....  | 1-C-1 |
| BCAR 15 3.3 Exchange of aeronautical information/data .....                                  | 1-C-3 |
| BCAR 15 3.4 Copyright .....  | 1-C-3 |
| BCAR 15 3.5 Cost recovery .....  | 1-C-4 |
| BCAR 15 3.6 General specifications .....   | 1-C-4 |
| BCAR 15 3.6.4 Use of ICAO abbreviations ICAO .....   | 1-C-4 |
| BCAR 15 3.6.5 Use of automation .....  | 1-C-4 |
| BCAR 15 3.6.6 Identification and delineation of prohibited, restricted and danger areas..... | 1-C-4 |
| BCAR 15 3.6.7 Human Factors considerations.....  | 1-C-4 |
| BCAR 15 3.7 Common reference systems for air navigation.....                                 | 1-C-4 |
| BCAR 15 3.7.1 Horizontal reference system.....   | 1-C-5 |
| BCAR 15 3.7.2 Vertical reference system.....   | 1-C-5 |
| BCAR 15 3.7.3 Temporal reference system.....   | 1-C-5 |
| BCAR 15 3.8 Metadata.....  | 1-C-5 |
| SUBPART D .....  | 1-D-1 |
| CHAPTER 4 - AERONAUTICAL INFORMATION.....  | 1-D-1 |
| BCAR 15 4.1 Contents .....   | 1-D-1 |
| BCAR 15 4.2 General specifications .....   | 1-D-1 |
| BCAR 15 4.3 Specifications for AIP Amendments .....  | 1-D-2 |
| BCAR 15 4.4 Specifications for AIP Supplements .....   | 1-D-3 |
| BCAR 15 4.5 Distribution.....  | 1-D-3 |
| BCAR 15 4.6 Electronic AIP (eAIP).....   | 1-D-3 |
| SUBPART E .....  | 1-E-1 |
| CHAPTER 5 - NOTAM .....  | 1-E-1 |
| BCAR 15 5.1 Origination .....  | 1-E-1 |
| BCAR 15 5.2 General specifications .....   | 1-E-3 |
| BCAR 15 5.2.3 RESERVED .....   | 1-E-3 |



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**BCAR 15**

|  |       |
|--|-------|
| BCAR 15 5.3 Distribution.....  | 1-E-4 |
| SUBPART F .....  | 1-F-1 |
| CHAPTER 6 - AERONAUTICAL INFORMATION REGULATION AND CONTROL (AIRAC).....                       | 1-F-1 |
| BCAR 15 6.1 General specifications .....   | 1-F-1 |
| BCAR 15 6.2 Provision of information in paper copy form .....                                  | 1-F-1 |
| BCAR 15 6.3 Provision of information in electronic form .....                                  | 1-F-1 |
| SUBPART G .....  | 1-G-1 |
| CHAPTER 7 - AERONAUTICAL INFORMATION CIRCULARS (AIC).....                                      | 1-G-1 |
| BCAR 15 7.1 Origination .....  | 1-G-1 |
| BCAR 15 7.1.1.2 Reserved .....   | 1-G-1 |
| BCAR 15 7.2 General specifications .....   | 1-G-1 |
| BCAR 15 7.3 Distribution.....  | 1-G-2 |
| SUBPART H .....  | 1-H-1 |
| CHAPTER 8 - PRE-FLIGHT AND POST-FLIGHT .....   | 1-H-1 |
| BCAR 15 8.1 Pre-flight information .....   | 1-H-1 |
| BCAR 15 8.2 Automated aeronautical information systems .....                                   | 1-H-1 |
| BCAR 15 8.3 Post-flight information .....  | 1-H-2 |
| SUBPART I .....  | 1-I-1 |
| CHAPTER 9 - TELECOMMUNICATION REQUIREMENTS.....  | 1-I-1 |
| SUBPART J .....  | 1-J-1 |
| CHAPTER 10 - ELECTRONIC TERRAIN AND OBSTACLE DATA.....   | 1-J-1 |
| SECTION 2 – ADVISORY CIRCULARS .....   | 2-0-2 |
| SUBPART A .....  | 2-A-1 |
| CHAPTER 1 - INTRODUCTION.....  | 2-A-1 |
| IEM 15 1.0 Introduction.....   | 2-A-1 |
| SUBPART B .....  | 2-B-1 |
| CHAPTER 2 - DEFINITIONS.....   | 2-B-1 |
| IEM 15 2.0 Definitions.....  | 2-B-1 |
| SUBPART C .....  | 2-C-1 |
| CHAPTER 3 - GENERAL .....  | 2-C-1 |
| IEM 15 3.1.2 Aeronautical Information Service before and during the flight.....                | 2-C-1 |
| IEM 15 3.2.2 Quality management system .....   | 2-C-1 |
| IEM 15 3.2.3 Quality management system .....   | 2-C-1 |
| IEM 15 3.2.10 Quality management system .....  | 2-C-1 |
| IEM 15 3.2.12 Quality management system .....  | 2-C-2 |
| IEM 15 3.2.13 Quality management system .....  | 2-C-2 |
| IEM 15 3.2.14 Quality management system .....  | 2-C-2 |
| IEM 15 3.5 Cost recovery.....  | 2-C-2 |
| IEM 15 3.6.5 Use of automation.....  | 2-C-2 |
| IEM 15 3.6.6.2 Identification and delineation of prohibited, restricted and danger areas ..... | 2-C-2 |
| IEM 15 3.6.7.2 Human Factors considerations .....  | 2-C-2 |
| IEM 15 3.7.1.1 Horizontal reference system .....   | 2-C-3 |
| IEM 15 3.7.1.2 Horizontal reference system .....   | 2-C-3 |
| IEM 15 3.7.2.1 Vertical reference system .....   | 2-C-3 |



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**BCAR 15**

|   |   |       |
|---|---|-------|
| IEM 15 3.7.2.2  | Vertical reference system .....                   | 2-C-3 |
| IEM 15 3.7.2.3  | Vertical reference system .....                   | 2-C-4 |
| IEM 15 3.7.3.1  | Temporal reference system .....                   | 2-C-4 |
| IEM 15 3.7.3.2  | temporal reference system .....                   | 2-C-4 |
| IEM 15 3.8.2  | Metadata .....                                    | 2-C-4 |
| SUBPART D   | .....   | 2-D-1 |
| CHAPTER 4 - AERONAUTICAL INFORMATION                                | .....   | 2-D-1 |
| IEM 15 4  | AERONAUTICAL INFORMATION PUBLICATIONS (AIP).....  | 2-D-1 |
| IEM 15 4.1.3  | Contents.....                                     | 2-D-1 |
| IEM 15 4.1.4  | Contents.....                                     | 2-D-1 |
| IEM 15 4.2  | General specifications.....                       | 2-D-1 |
| IEM 15 4.2.9.1  | General specifications.....                       | 2-D-1 |
| IEM 15 4.4.1  | Specifications for AIP Supplements.....           | 2-D-1 |
| IEM 15 4.4.4  | Specifications for AIP Supplements.....           | 2-D-1 |
| IEM 15 4.6.1  | Electronic AIP (eAIP) .....                       | 2-D-2 |
| IEM 15 4.6.3  | Electronic AIP (eAIP) .....                       | 2-D-2 |
| SUBPART E   | .....   | 2-E-1 |
| CHAPTER 5 - NOTAM   | .....   | 2-E-1 |
| IEM 15 5.1.1  | Origination.....                                  | 2-E-1 |
| IEM 15 5.1.1.1  | Origination.....                                  | 2-E-1 |
| IEM 15 5.1.1.4.1  | Origination.....                                  | 2-E-1 |
| IEM 15 5.1.1.6  | Origination.....                                  | 2-E-1 |
| IEM 15 5.2.2  | General specifications.....                       | 2-E-1 |
| IEM 15 5.2.2.1  | General specifications.....                       | 2-E-1 |
| IEM 15 5.2.5  | General specifications.....                       | 2-E-1 |
| IEM 15 5.2.8  | General specifications.....                       | 2-E-1 |
| IEM 15 5.2.13   | General specifications.....                       | 2-E-2 |
| IEM 15 5.3.3.1  | Distribution .....                                | 2-E-2 |
| SUBPART F   | .....   | 2-F-1 |
| CHAPTER 6 - AERONAUTICAL INFORMATION REGULATION AND CONTROL (AIRAC) | .....   | 2-F-1 |
| IEM 15 6.1.1  | General specifications.....                       | 2-F-1 |
| IEM 15 6.1.1  | Provision of information in paper copy form ..... | 2-F-1 |
| IEM 15 6.3.3  | Provision of information in paper copy form ..... | 2-F-1 |
| SUBPART G   | .....   | 2-G-1 |
| CHAPTER 7 - AERONAUTICAL INFORMATION CIRCULARS (AIC)                | .....   | 2-G-1 |
| IEM 15 7.1.1.1  | Origination.....                                  | 2-G-1 |
| IEM 15 7.2.1.   | General specifications.....                       | 2-G-1 |
| IEM 15 7.2.1.4  | General specifications.....                       | 2-G-1 |
| SUBPART H   | .....   | 2-H-1 |
| CHAPTER 8 - PRE-FLIGHT AND POST-FLIGHT INFORMATION/DATA             | .....   | 2-H-1 |
| IEM 15 8.1.2  | Pre-flight information.....                       | 2-H-1 |
| IEM 15 8.1.3  | Pre-flight information.....                       | 2-H-1 |
| IEM 15 8.2.3  | Automated aeronautical information systems.....   | 2-H-1 |
| IEM 15 8.2.5  | Automated aeronautical information systems.....   | 2-H-1 |
| IEM 15 8.3.2  | Post-flight information .....                     | 2-H-1 |
| SUBPART I   | .....   | 2-I-1 |



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**BCAR 15**

---

|  |       |
|--|-------|
| CHAPTER 9 - TELECOMMUNICATION REQUIREMENTS .....                                     | 2-I-1 |
| IEM 15 9.3 TELECOMMUNICATION REQUIREMENTS.....                                       | 2-I-1 |
| SUBPART J .....  | 2-J-1 |
| CHAPTER 10 - ELECTRONIC TERRAIN AND OBSTACLE DATA.....                               | 2-J-1 |
| IEM 15 10 ELECTRONIC TERRAIN AND OBSTACLE DATA .....                                 | 2-J-1 |
| IEM 15 10.1 Coverage areas and requirements for data provision .....                 | 2-J-1 |
| IEM 15 10.1.1 Coverage areas and requirements for data provision .....               | 2-J-1 |
| IEM 15 10.1.5 Coverage areas and requirements for data provision .....               | 2-J-1 |
| IEM 15 10.1.8 Coverage areas and requirements for data provision .....               | 2-J-1 |
| IEM 15 10.2.1 Terrain data set — content, numerical specification and structure..... | 2-J-2 |
| IEM 15 10.3 Obstacle data set — content, numerical specification and structure.....  | 2-J-2 |
| IEM 15 10.4.2 Terrain and obstacle data product specifications .....                 | 2-J-2 |
| IEM 15 10.4.5 Terrain and obstacle data product specifications .....                 | 2-J-2 |
| IEM 15 10.4.6 Terrain and obstacle data product specifications .....                 | 2-J-2 |
| IEM 15 10.4.8 Terrain and obstacle data product specifications .....                 | 2-J-2 |
| IEM 15 10.4.8 Terrain and obstacle data product specifications .....                 | 2-J-2 |



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

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**SECTION 1-REQUIREMENTS**

Presentation and generalities

**1 PRESENTATION**

1.1 Section one of BCAR 15 is presented in double columns. Each page is identified by its edition or amendment date that was incorporated.

1.2 This section Font is arial 10.

**2 INTRODUCCIÓN**

2.1.1 This document contains the requirements for the development and applicability of the Aeronautical Information Services.

2.2 This document is based on ICAO's Annex 15 text, 36<sup>th</sup> amendment, 12 July 2010, issued and published by the International Civil Aviation Organization (ICAO).

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**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**List of Acronyms:**

|                  |  |
|------------------|--|
| ADS-B:           | Automatic dependent surveillance-Broadcast                   |
| ADS-C:           | Automatic dependent surveillance– contract                   |
| AFS:             | Aeronautical fixed service                                   |
| AMSL:            | Above mean sea level   |
| AIP:             | Aeronautical information publication                         |
| ATC:             | Air traffic control  |
| ATS:             | Air traffic services   |
| BDCA:            | Belize Department of Civil Aviation                          |
| CAA:             | Civil Aviation Authority                                     |
| CPDLC:           | Controller-pilot data link communications                    |
| CENAMER Control: | Centroamerica Control  |
| COCESNA:         | Corporación Centroamericana de Servicios de navegación Aérea |
| CRC:             | Cyclic redundancy check                                      |
| ETOPS:           | Extended-Twin-Engine Operational Performance Standards       |
| ft:              | Feet   |
| IEM:             | Interpretative and explanatory material                      |
| IMC:             | Instrument meteorological conditions                         |
| Kg:              | Kilograms  |
| Kt:              | Knots  |
| Km/h:            | kilometers per hour  |
| m:               | meters   |
| Mhz:             | Megahertz  |
| NM:              | Nautical miles   |
| RCP:             | Required communication performance                           |
| RNAV:            | Area navigation  |



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

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|       |                                     |
|-------|-------------------------------------|
| RNP:  | Required navigation performance     |
| RVR:  | Runway visual range                 |
| RVSM: | Reduced vertical separation minimum |
| SMR:  | Surface movement radar              |
| SSR:  | Secondary Surveillance Radar        |
| VAAC: | Volcanic ash advisory center        |
| VTOL: | vertical take-off and landing       |

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**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

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**SUBPART A**

**CHAPTER 1 - INTRODUCTION**

**BCAR 15 1.0 INTRODUCTION**

[\(See IEM 15 1.0\)](#)

The object of the BCAR 15, aeronautical information service is to ensure the flow of information/data necessary for the safety, regularity and efficiency of international air navigation. The role and importance of aeronautical information/data changed significantly with the implementation of area navigation (RNAV), performance-based navigation (PBN), airborne computer-based navigation systems and data link systems. Corrupt or erroneous aeronautical information/data can potentially affect the safety of air navigation.

These BCAR are to be used in conjunction with the Procedures for Air Navigation Services — ICAO Abbreviations and Codes (PANS-ABC, Doc 8400).

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**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**SUBPART B**

**CHAPTER 2 - Definitions**

**BCAR 15 2.0 Definitions**

When the following terms are used in this regulation, they shall have the following meanings:

**Accuracy.** A degree of conformance between the estimated or measured value and the true value.  
(See IEM 15 2.0).

**Aerodrome.** A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

**Aeronautical data.** A representation of aeronautical facts, concepts or instructions in a formalized manner suitable for communication, interpretation or processing.

**Aeronautical information.** Information resulting from the assembly, analysis and formatting of aeronautical data.

**Aeronautical Information Circular (AIC).** A notice containing information that does not qualify for the origination of a NOTAM or for inclusion in the AIP, but which relates to flight safety, air navigation, technical, administrative or legislative matters.

**Aeronautical Information Publication (AIP).** A publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.

**Aeronautical information service (AIS).** A service established within the defined area of coverage responsible for the provision of aeronautical information/data necessary for the safety, regularity and efficiency of air navigation.

**AIP Amendment.** Permanent changes to the information contained in the AIP.

**AIP Supplement.** Temporary changes to the information contained in the AIP which are published by means of special pages.

**AIRAC.** An acronym (aeronautical information regulation and control) signifying a system aimed at advance notification based on common effective dates, of circumstances that necessitate significant changes in operating practices.

**Air defence identification zone (ADIZ).** Special designated airspace of defined dimensions within which aircraft are required to comply with special identification and/or reporting procedures additional to those related to the provision of air traffic services (ATS).

**AIS product.** Aeronautical information provided in the form of the elements of the Integrated Aeronautical Information Package (except NOTAM and PIB), including aeronautical charts, or in the form of suitable electronic media.

**Application.** Manipulation and processing of data in support of user requirements (ISO 19104\*).  
(See IEM 15 2.0).

**Area navigation (RNAV).** A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.  
(See IEM 15 2.0).

**ASHTAM.** A special series NOTAM notifying by means of a specific format change in activity of a volcano, a volcanic eruption and/or volcanic ash cloud that is of significance to aircraft operations.

**Assemble.** A process of merging data from multiple sources into a database and establishing a baseline for subsequent processing.  
(See IEM 15 2.0).

**ATS surveillance service.** Term used to indicate a service provided directly by means of an ATS surveillance system.

**ATS surveillance system.** A generic term meaning variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of aircraft.  
(See IEM 15 2.0).



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**Automatic dependent surveillance — broadcast (ADS-B).** A means by which aircraft, aerodrome vehicles and other objects can automatically transmit and/or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link.

**Automatic dependent surveillance — contract (ADS-C).** A means by which the terms of an ADS-C agreement will be exchanged between the ground system and the aircraft, via a data link, specifying under what conditions ADS-C reports would be initiated, and what data would be contained in the reports.  
(See IEM 15 2.0).

**Automatic terminal information service (ATIS).** The automatic provision of current, routine information to arriving and departing aircraft throughout 24 hours or a specified portion thereof:

Data link-automatic terminal information service (D-ATIS). The provision of ATIS via data link.

Voice-automatic terminal information service (Voice-ATIS). The provision of ATIS by means of continuous and repetitive voice broadcasts.

**Bare Earth.** Surface of the Earth including bodies of water and permanent ice and snow, and excluding vegetation and man-made objects.

**Calendar.** Discrete temporal reference system that provides the basis for defining temporal position to a resolution of one day (ISO 19108\*).  
(See IEM 15 2.0).

**Canopy.** Bare Earth supplemented by vegetation height.

**Controller-pilot data link communications (CPDLC).** A means of communication between controller and pilot, using data link for ATC communications.

**Culture.** All man-made features constructed on the surface of the Earth, such as cities, railways and canals.

**Cyclic redundancy check (CRC).** A mathematical algorithm applied to the digital expression of data

that provides a level of assurance against loss or alteration of data.

**Danger area.** An airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times.

**Database.** One or more files of data so structured that appropriate applications may draw from the files and update them.  
(See IEM 15 2.0).

**Data product.** Data set or data set series that conforms to a data product specification (ISO 19131\*). (See IEM 15 2.0).

**Data product specification.** Detailed description of a data set or data set series together with additional information that will enable it to be created, supplied to and used by another party (ISO 19131\*).  
(See IEM 15 2.0).

**Data quality.** A degree or level of confidence that the data provided meets the requirements of the data user in terms of accuracy, resolution and integrity.

**Data set.** Identifiable collection of data (ISO 19101\*).  
(See IEM 15 2.0).

**Data set series.** Collection of data sets sharing the same product specification (ISO 19115\*).  
(See IEM 15 2.0).

**Datum.** Any quantity or set of quantities that may serve as a reference or basis for the calculation of other quantities (ISO 19104\*).  
(See IEM 15 2.0).

**Digital Elevation Model (DEM).** The representation of terrain surface by continuous elevation values at all intersections of a defined grid, referenced to common datum.  
(See IEM 15 2.0).

**Direct transit arrangements.** Special arrangements approved by the public authorities concerned by which traffic which is pausing briefly in its passage through the Contracting State may remain under their direct control.

**Ellipsoid height (Geodetic height).** The height related to the reference ellipsoid, measured along



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

the ellipsoidal outer normal through the point in question.

**Feature.** Abstraction of real world phenomena (ISO 19101\*).  
(See IEM 15 2.0).

**Feature attribute.** Characteristic of a feature (ISO 19101\*).  
(See IEM 15 2.0).

**Feature operation.** Operation that every instance of a feature type may perform (ISO 19110\*).  
(See IEM 15 2.0).

**Feature relationship.** Relationship that links instances of one feature type with instances of the same or a different feature type (ISO 19101\*).  
(See IEM 15 2.0).

**Feature type.** Class of real world phenomena with common properties (ISO 19110\*).  
(See IEM 15 2.0).

**Geodesic distance.** The shortest distance between any two points on a mathematically defined ellipsoidal surface.

**Geodetic datum.** A minimum set of parameters required to define location and orientation of the local reference system with respect to the global reference system/frame.

**Geoid.** The equipotential surface in the gravity field of the Earth which coincides with the undisturbed mean sea level (MSL) extended continuously through the continents.  
(See IEM 15 2.0).

**Geoid undulation.** The distance of the geoid above (positive) or below (negative) the mathematical reference ellipsoid.  
(See IEM 15 2.0).

**Gregorian calendar.** Calendar in general use; first introduced in 1582 to define a year that more closely approximates the tropical year than the Julian calendar (ISO 19108\*).  
(See IEM 15 2.0).

**Height.** The vertical distance of a level, point or an object considered as a point, measured from a

specific datum.

**Heliport.** An aerodrome or a defined area on a structure intended to be used wholly or in part for the arrival, departure and surface movement of helicopters.

**Human Factors principles.** Principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance.

**Integrated Aeronautical Information Package.** A package which consists of the following elements:

- AIP, including amendment service;
- Supplements to the AIP;
- NOTAM and PIB;
- AIC; and
- Checklists and lists of valid NOTAM.

**Integrity (aeronautical data).** A degree of assurance that an aeronautical data and its value has not been lost or altered since the data origination or authorized amendment.

**International airport.** Any airport designated by the Contracting State in whose territory it is situated as an airport of entry and departure for international air traffic, where the formalities incident to customs, immigration, public health, animal and plant quarantine and similar procedures are carried out.

**International NOTAM office (NOF).** An office designated by a State for the exchange of NOTAM internationally.

**Logon address.** A specified code used for data link logon to an ATS unit.

**Manoeuvring area.** That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.

**Metadata.** Data about data (ISO 19115\*).  
(See IEM 15 2.0).

**Minimum en-route altitude (MEA).** The altitude for an en-route segment that provides adequate reception of relevant navigation facilities and ATS communications complies with the airspace structure



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

and provides the required obstacle clearance.

**Minimum obstacle clearance altitude (MOCA).** The minimum altitude for a defined segment of flight that provides the required obstacle clearance.

**Movement area.** That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s).

**Navigation specification.** A set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications:  
[\(See IEM 15 2.0\).](#)

*Required navigation performance (RNP) specification.* A navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP, e.g. RNP 4, RNP APCH.

*Area navigation (RNAV) specification.* A navigation specification based on area navigation that does not include the requirement for performance monitoring and alerting, designated by the prefix RNAV, e.g. RNAV 5, RNAV 1.

**NOTAM.** A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

**Obstacle.** All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that:

- a) are located on an area intended for the surface movement of aircraft; or
- b) extend above a defined surface intended to protect aircraft in flight; or
- c) stand outside those defined surfaces and that have been assessed as being a hazard to air navigation.

**Obstacle/terrain data collection surface.** A defined surface intended for the purpose of collecting

obstacle/terrain data.

**Orthometric height.** Height of a point related to the geoid, generally presented as an MSL elevation.

**Performance-based navigation (PBN).** Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.  
[\(See IEM 15 2.0\).](#)

**Portrayal.** Presentation of information to humans (ISO 19117\*).  
[\(See IEM 15 2.0\).](#)

**Position (geographical).** Set of coordinates (latitude and longitude) referenced to the mathematical reference ellipsoid which define the position of a point on the surface of the Earth.

**Post spacing.** Angular or linear distance between two adjacent elevation points.

**Precision.** The smallest difference that can be reliably distinguished by a measurement process.  
[\(See IEM 15 2.0\).](#)

**Pre-flight information bulletin (PIB).** A presentation of current NOTAM information of operational significance, prepared prior to flight.

**Prohibited area.** Airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited.

**Quality.** Degree to which a set of inherent characteristics fulfils requirements (ISO 9000\*).  
[\(See IEM 15 2.0\).](#)

**Quality assurance.** Part of quality management focused on providing confidence that quality requirements will be fulfilled (ISO 9000\*).  
[\(See IEM 15 2.0\).](#)

**Quality control.** Part of quality management focused on fulfilling quality requirements (ISO 9000\*).  
[\(See IEM 15 2.0\).](#)

**Quality management.** Coordinated activities to direct and control an organization with regard to quality (ISO 9000\*). [\(See IEM 15 2.0\).](#)





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**Radio navigation service.** A service providing guidance information or position data for the efficient and safe operation of aircraft supported by one or more radio navigation aids.

**Relief.** The inequalities in elevation of the surface of the Earth represented on aeronautical charts by contours, hypsometric tints, shading or spot elevations.

**Requirement.** Need or expectation that is stated, generally implied or obligatory (ISO 9000\*).  
[\(See IEM 15 2.0\).](#)

**Resolution.** A number of units or digits to which a measured or calculated value is expressed and used.

**Restricted area.** An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions.

**Route stage.** A route or portion of a route flown without an intermediate landing.

**SNOWTAM.** A special series NOTAM notifying the presence or removal of hazardous conditions due to snow, ice, slush or standing water associated with snow, slush and ice on the movement area, by means of a specific format.

**Station declination.** An alignment variation between the zero degree radial of a VOR and true north, determined at the time the VOR station is calibrated.

**Terrain.** The surface of the Earth containing naturally occurring features such as mountains, hills, ridges, valleys, bodies of water, permanent ice and snow, and excluding obstacles.  
[\(See IEM 15 2.0\).](#)

**Traceability.** Ability to trace the history, application or location of that which is under consideration (ISO 9000\*).  
[\(See IEM 15 2.0\).](#)

**Validation.** Confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled (ISO 9000\*).

[\(See IEM 15 2.0\).](#)

**Verification.** Confirmation, through the provision of objective evidence, that specified requirements have been fulfilled (ISO 9000\*).

[\(See IEM 15 2.0\).](#)

**VOLMET.** Meteorological information for aircraft in flight.

*Data link-VOLMET (D-VOLMET).* Provision of current aerodrome routine meteorological reports (METAR) and aerodrome special meteorological reports (SPECI), aerodrome forecasts (TAF), SIGMET, special air-reports not covered by a SIGMET and, where available, AIRMET via data link.

*VOLMET broadcast.* Provision, as appropriate, of current METAR, SPECI, TAF and SIGMET by means of continuous and repetitive voice broadcasts.

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**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**SUBPART C**

**CHAPTER 3 - GENERAL**

**BCAR 15 3.1.1 Responsibilities and functions**

- a. The State of Belize is responsible for the Aeronautical Publications or integrated documentation, to the International Civil Aviation Organization (ICAO).
- b. The State remains responsible for published information. In the aeronautical information that is published should be clearly indicated under whose responsibility it is published.
- c. The Belize Air Traffic Services Reporting Office is responsible for aeronautical information services and shall take all necessary measures to ensure that the aeronautical information / data supplied and areas of responsibility for the purposes of air traffic services are adequate for the required quality and timely. This implies that proper arrangements are made, so that each of the services that are related to aircraft operations, provide, timely, information / data necessary for the aeronautical information service.
- d. Where 24-hour service is not provided, service shall be available during the whole period an aircraft is in flight in the area of responsibility of an aeronautical information service, plus a period of at least two hours before and after such a period. The service shall also be available at such other time as may be requested by an appropriate ground organization.

**BCAR 15 3.1.2 Aeronautical Information Service before and during the flight**

Aeronautical information service shall, in addition, obtain information to enable it to provide pre-flight information service and to meet the need for in-flight information.

[\(See IEM 15 3.1.2\)](#)

- a. from the aeronautical information services of other States;
- b. from other sources that may be available

**BCAR 15 3.1.3** Aeronautical information/data obtained under BCAR 15 3.1.2 a) shall, when distributed, be clearly identified as having the authority of the State of Origin.

**BCAR 15 3.1.4** Aeronautical information/data obtained under BCAR 15 3.1.2 b) shall, if possible, be verified before distribution and if not verified shall, when distributed, be clearly identified as such.

**BCAR 15 3.1.5** Aeronautical information service shall promptly make available to the aeronautical information services of other States any information/data necessary for the safety, regularity or efficiency of air navigation required by those States, to enable them to comply with BCAR 3.1.6 below.

**BCAR 15 3.1.6** Aeronautical information service shall ensure that aeronautical information/data necessary for the safety; regularity or efficiency of air navigation is made available in a form suitable for the operational requirements of:

- a. those involved in flight operations, including flight crews, flight planning and flight simulators; and
- b. the air traffic services unit responsible for flight information service and the services responsible for pre-flight information.

**BCAR 15 3.1.7** Aeronautical information service, should receive or originate, collate or assemble, edit, format, publish, store and distribute information / data relating to the whole territory. Aeronautical information shall be published as an Integrated Aeronautical Information Package.

**BCAR 15 3.2 Quality management system**

**BCAR 15 3.2.1** Quality management systems shall be implemented and maintained encompassing all functions of an aeronautical information service, as outlined in BCAR 15 3.1.7. The execution of such quality management systems shall be made demonstrable for each function stage, when required.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**BCAR 15 3.2.2** Quality management should be applicable to the whole aeronautical information data chain from data origination to distribution to the next intended user, taking into consideration the intended use of data.

[\(See IEM 15 3.2.2\)](#)

**BCAR 15 3.2.3** The quality management system established in accordance with BCAR 15 3.2.1 should follow the International Organization for Standardization (ISO) 9000 series of quality assurance standards, and be certified by an approved organization.

[\(See IEM 15 3.2.3\)](#)

**BCAR 15 3.2.4** Within the context of the established quality management system, the skills and knowledge required for each function shall be identified, and personnel assigned to perform those functions shall be appropriately trained. States shall ensure that personnel possess the skills and competencies required to perform specific assigned functions, and appropriate records shall be maintained so that the qualifications of personnel can be confirmed. Initial and periodic assessments shall be established that require personnel to demonstrate the required skills and competencies. Periodic assessments of personnel shall be used as a means to detect and correct shortfalls.

**BCAR 15 3.2.5** Each quality management system shall include the necessary policies, processes and procedures, including those for the use of metadata, to ensure and verify that aeronautical data is traceable throughout the aeronautical information data chain so as to allow any data anomalies or errors detected in use to be identified by root cause, corrected and communicated to affected users.

**BCAR 15 3.2.6** The established quality management system shall provide users with the necessary assurance and confidence that distributed aeronautical information/data satisfy the aeronautical data quality requirements for accuracy, resolution and integrity as specified in Appendix 7, and the data traceability requirements through the provision of appropriate metadata as specified in BCAR 3.8.1. The system shall also provide assurance of the applicability period of intended use

of aeronautical data as well as that the agreed distribution dates will be met

**BCAR 15 3.2.7** All necessary measures shall be taken to monitor compliance with the quality management system in place.

**BCAR 15 3.2.8** The order of accuracy for aeronautical data, based upon a 95 per cent confidence level, shall be as specified in BCAR ATS, Chapter 2, and BCAR 14, Volumes I and II, Chapter 2. In that respect, three types of positional data shall be identified: surveyed points (runway thresholds, navigation aid positions, etc.), calculated points (mathematical calculations from the known surveyed points of points in space/fixes) and declared points (e.g. flight information region boundary points).

**BCAR 15 3.2.9** The order of publication resolution of aeronautical data shall be that as specified in Appendices 1 and 7.

**BCAR 15 3.2.10** The integrity of aeronautical data shall be maintained throughout the data process from survey/origin to distribution to the next intended user (the entity that receives the aeronautical information from the aeronautical information service provider). Aeronautical data integrity requirements shall be based upon the potential risk resulting from the corruption of data and upon the use to which the data item is put. Consequently, the following classifications and data integrity levels shall apply:

[\(See IEM 15 3.2.10\)](#)

a) critical data, integrity level  $1 \times 10^{-8}$ : there is a high probability when using corrupted critical data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe;

b) essential data, integrity level  $1 \times 10^{-5}$ : there is a low probability when using corrupted essential data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe; and

c) routine data, integrity level  $1 \times 10^{-3}$ : there is a very low probability when using corrupted routine data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**BCAR 15 3.2.11** Aeronautical data quality requirements related to classification and data integrity shall be as provided in Tables A7-1 to A7-5 of Appendix 7.

**BCAR 15 3.2.12** Electronic aeronautical data sets shall be protected by the inclusion in the data sets of a 32-bit cyclic redundancy check (CRC) implemented by the application dealing with the data sets. This shall apply to the protection of all integrity levels of data sets as specified in BCAR 15 3.2.10.

[\(See IEM 15 3.2.12\)](#)

**BCAR 15 3.2.13** Material to be issued as part of the Integrated Aeronautical Information Package shall be thoroughly checked and coordinated with the services responsible before it is submitted to the aeronautical information service, in order to make certain that all necessary information has been included and that it is correct in detail prior to distribution. Validation and verification procedures shall be established which ensure that quality requirements (accuracy, resolution, integrity) and traceability of aeronautical data are met.

[\(See IEM 15 3.2.13\)](#)

**BCAR 15 3.2.14** Demonstration of compliance of the quality management system applied shall be by audit. If nonconformity is identified, initiating action to correct its cause shall be determined and taken. All audit observations and remedial actions shall be evidenced and properly documented.

[\(See IEM 15 3.2.14\)](#)

**BCAR 153.3 Exchange of aeronautical information/data**

**BCAR 15 3.3.1** The office to which all elements of the Integrated Aeronautical Information Package originated by other States shall be addressed. Such an office shall be qualified to deal with requests for information/data originated by other States.

**BCAR 15 3.3.2** Where more than one international NOTAM office is designated, it shall define the extent of responsibility and the territory covered by each office.

**BCAR 15 3.3.3** An aeronautical information service shall arrange, as necessary, to satisfy operational requirements for the issuance and receipt of NOTAM distributed by telecommunication.

**BCAR 15 3.3.4** It should, wherever practicable, establish direct contact between aeronautical information services and other States in order to facilitate the international exchange of aeronautical information/data.

**BCAR 15 3.3.5** One copy of each of the elements of the Integrated Aeronautical Information Package, in paper or electronic form or both, that have been requested by the aeronautical information service of an ICAO Contracting State shall be made available by the originating State in the mutually-agreed form(s), without charge, even where authority for publication/storage and distribution has been delegated to a commercial agency.

**BCAR 15 3.3.6** The exchange of more than one copy of the elements of the Integrated Aeronautical Information Package and other air navigation documents, including those containing air navigation legislation and regulations, whether in paper and/or electronic form, should be subject to bilateral agreement.

**BCAR 15 3.3.7** The procurement of aeronautical information/data, including the elements of the Integrated Aeronautical Information Package, and other air navigation documents, including those containing air navigation legislation and regulations, whether in paper and/or electronic form, by States other than ICAO Contracting States and by other entities should be subject to separate agreement with the State of Belize.

**BCAR 15 3.4 Copyright**

**BCAR 15 3.4.1** In order to protect the investment in the products of Belize's AIS as well as to ensure better control of their use States may wish to apply copyright to those products in accordance with their national laws.

Any product of Belize's AIS which has been granted copyright protection by that State of Belize and provided to another State in accordance with BCAR 15 3.3 shall only be made available to a third party on the condition that the third party is made aware



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

that the product is copyright protected and provided that it is appropriately annotated that the product is subject to copyright by the of the Belize State.

**BCAR 15 3.5 Cost recovery**

The overhead cost of collecting and compiling aeronautical information/data should be included in the cost basis for airport and air navigation services charges, as appropriate, in accordance with the principles contained in ICAO's Policies on Charges for Airports and Air Navigation Services (Doc 9082).  
[\(See IEM 15 3.5\)](#)

**BCAR 15 3.6 General specifications**

**BCAR 15 3.6.1** Each element of the Integrated Aeronautical Information Package for international distribution shall include English text for those parts expressed in plain language.

**BCAR 15 3.6.2** Place names shall be spelt in conformity with local usage, transliterated, when necessary, into the Latin alphabet.

**BCAR 15 3.6.3** Units of measurement used in the distribution of aeronautical information/data should be consistent and according with the tables contained in **ICAO Annex 5** — Units of Measurement to be Used in Air and Ground Operations.

**BCAR 15 3.6.4 Use of ICAO abbreviations**

Abbreviations shall be used in the aeronautical information services whenever they are appropriate and their use will facilitate distribution of information/data.

**BCAR 15 3.6.5 Use of automation**

Automation enabling digital data exchange should be introduced with the objective of improving the speed, quality, efficiency and cost-effectiveness of aeronautical information services.  
[\(See IEM 15 3.6.5\)](#)

**BCAR 15 3.6.6 Identification and delineation of prohibited, restricted and danger areas**

**BCAR 15 3.6.6.1** Each prohibited area, restricted area, or danger area established by a State shall,

upon initial establishment, be given an identification and full details shall be promulgated (see ENR 5.1 of Appendix 1).

**BCAR 15 3.6.6.2** The identification so assigned shall be used to identify the area in all subsequent notifications pertaining to that area.

**BCAR 15 3.6.6.3** The identification shall be composed of a group of letters and figures as follows:

- a) nationality letters for location indicators assigned to the State or territory which has established the airspace;
- b) a letter P for prohibited area, R for restricted area and D for danger area as appropriate;
- c) a number, unduplicated within the State or territory concerned.

[\(See IEM 15 3.6.6.2\)](#)

**BCAR 15 3.6.6.4** To avoid confusion, identification numbers shall not be reused for a period of at least one year after cancellation of the area to which they refer.

**BCAR 15 3.6.6.5** When a prohibited, restricted or danger area is established, the area should be as small as practicable and be contained within simple geometrical limits, so as to permit ease of reference by all concerned.

**BCAR 15 3.6.7 Human Factors considerations**

**BCAR 15 3.6.7.1** The organization of the aeronautical information services as well as the design, contents, processing and distribution of aeronautical information/data shall take into consideration Human Factors principles which facilitate their optimum utilization.

**BCAR 15 3.6.7.2** Due consideration shall be given to the integrity of information where human interaction is required and mitigating steps taken where risks are identified.

[\(See IEM 15 3.6.7.2\)](#)

**BCAR 15 3.7 Common reference systems for air navigation**



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**BCAR 15 3.7.1 Horizontal reference system**

**BCAR 15 3.7.1.1** World Geodetic System — 1984 (WGS-84) shall be used as the horizontal (geodetic) reference system for international air navigation. Consequently, published aeronautical geographical coordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference datum.

[\(See IEM 15 3.7.1.1\)](#)

**BCAR 15 3.7.1.2** In precise geodetic applications and some air navigation applications, temporal changes in the tectonic plate motion and tidal effects on the Earth's crust should be modelled and estimated. To reflect the temporal effect, an epoch should be included with any set of absolute station coordinates.

[\(See IEM 15 3.7.1.2\)](#)

**BCAR 15 3.7.1.3** Geographical coordinates which have been transformed into WGS-84 coordinates but whose accuracy of original field work does not meet the requirements in BCAR ATS, Chapter 2, and BCAR 14, Volumes I and II, Chapter 2, shall be identified by an asterisk.

**BCAR 15 3.7.1.4** The order of publication resolution of geographical coordinates shall be that specified in Appendix 1 and Table A7-1 of Appendix 7 while the order of chart resolution of geographical coordinates shall be that specified in BCAR 4, Appendix 6, Table 1.

**BCAR 15 3.7.2 Vertical reference system**

**BCAR 15 3.7.2.1** Mean sea level (MSL) datum, which gives the relationship of gravity-related height (elevation) to a surface known as the geoid, shall be used as the vertical reference system for international air navigation.

[\(See IEM 15 3.7.2.1\)](#)

**BCAR 15 3.7.2.2** The Earth Gravitational Model — 1996 (EGM-96), containing long wavelength gravity field data to degree and order 360, shall be used by international air navigation as the global gravity model.

[\(See IEM 15 3.7.2.2\)](#)

**BCAR 15 3.7.2.3** At those geographical positions where the accuracy of EGM-96 does not meet the

accuracy requirements for elevation and geoid undulation specified in BCAR 14, Volumes I and II, on the basis of EGM-96 data, regional, national or local geoid models containing high resolution (short wavelength) gravity field data shall be developed and used. When a geoid model other than the EGM-96 model is used, a description of the model used, including the parameters required for height transformation between the model and EGM-96, shall be provided in the Aeronautical Information Publication (AIP).

[\(See IEM 15 3.7.2.3\)](#)

**BCAR 15 3.7.2.4** In addition to elevation referenced to the MSL (geoid), for the specific surveyed ground positions, geoid undulation (referenced to the WGS-84 ellipsoid) for those positions specified in Appendix 1 shall also be published.

**BCAR 15 3.7.2.5** The order of publication resolution of elevation and geoid undulation shall be that specified in Appendix 1 and Table A7-2 of Appendix 7 while the order of chart resolution of elevation and geoid undulation shall be that specified in BCAR 4, Appendix 6, Table 2.

**BCAR 15 3.7.3 Temporal reference system**

**BCAR 15 3.7.3.1** For international civil aviation, the Gregorian calendar and Coordinated Universal Time (UTC) shall be used as the temporal reference system.

[\(See IEM 15 3.7.3.1\)](#)

**BCAR 15 3.7.3.2** When a different temporal reference system is used for some applications, the feature catalogue, or the metadata associated with an application schema or a data set, as appropriate, shall include either a description of that system or a citation for a document that describes that temporal reference system.

[\(See IEM 15 3.7.3.2\)](#)

**BCAR 15 3.8 Metadata**

**BCAR 15 3.8.1** Metadata shall be collected for aeronautical data processes and exchange points. This metadata collection shall be applied throughout the aeronautical information data chain, from survey/origin to distribution to the next intended user.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

---

**BCAR 15 3.8.2** The metadata to be collected shall include, as a minimum:

- a) the name of the organization or entity performing the function;
- b) the function performed; and
- c) the date and time of operation.  
[\(See IEM 15 3.8.2.\)](#)

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**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**SUBPART D**

**CHAPTER 4 - AERONAUTICAL INFORMATION  
PUBLICATIONS (AIP)**

[\(See BCAR 15 4 \)](#)

**BCAR 15 4.1 Contents**

**BCAR 15 4.1.1** An Aeronautical Information Publication shall contain, in three parts, sections and subsections uniformly referenced to allow for standardized electronic data storage and retrieval, current information relating to, and arranged under, those subjects enumerated in Appendix 1 that appear in Roman type, except that when the AIP, or volume of the AIP, is designed basically to facilitate operational use in flight, the precise format and arrangement may be left to the discretion of the State provided that an adequate table of contents is included.

**BCAR 15 4.1.1.1** Aeronautical Information Publications should, in addition, contain current information relating to those subjects enumerated in Appendix 1 that appear in italic type.

**BCAR 15 4.1.2** Aeronautical Information Publications shall include in Part 1 — General (GEN):

- a) a statement of the competent authority responsible for the air navigation facilities, services or procedures covered by the AIP;
- b) the general conditions under which the services or facilities are available for international use;
- c) a list of significant differences between the national regulations and practices of the State and the related ICAO Standards, Recommended Practices and Procedures, given in a form that would enable a user to differentiate readily between the requirements of the Belize and the related ICAO provisions;
- d) the choice made by a Belize in each significant case where an alternative course of action is provided for in ICAO Standards, Recommended Practices and Procedures.

**BCAR 15 4.1.3** The aeronautical charts listed alphabetically below shall, when available for designated international aerodromes/ heliports, form part of the AIP, or be distributed separately to recipients of the AIP:

- a) Aerodrome/Heliport Chart — ICAO;
- b) Aerodrome Ground Movement Chart — ICAO;
- c) Aerodrome Obstacle Chart — ICAO Type A;
- d) Aerodrome Terrain and Obstacle Chart — ICAO (Electronic);
- e) Aircraft Parking/Docking Chart — ICAO;
- f) Area Chart — ICAO;
- g) ATC Surveillance Minimum Altitude Chart — ICAO;
- h) Instrument Approach Chart — ICAO;
- i) Precision Approach Terrain Chart — ICAO;
- j) Standard Arrival Chart — Instrument (STAR) — ICAO;
- k) Standard Departure Chart — Instrument (SID) — ICAO;
- l) Visual Approach Chart — ICAO

[\(See IEM 15 4.1.3\)](#)

**BCAR 15 4.1.4** Charts, maps or diagrams shall be used, when appropriate, to complement or as a substitute for the tabulations or text of Aeronautical Information Publications.

[\(See IEM 15 4.1.4\)](#)

**BCAR 15 4.2 General specifications**

**BCAR 15 4.2.1** Each Aeronautical Information Publication shall be self-contained and shall include a table of contents.

**BCAR 15 4.2.1.1** Each AIP shall not duplicate information within itself or from other sources.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**BCAR 15 4.2.1.2** When two or more States combine to issue a joint AIP, this shall be made clear both on the cover and in the table of contents.

**BCAR 15 4.2.2** AIP should be published in loose-leaf form unless the complete publication is reissued at frequent intervals.

**BCAR 15 4.2.3** Each Aeronautical Information Publication shall be dated. In the case of Aeronautical Information Publications issued in loose-leaf form, each page shall be dated. The date, consisting of the day, month (by name) and year, shall be the publication date or the effective date of the information.

**BCAR 15 4.2.4** A checklist giving the current date of each page in the Aeronautical Information Publication series shall be reissued frequently to assist the user in maintaining a current publication. The page number/chart title and date of the checklist shall appear on the checklist itself.

**BCAR 15 4.2.5** Each Aeronautical Information Publication issued as a bound volume and each page of an Aeronautical Information Publication issued in loose-leaf form shall be so annotated as to indicate clearly:

- a) the identity of the Aeronautical Information Publication;
- b) the territory covered and subdivisions when necessary;
- c) the identification of the issuing State and producing organization (authority);
- d) page numbers/chart titles;
- e) the degree of reliability if the information is doubtful.

**BCAR 15 4.2.6** The sheet size should be no larger than 210 × 297 mm, except that larger sheets may be used provided they are folded to the same size.

**BCAR 15 4.2.7** All changes to the AIP, or new information on a reprinted page, shall be identified by a distinctive symbol or annotation.

**BCAR 15 4.2.8** Operationally significant changes to the AIP shall be published in accordance with AIRAC procedures and shall be clearly identified by the acronym — AIRAC.

**BCAR 15 4.2.9** AIP shall be amended or reissued at such regular intervals as may be necessary to keep them up to date. Recourse to hand amendments or annotations shall be kept to the minimum. The normal method of amendment shall be by means of replacement sheets.

**BCAR 15 4.2.9.1** The regular interval referred to in BCAR 15 4.2.9 shall be specified in the AIP, Part 1 — General (GEN).

[\(See IEM 15 4.2.9.1\)](#)

**BCAR 15 4.3 Specifications for AIP Amendments**

**BCAR 15 4.3.1** Permanent changes to the AIP shall be published as AIP Amendments.

**BCAR 15 4.3.2** Each AIP Amendment shall be allocated a serial number, which shall be consecutive.

**BCAR 15 4.3.3** Each AIP Amendment page, including the cover sheet, shall display a publication date.

**BCAR 15 4.3.4** Each AIRAC AIP Amendment page, including the cover sheet, shall display an effective date. When an effective time other than 0000 UTC is used, the effective time shall also be displayed on the cover sheet.

**BCAR 15 4.3.5** When an AIP Amendment is issued, it shall include references to the serial number of those elements, if any, of the Integrated Aeronautical Information Package which have been incorporated into the amendment.

**BCAR 15 4.3.6** A brief indication of the subjects affected by the amendment shall be given on the AIP Amendment cover sheet.

**BCAR 15 4.3.7** When an AIP Amendment will not be published at the established interval or publication date, a NIL notification shall be originated and distributed by the monthly printed



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

plain-language list of valid NOTAM required by BCAR 5.2.13.3.

**BCAR 15 4.4 Specifications for AIP Supplements**

**BCAR 15 4.4.1** Temporary changes of long duration (three months or longer) and information of short duration which contains extensive text and/or graphics shall be published as AIP Supplements. [\(See IEM 15 4.4.1\)](#)

**BCAR 15 4.4.2** Each AIP Supplement shall be allocated a serial number which shall be consecutive and based on the calendar year.

**BCAR 15 4.4.3** AIP Supplement pages shall be kept in the AIP as long as all or some of their contents remain valid.

**BCAR 15 4.4.4** When an error occurs in an AIP Supplement or when the period of validity of an AIP Supplement is changed, a new AIP Supplement shall be published as a replacement.

**BCAR 15 4.4.5** When an AIP Supplement is sent in replacement of a NOTAM, it shall include a reference to the serial number of the NOTAM.

**BCAR 15 4.4.6** A checklist of valid AIP Supplements shall be issued at intervals of not more than one month. This information shall be issued through the medium of the monthly printed plain-language list of valid NOTAM required by BCAR 5.2.13.3.

**BCAR 15 4.4.7** AIP Supplement pages should be coloured in order to be conspicuous, preferably in yellow.

**BCAR 15 4.4.8** AIP Supplement pages should be kept as the first item in the AIP parts.

**BCAR 15 4.5 Distribution**

AIP, AIP Amendments and AIP Supplements shall be made available by the most expeditious means.

**BCAR 15 4.6 Electronic AIP (eAIP)**

**BCAR 15 4.6.1** The AIP, AIP Amendment, AIP Supplement and AIC should also be published in a

format that allows for displaying on a computer screen and printing on paper. [\(See IEM 15 4.6.1\)](#)

**BCAR 15 4.6.2** When provided, the information content of the eAIP and the structure of chapters, sections and sub-sections shall follow the content and structure of the paper AIP. The eAIP shall include files that allow for printing a paper AIP.

**BCAR 15 4.6.3** When provided, the eAIP should be available on a physical distribution medium (CD, DVD, etc.) and/or online on the Internet. [\(See IEM 15 4.6.3\)](#)

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**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**SUBPART E**

**CHAPTER 5 - NOTAM**

**BCAR 15 5.1 Origination**

**BCAR 15 5.1.1** A NOTAM shall be originated and issued promptly whenever the information to be distributed is of a temporary nature and of short duration or when operationally significant permanent changes or temporary changes of long duration are made at short notice, except for extensive text and/or graphics.

[\(See IEM 15 5.1.1\)](#)

**BCAR 15 5.1.1.1** A NOTAM shall be originated and issued concerning the following information:

- a) establishment, closure or significant changes in operation of aerodrome(s)/heliport(s) or runways;
- b) establishment, withdrawal and significant changes in operation of aeronautical services (AGA, AIS, ATS, CNS, MET, SAR, etc.);
- c) establishment, withdrawal and significant changes in operational capability of radio navigation and air-ground communication services. This includes: interruption or return to operation, change of frequencies, change in notified hours of service, change of identification, change of orientation (directional aids), change of location, power increase or decrease amounting to 50 per cent or more, change in broadcast schedules or contents, or irregularity or unreliability of operation of any radio navigation and air-ground communication services;
- d) establishment, withdrawal or significant changes made to visual aids;
- e) interruption of or return to operation of major components of aerodrome lighting systems;
- f) establishment, withdrawal or significant changes made to procedures for air navigation services;

- g) occurrence or correction of major defects or impediments in the manoeuvring area;
- h) changes to and limitations on availability of fuel, oil and oxygen;
- i) major changes to search and rescue facilities and services available;
- j) establishment, withdrawal or return to operation of hazard beacons marking obstacles to air navigation;
- k) changes in regulations requiring immediate action, e.g. prohibited areas for SAR action;
- l) presence of hazards which affect air navigation (including obstacles, military exercises, displays, races and major parachuting events outside promulgated sites);
- m) erecting or removal of, or changes to, obstacles to air navigation in the take-off/climb, missed approach, approach areas and runway strip;
- n) establishment or discontinuance (including activation or deactivation) as applicable, or changes in the status of prohibited, restricted or danger areas;
- o) establishment or discontinuance of areas or routes or portions thereof where the possibility of interception exists and where the maintenance of guard on the VHF emergency frequency 121.5 MHz is required;
- p) allocation, cancellation or change of location indicators;
- q) significant changes in the level of protection normally available at an aerodrome/heliport for rescue and fire fighting purposes. NOTAM shall be originated only when a change of category is involved and such change of category shall be clearly stated (see BCAR 14, Volume I, Chapter 9, and Attachment A, Section 17);
- r) presence or removal of, or significant changes in, hazardous conditions due to radioactive material, toxic chemicals, volcanic ash deposition or water on the movement area;



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

s) outbreaks of epidemics necessitating changes in notified requirements for inoculations and quarantine measures;

t) forecasts of solar cosmic radiation, where provided;

u) an operationally significant change in volcanic activity, the location, date and time of volcanic eruptions and/or horizontal and vertical extent of volcanic ash cloud, including direction of movement, flight levels and routes or portions of routes which could be affected;

v) release into the atmosphere of radioactive materials or toxic chemicals following a nuclear or chemical incident, the location, date and time of the incident, the flight levels and routes or portions thereof which could be affected and the direction of movement;

w) establishment of operations of humanitarian relief missions, such as those undertaken under the auspices of the United Nations, together with procedures and/or limitations which affect air navigation; and

x) implementation of short-term contingency measures in cases of disruption, or partial disruption, of air traffic services and related supporting services.

[\(See IEM 15 5.1.1.1\)](#)

**BCAR 15 5.1.1.2** The need for origination of a NOTAM should be considered in any other circumstance which may affect the operations of aircraft.

**BCAR 15 5.1.1.3** The following information shall not be notified by NOTAM:

a) routine maintenance work on aprons and taxiways which does not affect the safe movement of aircraft;

b) runway marking work, when aircraft operations can safely be conducted on other available runways, or the equipment used can be removed when necessary;

c) temporary obstructions in the vicinity of aerodromes/heliports that do not affect the safe operation of aircraft;

d) partial failure of aerodrome/heliport lighting facilities where such failure does not directly affect aircraft operations;

e) partial temporary failure of air-ground communications when suitable alternative frequencies are known to be available and are operative;

f) the lack of apron marshalling services and road traffic control;

g) the unserviceability of location, destination or other instruction signs on the aerodrome movement area;

h) parachuting when in uncontrolled airspace under VFR (see BCAR 15 5.1.1.1 l)), when controlled, at promulgated sites or within danger or prohibited areas;

i) other information of a similar temporary nature.

**BCAR 15 5.1.1.4** At least seven days' advance notice shall be given of the activation of established danger, restricted or prohibited areas and of activities requiring temporary airspace restrictions other than for emergency operations.

**BCAR 15 5.1.1.4.1** Notice of any subsequent cancellation of the activities or any reduction of the hours of activity or the dimensions of the airspace should be given as soon as possible.

[\(See IEM 15 5.1.4.1\)](#)

**BCAR 15 5.1.1.5** NOTAM notifying unserviceability of aids to air navigation, facilities or communication services shall give an estimate of the period of unserviceability or the time at which restoration of service is expected.

**BCAR 15 5.1.1.6** When an AIP Amendment or an AIP Supplement is published in accordance with AIRAC procedures, a NOTAM shall be originated giving a brief description of the contents, the effective date and time, and the reference number of the amendment or supplement. This NOTAM shall come into force on the same effective date



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

and time as the amendment or supplement and shall remain valid in the pre-flight information bulletin for a period of fourteen days.

**BCAR 15 5.2 General specifications**

**BCAR 15 5.2.1** Except as otherwise provided in BCAR 15 5.2.3 and BCAR 15 5.2.4, each NOTAM shall contain the information in the order shown in the NOTAM Format in Appendix 6.

**BCAR 15 5.2.2** Text of NOTAM shall be composed of the significations/uniform abbreviated phraseology assigned to the ICAONOTAM Code complemented by ICAO abbreviations, indicators, identifiers, designators, call signs, frequencies, figures and plain language.

[\(See IEM 15 5.2.2\)](#)

**BCAR 15 5.2.2.1** When NOTAM is selected for international distribution, English text shall be included for those parts expressed in plain language.

[\(See IEM 15 5.2.2.1\)](#)

**BCAR 15 5.2.3 RESERVED**

**BCAR 15 5.2.4** Information concerning an operationally significant change in volcanic activity, a volcanic eruption and/or volcanic ash cloud shall, when reported by means of an ASHTAM, contain the information in the order shown in the ASHTAM Format in Appendix 3.

**BCAR 15 5.2.5** The NOTAM originator shall allocate to each NOTAM a series identified by a letter and a four-digit number followed by a stroke and a two-digit number for the year. The four-digit number shall be consecutive and based on the calendar year.

[\(See IEM 15 5.2.5\)](#)

**BCAR 15 5.2.7** When a NOTAM is issued which cancels or replaces a previous NOTAM, the series and number of the previous NOTAM shall be indicated. The series, location indicator and subject of both NOTAM shall be the same. Only one NOTAM shall be cancelled or replaced by a NOTAM.

**BCAR 15 5.2.8** Each NOTAM shall deal with only one subject and one condition of the subject.

[\(See IEM 15 5.2.8\)](#)

**BCAR 15 5.2.9** Each NOTAM shall be as brief as possible and so compiled that its meaning is clear without the need to refer to another document.

**BCAR 15 5.2.10** Each NOTAM shall be transmitted as a single telecommunication message.

**BCAR 15 5.2.11** A NOTAM containing permanent or temporary information of long duration shall carry appropriate AIP or AIP Supplement references.

**BCAR 15 5.2.12** Location indicators included in the text of a NOTAM shall be those contained in Location Indicators (ICAO Doc 7910).

**BCAR 15 5.2.12.1** In no case shall a curtailed form of such indicators be used.

**BCAR 15 5.2.12.2** Where no ICAO location indicator is assigned to the location, its place name spelt in accordance with BCAR 15 3.6.2 shall be entered in plain language.

**BCAR 15 5.2.13** A checklist of valid NOTAM shall be issued as a NOTAM over the Aeronautical Fixed Service (AFS) at intervals of not more than one month using the NOTAM Format specified in Appendix 6. One NOTAM shall be issued for each series.

[\(See IEM 15 5.2.8\)](#)

**BCAR 15 5.2.13.1** A checklist of NOTAM shall refer to the latest AIP Amendments, AIP Supplements and at least the internationally distributed AIC.

**BCAR 15 5.2.13.2** A checklist of NOTAM shall have the same distribution as the actual message series to which they refer and shall be clearly identified as checklist.

**BCAR 15 5.2.13.3** A monthly printed plain-language list of valid NOTAM, including indications of the latest AIP Amendments, AIC issued and a checklist of AIP Supplements shall be prepared with a minimum of delay and forwarded by the most expeditious means to recipients of the Integrated Aeronautical Information Package.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**BCAR 15 5.3 Distribution**

possible, subject to the requirements of BCAR 15 5.3.4.

**BCAR 15 5.3.1** NOTAM shall be distributed on the basis of a request.

**BCAR 15 5.3.2** NOTAM shall be prepared in conformity with the relevant provisions of the ICAO communication procedures.

**BCAR 15 5.3.2.1** The AFS shall, whenever practicable, be employed for NOTAM distribution.

**BCAR 15 5.3.2.2** When a NOTAM exchanged as specified in BCAR 15 5.3.4 is sent by means other than the AFS, a six-digit date-time group indicating the date and time of NOTAM origination, and the identification of the originator shall be used, preceding the text.

**BCAR 15 5.3.3** The originating State shall select the NOTAM that are to be given international distribution.

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**BCAR 15 5.3.3.1** Selective distribution lists should be used when practicable.

[\(See IEM 15 5.3.3.1\)](#)

**BCAR 15 5.3.4** International exchange of NOTAM shall take place only as mutually agreed between the international NOTAM offices concerned. The international exchange of ASHTAM (see BCAR 15 5.2.4), and NOTAM where States continue to use NOTAM for distribution of information on volcanic activity, shall include volcanic ash advisory centres and the centres designated by regional air navigation agreement for the operation of AFS satellite distribution systems (satellite distribution system for information relating to air navigation (SADIS) and international satellite communications system (ISCS)), and shall take account of the requirements of long-range operations.

**BCAR 15 5.3.4.1** These exchanges of NOTAM between international NOTAM offices shall, as far as practicable, be limited to the requirements of the receiving States concerned by means of separate series providing for at least international and domestic flights.

**BCAR 15 5.3.4.2** A predetermined distribution system for NOTAM transmitted on the AFS in accordance with Appendix 5 shall be used whenever





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**SUBPART F**

**CHAPTER 6 - AERONAUTICAL  
INFORMATION REGULATION AND CONTROL  
(AIRAC)**

**BCAR 15 6.1 General specifications**

**BCAR 15 6.1.1** Information concerning the circumstances listed in Appendix 4, Part 1, shall be distributed under the regulated system (AIRAC), i.e. basing establishment, withdrawal or significant changes upon a series of common effective dates at intervals of 28 days. The information notified therein shall not be changed further for at least another 28 days after the effective date, unless the circumstance notified is of a temporary nature and would not persist for the full period.

[\(See IEM 15 6.1.1\)](#)

**BCAR 15 6.1.2** The regulated system (AIRAC) should also be used for the provision of information relating to the establishment and withdrawal of, and premeditated significant changes in, the circumstances listed in Appendix 4, Part 2.

**BCAR 15 6.1.3** When information has not been submitted by the AIRAC date, a NIL notification shall be originated and distributed by NOTAM or other suitable means, not later than one cycle before the AIRAC effective date concerned.

**BCAR 15 6.1.4** Implementation dates other than AIRAC effective dates shall not be used for pre-planned operationally significant changes requiring cartographic work and/or for updating of navigation databases.

**BCAR 15 6.1.5** The use of the date in the AIRAC cycle which occurs between 21 December and 17 January inclusive should be avoided as an effective date for the introduction of significant changes under the AIRAC system.

**BCAR 15 6.2 Provision of information in paper copy form**

**BCAR 15 6.2.1** In all instances, information provided under the AIRAC system shall be published in paper copy form and shall be distributed by the AIS unit at least 42 days in

advance of the effective date with the objective of reaching recipients at least 28 days in advance of the effective date.

**BCAR 15 6.2.2** Whenever major changes are planned and where advance notice is desirable and practicable, information published in paper copy form should be distributed by the AIS unit at least 56 days in advance of the effective date. This should be applied to the establishment of, and premeditated major changes in, the circumstances listed in Appendix 4, Part 3, and other major changes if deemed necessary.

[\(See IEM 15 6.2.2\)](#)

**BCAR 15 6.3 Provision of information in electronic form**

**BCAR 15 6.3.1** States that have established an aeronautical database shall, when updating its contents concerning the circumstances listed in Appendix 4, Part 1, ensure that the effective dates of data coincide with the established AIRAC effective dates used for the provision of information in paper copy form.

**BCAR 15 6.3.2** Information provided in electronic form, concerning the circumstances listed in Appendix 4, Part 1, shall be distributed/made available by the AIS unit so as to reach recipients at least 28 days in advance of the AIRAC effective date.

**BCAR 15 6.3.3** Whenever major changes are planned and where advance notice is desirable and practicable, information provided in electronic form should be distributed/made available at least 56 days in advance of the effective date. This should be applied to the establishment of, and premeditated major changes in, the circumstances listed in Appendix 4, Part 3, and other major changes if deemed necessary.

[\(See IEM 15 6.3.3\)](#)

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**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**SUBPART G**

**CHAPTER 7 - AERONAUTICAL  
INFORMATION CIRCULARS (AIC)**

**BCAR 15 7.1 Origination**

**BCAR 15 7.1.1** An AIC shall be originated whenever it is necessary to promulgate aeronautical information which does not qualify:

- a) under the specifications in BCAR 15 4.1 for inclusion in an AIP; or
- b) under the specifications in BCAR 15 5.1 for the origination of a NOTAM.

**BCAR 15 7.1.1.1** An AIC shall be originated whenever it is desirable to promulgate:

- a) a long-term forecast of any major change in legislation, regulations, procedures or facilities;
- b) information of a purely explanatory or advisory nature liable to affect flight safety;
- c) information or notification of an explanatory or advisory nature concerning technical, legislative or purely administrative matters.

This shall include:

- 1) forecasts of important changes in the air navigation procedures, services and facilities provided;
- 2) forecasts of implementation of new navigational systems;
- 3) significant information arising from aircraft accident/incident investigation which has a bearing on flight safety;
- 4) information on regulations relating to the safeguarding of international civil aviation against acts of unlawful interference;
- 5) advice on medical matters of special interest to pilots;

6) warnings to pilots concerning the avoidance of physical hazards;

7) effect of certain weather phenomena on aircraft operations;

8) information on new hazards affecting aircraft handling techniques;

9) regulations relating to the carriage of restricted articles by air;

10) reference to the requirements of, and publication of changes in, national legislation;

11) aircrew licensing arrangements;

12) training of aviation personnel;

13) application of, or exemption from, requirements in national legislation;

14) advice on the use and maintenance of specific types of equipment;

15) actual or planned availability of new or revised editions of aeronautical charts;

16) carriage of communication equipment;

17) explanatory information relating to noise abatement;

18) selected airworthiness directives;

19) changes in NOTAM series or distribution, new editions of AIP or major changes in their contents, coverage or format;

20) **Reserved**

21) other information of a similar nature.  
[\(See IEM 15 7.1.1.1\)](#)

**BCAR 15 7.1.1.2 Reserved**

**BCAR 15 7.2 General specifications**

**BCAR 15 7.2.1** AIC shall be issued in printed form.  
[\(See IEM 15 7.2.1\)](#)



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**BCAR 15 7.2.1.1** The originating State shall select the AIC that are to be given international distribution.

**BCAR 15 7.2.1.2** Each AIC shall be allocated a serial number which shall be consecutive and based on the calendar year.

**BCAR 15 7.2.1.3** When AIC are distributed in more than one series, each series shall be separately identified by a letter.

**BCAR 15 7.2.1.4** Differentiation and identification of AIC topics according to subjects using colour coding should be practised where the numbers of AIC in force are sufficient to make identification in this form necessary.

[\(See IEM 15 7.2.1.4\)](#)

**BCAR 15 7.2.2** A checklist of AIC currently in force shall be issued at least once a year, with distribution as for the AIC.

**BCAR 15 7.2.2** A checklist of AIC currently in force shall be issued at least once a year, with distribution as for the AIC.

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**BCAR 15 7.3 Distribution**

States shall give AIC selected for international distribution the same distribution as for the AIP.

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**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**SUBPART H**

**CHAPTER 8 - PRE-FLIGHT AND POST-FLIGHT  
INFORMATION/DATA**

**BCAR 15 8.1 Pre-flight information**

**BCAR 15 8.1.1** At any aerodrome/heliport normally used for international air operations, aeronautical information essential for the safety, regularity and efficiency of air navigation and relative to the route stages originating at the aerodrome/heliport shall be made available to flight operations personnel, including flight crews and services responsible for pre-flight information.

**BCAR 15 8.1.2** Aeronautical information provided for pre-flight planning purposes at the aerodromes/heliports referred to in BCAR 15 8.1.1 shall include relevant:

a) elements of the Integrated Aeronautical Information Package;

b) maps and charts.

[\(See IEM 15 8.1.2\)](#)

**BCAR 15 8.1.2.1** Additional current information relating to the aerodrome of departure shall be provided concerning the following:

a) construction or maintenance work on or immediately adjacent to the manoeuvring area;

b) rough portions of any part of the manoeuvring area, whether marked or not, e.g. broken parts of the surface of runways and taxiways;

c) presence and depth of water on runways and taxiways, including their effect on surface friction;

d) The accumulated water on runways or taxiway

e) parked aircraft or other objects on or immediately adjacent to taxiways;

f) presence of other temporary hazards;

g) presence of birds constituting a potential hazard to aircraft operations;

h) failure or irregular operation of part or all of the aerodrome lighting system including approach, threshold, runway, taxiway, obstruction and manoeuvring area unserviceability lights and aerodrome power supply;

i) failure, irregular operation and changes in the operational status of radio navigation services, VHF aeromobile channels, RVR observing system, and secondary powersupply; and

j) presence and operation of humanitarian relief missions, such as those undertaken under the auspices of the United Nations, together with any associated procedures and/or limitations applied thereof.

**BCAR 15 8.1.3** A recapitulation of current NOTAM and other information of urgent character shall be made available to flight crews in the form of plain-language pre-flight information bulletins (PIB).

[\(See IEM 15 8.1.3\)](#)

**BCAR 15 8.2 Automated aeronautical information systems**

**BCAR 15 8.2.1** When use automated pre-flight information systems to make aeronautical information/data available to operations personnel including flight crew members for self-briefing, flight planning and flight information service purposes. The information/data made available shall comply with the provisions of BCAR 15 8.1.2 and BCAR 15 8.1.3.

**BCAR 15 8.2.2** Self-briefing facilities of an automated pre-flight information system shall provide access to operations personnel, including flight crew members and other aeronautical personnel concerned, for consultation as necessary with the aeronautical information service by telephone or other suitable telecommunications means. The human/machine interface of such facilities shall ensure easy access in a guided manner to all relevant information/data.

**BCAR 15 8.2.3** Automated pre-flight information systems for the supply of aeronautical



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

information/data for self-briefing, flight planning and flight information service shall:

- a) provide for continuous and timely updating of the system database and monitoring of the validity and quality of the aeronautical data stored;
- b) permit access to the system by operations personnel including flight crew members, aeronautical personnel concerned and other aeronautical users through suitable telecommunications means;
- c) ensure provision, in paper copy form, of the aeronautical information/data accessed, as required;
- d) use access and interrogation procedures based on abbreviated plain language and ICAO location indicators, as appropriate, or based on a menu-driven user interface or other appropriate mechanism as agreed between the civil aviation authority and operator concerned; and
- e) provide for rapid response to a user request for information.

[\(See IEM 15 8.2.3\)](#)

**BCAR 15 8.2.4** Automated pre-flight information systems providing a harmonized, common point of access by operations personnel, including flight crew members and other aeronautical personnel concerned, to aeronautical information in accordance with BCAR 15 8.2.1 and meteorological information in accordance with BCAR AMS 9.5.1 of Meteorological Service for International Air Navigation, should be established by an agreement between the civil aviation authority or the agency to which the authority to provide service has been delegated in accordance with BCAR 15 3.1.1 c) and the relevant meteorological authority.

**BCAR 15 8.2.5** Where automated pre-flight information systems are used to provide the harmonized, common point of access by operations personnel, including flight crew members and other aeronautical personnel concerned, to aeronautical information/data and meteorological information, the civil aviation authority or the agency to which the authority to provide service has been delegated in accordance with BCAR 15 3.1.1 c)

shall remain responsible for the quality and timeliness of the aeronautical information/data provided by means of such a system.

**BCAR 15 8.3 Post-flight information**

**BCAR 15 8.3.1** The Belize Air Traffic Services Reporting Office shall ensure that arrangements are made to receive at aerodromes/heliports information concerning the state and operation of air navigation facilities or services noted by aircrews and shall ensure that such information is made available to the aeronautical information service for such distribution as the circumstances necessitate.

**BCAR 15 8.3.2** The Belize Air Traffic Services Reporting Office shall ensure that arrangements are made to receive at aerodromes/heliports information concerning the presence of birds observed by aircrews and shall ensure that such information is made available to the aeronautical information service for such distribution as the circumstances necessitate.

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**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

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**SUBPART I**

**CHAPTER 9 - TELECOMMUNICATION  
REQUIREMENTS**

**BCAR 15 9.1** International NOTAM offices shall be connected to the aeronautical fixed service (AFS).

**BCAR 15 9.1.1** The connections shall provide for printed communications.

**BCAR 15 9.2** Each international NOTAM office shall be connected, through the aeronautical fixed service (AFS), to the following points within the territory for which it provides service:

- a) area control centres and flight information centres;
- b) aerodromes/heliports at which an information service is established in accordance with Chapter 8.

**BCAR 15 9.3** Subject to availability, satisfactory operation and bilateral/multilateral and/or regional airnavigation agreements, the use of public Internet should be permitted for exchange of non-time critical types of aeronautical information.

[\(See IEM 15 9.3\)](#)

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**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**SUBPART J**

**CHAPTER 10 - ELECTRONIC TERRAIN AND  
OBSTACLE DATA**

[\(See IEM 15 10\)](#)

**BCAR 15 10.1 Coverage areas and requirements  
for data provision**

**BCAR 15 10.1.1** The coverage areas for sets of electronic terrain and obstacle data shall be specified as:

- Area 1: the entire territory of a State;
- Area 2: within the vicinity of an aerodrome, subdivided as follows;
- Area 2a: a rectangular area around a runway that comprises the runway strip plus any clearway that exists.
- Area 2b: an area extending from the ends of Area 2a in the direction of departure, with a length of 10 km and a splay of 15 per cent to each side;
- Area 2c: an area extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a; and
- Area 2d: an area outside the Areas 2a, 2b and 2c up to a distance of 45 km from the aerodrome reference point, or to an existing TMA boundary, whichever is nearest;
- Area 3: the area bordering an aerodrome movement area that extends horizontally from the edge of a runway to 90 m from the runway centre line and 50 m from the edge of all other parts of the aerodrome movement area.
- Area 4: The area extending 900 m prior to the runway threshold and 60 m each side of the extended runway centre line in the direction of the approach on a precision approach runway, Category II or III.

[\(See IEM 15 10.1.1\)](#)

**BCAR 15 10.1.2** Where the terrain at a distance greater than 900 m (3 000 ft) from the runway

threshold is mountainous or otherwise significant, the length of Area 4 should be extended to a distance not exceeding 2 000 m (6 500 ft) from the runway threshold.

**BCAR 15 10.1.3** Electronic terrain data shall be provided for Area 1. The obstacle data shall be provided for obstacles in Area 1 higher than 100 m above ground.

**BCAR 15 10.1.4** From 12 November 2015, at aerodromes regularly used by international civil aviation, electronic obstacle data shall be provided for all obstacles within Area 2 that are assessed as being a hazard to air navigation.

**BCAR 15 10.1.5** From 12 November 2015, at aerodromes regularly used by international civil aviation, electronic terrain and obstacle data shall be provided for:

- a) Area 2a, for those obstacles that penetrate the relevant obstacle data collection surface specified in ICAO ANNEX 15 Appendix 8;
- b) penetrations of the take-off flight path area obstacle identification surfaces; and
- c) penetrations of the aerodrome obstacle limitation surfaces.

[\(See IEM 15 10.1.5\)](#)

**BCAR 15 10.1.6** At aerodromes regularly used by international civil aviation, electronic terrain and obstacle data should be provided for Areas 2b, 2c and 2d for obstacles and terrain that penetrate the relevant obstacle data collection surface specified in ICAO ANNEX 15 Appendix 8, except that data need not be collected for obstacles less than a height of 3 m above ground in Area 2b and less than a height of 15 m above ground in Area 2c.

**BCAR 15 10.1.7** At aerodromes regularly used by international civil aviation, electronic terrain and obstacle data should be provided for Area 3 for terrain and obstacles that penetrate the relevant obstacle data collection surface specified in ICAO ANNEX 15 Appendix 8.

**BCAR 15 10.1.8** At aerodromes regularly used by international civil aviation, electronic terrain and obstacle data shall be provided for Area 4 for terrain



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

and obstacles that penetrate the relevant obstacle data collection surface specified in ICAO ANNEX 15 Appendix 8, for all runways where precision approach Category II or III operations have been established and where detailed terrain information is required by operators to enable them to assess the effect of terrain on decision height determination by use of radio altimeters.

[\(See IEM 15 10.1.8\)](#)

**BCAR 15 10.1.9** Where additional electronic obstacle or terrain data is collected to meet other aeronautical requirements, the obstacle and terrain data sets should be expanded to include these additional data.

**BCAR 15 10.1.10** Arrangements should be made for the coordination of providing Area 2 electronic terrain and obstacle data for adjacent aerodromes where their respective coverage Areas overlap to assure that the data for the same obstacle or terrain is correct.

**BCAR 15 10.1.11** At those aerodromes located near territorial boundaries, arrangements should be made among States concerned to share Area 2 electronic terrain and obstacle data.

**10.2 Terrain data set — content, numerical specification and structure**

**BCAR 15 10.2.1** A terrain data set shall contain digital sets of data representing terrain surface in the form of continuous elevation values at all intersections (points) of a defined grid, referenced to common datum. A terrain grid shall be angular or linear and shall be of regular or irregular shape.

[\(See IEM 15 10.2.1\)](#)

**BCAR 15 10.2.2** Sets of electronic terrain data shall include spatial (position and elevation), thematic and temporal aspects for the surface of the Earth containing naturally occurring features such as mountains, hills, ridges, valleys, bodies of water, and excluding obstacles. In practical terms, depending on the acquisition method used, this shall represent the continuous surface that exists at the bare Earth, the top of the canopy or something in-between, also known as “first reflective surface”.

**BCAR 15 10.2.3** In terrain data sets, only one feature type, i.e. terrain, shall be provided. Feature

attributes describing terrain shall be those listed in Table A8-3. The terrain feature attributes listed in Table A8-3 represent the minimum set of terrain attributes, and those annotated as mandatory shall be recorded in the terrain data set.

**BCAR 15 10.2.4** Electronic terrain data for each area shall conform to the applicable numerical requirements in ICAO ANNEX 15 Appendix 8, Table A8-1.

**BCAR 15 10.3 Obstacle data set — content, numerical specification and structure**

**BCAR 15 10.3.1** Obstacle data shall comprise the digital representation of the vertical and horizontal extent of the obstacle. Obstacles shall not be included in terrain data sets. Obstacle data elements are features that shall be represented in the data sets by points, lines or polygons.

**BCAR 15 10.3.2** In an obstacle data set, all defined obstacle feature types shall be provided and each of them shall be described according to the list of mandatory attributes provided in ICAO ANNEX 15 Appendix 8, Table A8-4.

[\(See IEM 15 10.3.2\)](#)

**BCAR 15 10.3.3** Electronic obstacle data for each area shall conform to the applicable numerical requirements in ICAO ANNEX 15 Appendix 8, Table A8-2.

**BCAR 15 10.4 Terrain and obstacle data product specifications**

**BCAR 15 10.4.1** To allow and support the interchange and use of sets of electronic terrain and obstacle data among different data providers and data users, the ISO 19100 series of standards for geographic information shall be used as a general data modeling framework.

**BCAR 15 10.4.2** A comprehensive statement of available electronic terrain and obstacle data sets shall be provided in the form of terrain data product specifications as well as obstacle data product specifications on which basis air navigation users will be able to evaluate the products and determine whether they fulfil the requirements for their intended use (application).

[\(See IEM 15 10.4.2\)](#)



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**BCAR 15 10.4.3** Each terrain data product specification shall include an overview, a specification scope, data product identification, data content and structure, reference system, data quality, data capture, data maintenance, data portrayal, data product delivery, additional information, and metadata.

**BCAR 15 10.4.4** The overview of terrain data product specification or obstacle data product specification shall provide an informal description of the product and shall contain general information about the data product. Specification of terrain data may not be homogenous across the whole data product but may vary for different parts of the data sets. For each such subset of data, a specification scope shall be identified. Identification information concerning both terrain and obstacle data products shall include the title of the product; a brief narrative summary of the content, purpose, and spatial resolution if appropriate (a general statement about the density of spatial data); the geographic area covered by the data product; and supplemental information.

**BCAR 15 10.4.5** Content information of feature-based terrain data sets or of feature-based obstacle data sets shall each be described in terms of an application schema and a feature catalogue. Application schema shall provide a formal description of the data structure and content of data sets while the feature catalogue shall provide the semantics of all feature types together with their attributes and attribute value domains, association types between feature types and feature operations, inheritance relations and constraints. Coverage is considered a subtype of a feature and can be derived from a collection of features that have common attributes. Both terrain and obstacle data product specifications shall identify clearly the coverage and/or imagery they include and shall provide a narrative description of each of them.

[\(See IEM 15 10.4.5\)](#)

**BCAR 15 10.4.6** Both terrain data product specifications and obstacle data product specifications shall include information that identifies the reference system used in the data product. This shall include the spatial reference system and temporal reference system. Additionally, both data product specifications shall

identify the data quality requirements for each data product. This shall include a statement on acceptable conformance quality levels and corresponding data quality measures. This statement shall cover all the data quality elements and data quality sub-elements, even if only to state that a specific data quality element or sub-element is not applicable.

[\(See IEM 15 10.4.6\)](#)

**BCAR 15 10.4.7** Terrain data product specifications shall include a data capture statement which shall be a general description of the sources and of processes applied for the capture of terrain data. The principles and criteria applied in the maintenance of terrain data sets and obstacle data sets shall also be provided with the data specifications, including the frequency with which data products are updated. Of particular importance shall be the maintenance information of obstacle data sets and an indication of the principles, methods and criteria applied for obstacle data maintenance.

**BCAR 15 10.4.8** Terrain data product specifications shall contain information on how data held with data sets is presented, i.e. as a graphic output, as a plot or as an image. The product specifications for both terrain and obstacles shall also contain data product delivery information which shall include delivery formats and delivery medium information.

**BCAR 15 10.4.9** The core terrain and obstacle metadata elements shall be included in the data product specifications. Any additional metadata items required to be supplied shall be stated in each product specification together with the format and encoding of the metadata.

[\(See IEM 15 10.4.9\)](#)

**BCAR 15 10.4.10** The obstacle data product specification, supported by geographical coordinates for each aerodrome included within the data set, shall describe the following areas:

- Areas 2a, 2b, 2c, 2d;
- the take-off flight path area; and
- the obstacle limitation surfaces.





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

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# **APPENDICES**





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**APPENDIX 1. CONTENTS OF AERONAUTICAL  
INFORMATION PUBLICATION (AIP)**  
(see Chapter 4)

**PART 1 — GENERAL (GEN)**

If an AIP is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of AIP Amendments, record of AIP Supplements, checklist of AIP pages and list of current hand amendments must be included in each volume.

**GEN 0.1 Preface**

Brief description of the Aeronautical Information Publication (AIP), including:

- 1) name of the publishing authority;
- 2) applicable ICAO documents;
- 3) the AIP structure and established regular amendment interval; and
- 4) service to contact in case of detected AIP errors or omissions.

**GEN 0.2 Records of AIP Amendments**

A record of AIP Amendments and AIRAC AIP Amendments (published in accordance with the AIRAC system) containing:

- 1) amendment number;
- 2) publication date;
- 3) date inserted (for the AIRAC AIP Amendments, effective date); and
- 4) initials of officer who inserted the amendment.

**GEN 0.3 Record of AIP Supplements**

A record of issued AIP Supplements containing:

- 1) Supplement number;

- 2) Supplement subject;
- 3) AIP section(s) affected;
- 4) period of validity; and
- 5) cancellation record.

**GEN 0.4 Checklist of AIP pages**

A checklist of AIP pages containing:

- 1) page number/chart title; and
- 2) publication or effective date (day, month by name and year) of the aeronautical information.

**GEN 0.5 List of hand amendments to the AIP**

A list of current hand amendments to the AIP containing:

- 1) AIP page(s) affected;
- 2) amendment text; and
- 3) AIP Amendment number by which a hand amendment was introduced.

**GEN 0.6 Table of contents to Part 1**

A list of sections and subsections contained in Part 1 — General (GEN).

Note.— Subsections may be listed alphabetically.

**GEN 1. NATIONAL REGULATIONS AND  
REQUIREMENTS**

**GEN 1.1 Designated authorities**

The addresses of designated authorities concerned with the facilitation of international air navigation (civil aviation, meteorology, customs, immigration, health, en-route and aerodrome/heliport charges, agricultural quarantine and aircraft accident investigation) containing, for each authority:

- 1) designated authority;
- 2) name of the authority;



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

- 3) postal address;
- 4) telephone number;
- 5) telefax number;
- 6) e-mail address;
- 7) aeronautical fixed service (AFS) address; and
- 8) website address, if available.

**GEN 1.2 Entry, transit and departure of aircraft**

Regulations and requirements for advance notification and applications for permission concerning entry, transit and departure of aircraft on international flights.

**GEN 1.3 Entry, transit and departure of passengers and crew**

Regulations (including customs, immigration and quarantine, and requirements for advance notification and applications for permission) concerning entry, transit and departure of non-immigrant passengers and crew.

**GEN 1.4 Entry, transit and departure of cargo**

Regulations (including customs, and requirements for advance notification and applications for permission) concerning entry, transit and departure of cargo.

Note.— Provisions for facilitating entry and departure for search, rescue, salvage, investigation, repair or salvage in connection with lost or damaged aircraft are detailed in section GEN 3.6, Search and rescue.

**GEN 1.5 Aircraft instruments, equipment and flight documents**

Brief description of aircraft instruments, equipment and flight documents, including:

- 1) instruments, equipment (including aircraft communication, navigation and surveillance equipment) and flight documents to be carried on aircraft, including any special requirement in addition to the provisions specified in BCAR OPS, Subpart K and L; and

- 2) emergency locator transmitter (ELT), signalling devices and life-saving equipment as presented in ICAO Annex 6, Part I, 6.6 and Part II, 6.4 where so determined by regional air navigation meetings, for flights over designated land areas.

**GEN 1.6 Summary of national regulations and international agreements/conventions**

A list of titles and references and, where applicable, summaries of national regulations affecting air navigation, together with a list of international agreements/conventions ratified by State.

**GEN 1.7 Differences from ICAO Standards, Recommended Practices and Procedures**

A list of significant differences between national regulations and practices of the State and related ICAO provisions, including:

- 1) provision affected (Annex and edition number, paragraph); and
- 2) difference in full text.

All significant differences must be listed under this subsection. All Annexes must be listed in numerical order even if there is no difference to an Annex, in which case a NIL notification must be provided. National differences or the degree of non-application of the regional supplementary procedures (SUPPS) must be notified immediately following the Annex to which the supplementary procedure relates.

**GEN 2. TABLES AND CODES**

**GEN 2.1 Measuring system, aircraft markings, holidays**

**GEN 2.1.1 Units of measurement**

Description of units of measurement used including table of units of measurement.

**GEN 2.1.2 Temporal reference system**

Description of the temporal reference system (calendar and time system) employed, together with an indication of whether or not daylight saving hours





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

are employed and how the temporal reference system is presented throughout the AIP.

**GEN 2.1.3 Horizontal reference system**

Brief description of the horizontal (geodetic) reference system used, including:

- 1) name/designation of the reference system;
- 2) identification of the projection;
- 3) identification of the ellipsoid used;
- 4) identification of the datum used;
- 5) area(s) of application; and
- 6) an explanation, if applicable, of the asterisk used to identify those coordinates that do not meet BCAR ATS and BCAR 14 accuracy requirements.

**GEN 2.1.4 Vertical reference system**

Brief description of the vertical reference system used, including:

- 1) name/designation of the reference system;
- 2) description of the geoid model used including the parameters required for height transformation between the model used and EGM-96; and
- 3) an explanation, if applicable, of the asterisk used to identify those elevations/geoid undulations that do not meet BCAR 14 accuracy requirements.

**GEN 2.1.5 Aircraft nationality and registration marks**

Indication of aircraft nationality and registration marks adopted by the State.

**GEN 2.1.6 Public holidays**

A list of public holidays with indication of services being affected.

**GEN 2.2 Abbreviations used in AIS publications**

A list of alphabetically arranged abbreviations and their respective significations used by the State in its AIP and in the distribution of aeronautical information/data with appropriate annotation for those

national abbreviations that are different from those contained in the *Procedures for AirNavigation Services — ICAO Abbreviations and Codes* (PANS-ABC, Doc 8400).

Note.— A list of alphabetically arranged definitions/glossary of terms may also be added.

**GEN 2.3 Chart symbols**

A list of chart symbols arranged according to the chart series where symbols are applied.

**GEN 2.4 Location indicators**

A list of alphabetically arranged location indicators assigned to the locations of aeronautical fixed stations to be used for encoding and decoding purposes. An annotation to locations not connected to the Aeronautical Fixed Service (AFS) must be provided.

**GEN 2.5 List of radio navigation aids**

A list of radio navigation aids arranged alphabetically, containing:

- 1) identifier;
- 2) name of the station;
- 3) type of facility/aid; and
- 4) indication whether aid serves en-route (E), aerodrome (A) or dual (AE) purposes.

**GEN 2.6 Conversion tables**

Tables for conversion between:

- 1) nautical miles and kilometres and vice versa;
- 2) feet and metres and vice versa;
- 3) decimal minutes of arc and seconds of arc and vice versa; and
- 4) other conversion tables, as appropriate.

**GEN 2.7 Sunrise/sunset tables**

Brief description of criteria used for determination of the times given in the sunrise/sunset tables, together



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

with an alphabetical list of locations for which the times are given with a reference to the related page in the table and the sunrise/sunset tables for the selected stations/locations, including:

- 1) station name;
- 2) ICAO location indicator;
- 3) geographical coordinates in degrees and minutes;
- 4) date(s) for which times are given;
- 5) time for the beginning of morning civil twilight;
- 6) time for sunrise;
- 7) time for sunset; and
- 8) time for the end of evening civil twilight.

**GEN 3. SERVICES**

**GEN 3.1 Aeronautical information services**

**GEN 3.1.1 Responsible service**

Description of the Aeronautical Information Service (AIS) provided and its major components, including:

- 1) service/unit name;
- 2) postal address;
- 3) telephone number;
- 4) telefax number;
- 5) e-mail address;
- 6) AFS address;
- 7) website address, if available;
- 8) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
- 9) an indication if service is not H24.

**GEN 3.1.2 Area of responsibility**

The area of responsibility for the aeronautical information service.

**GEN 3.1.3 Aeronautical publications**

Description of the elements of the Integrated Aeronautical Information Package, including:

- 1) AIP and related amendment service;
- 2) AIP Supplements;
- 3) AIC;
- 4) NOTAM and pre-flight information bulletins (PIB);
- 5) checklists and lists of valid NOTAM; and
- 6) how they may be obtained.

When an AIC is used to promulgate publication prices that must be indicated in this section of the AIP.

**GEN 3.1.4 AIRAC system**

Brief description of the AIRAC system provided including a table of present and near future AIRAC dates.

**GEN 3.1.5 Pre-flight information service at aerodromes/heliports**

A list of aerodromes/heliports at which pre-flight information is routinely available, including an indication of relevant:

- 1) elements of the Integrated Aeronautical Information Packages held;
- 2) maps and charts held; and
- 3) general area of coverage of such data.

**GEN 3.1.6 Electronic terrain and obstacle data**

Details of how electronic terrain and obstacle data may be obtained, containing:



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

- 1) name of the individual, service or organization responsible;
- 2) street address and e-mail address of the individual, service or organization responsible;
- 3) telefax number of the individual, service or organization responsible;
- 4) contact telephone number of the individual, service or organization responsible;
- 5) hours of service (time period including time zone when contact can be made);
- 6) online information that can be used to contact the individual, service or organization; and
- 7) supplemental information, if necessary, on how and when to contact the individual, service or organization.

**GEN 3.2 Aeronautical charts**

**GEN 3.2.1 Responsible service(s)**

Description of service(s) responsible for the production of aeronautical charts, including:

- 1) service name;
- 2) postal address;
- 3) telephone number;
- 4) telefax number;
- 5) e-mail address;
- 6) AFS address;
- 7) website address, if available;
- 8) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
- 9) an indication if service is not H24.

**GEN 3.2.2 Maintenance of charts**

Brief description of how aeronautical charts are revised and amended.

**GEN 3.2.3 Purchase arrangements**

Details of how charts may be obtained, containing:

- 1) service/sales agency(ies);
- 2) postal address;
- 3) telephone number;
- 4) telefax number;
- 5) e-mail address;
- 6) AFS address; and
- 7) website address, if available.

**GEN 3.2.4 Aeronautical chart series available**

A list of aeronautical chart series available followed by a general description of each series and an indication of the intended use.

**GEN 3.2.5 List of aeronautical charts available**

A list of aeronautical charts available, including:

- 1) title of series;
- 2) scale of series;
- 3) name and/or number of each chart or each sheet in a series;
- 4) price per sheet; and
- 5) date of latest revision.

**GEN 3.2.6 Index to the World Aeronautical Chart (WAC) — ICAO 1:1 000 000**

An index chart showing coverage and sheet layout for the WAC 1:1 000 000 produced by a State. If Aeronautical Chart — ICAO 1:500 000 is produced instead of WAC 1:1 000 000, index charts must be used to indicate coverage and sheet layout for the Aeronautical Chart — ICAO 1:500 000.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**GEN 3.2.7 Topographical charts**

Details of how topographical charts may be obtained, containing:

- 1) name of service/agency(ies);
- 2) postal address;
- 3) telephone number;
- 4) telefax number;
- 5) e-mail address;
- 6) AFS address; and
- 7) website address, if available.

**GEN 3.2.8 Corrections to charts not contained in the AIP**

A list of corrections to aeronautical charts not contained in the AIP, or an indication where such information can be obtained.

**GEN 3.3 Air traffic services**

**GEN 3.3.1 Responsible service**

Description of the air traffic service and its major components, including:

- 1) service name;
- 2) postal address;
- 3) telephone number;
- 4) telefax number;
- 5) e-mail address;
- 6) AFS address;
- 7) website address, if available;
- 8) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and

- 9) an indication if service is not H24.

**GEN 3.3.2 Area of responsibility**

Brief description of area of responsibility for which air traffic services are provided.

**GEN 3.3.3 Types of services**

Brief description of main types of air traffic services provided.

**GEN 3.3.4 Coordination between the operator and ATS**

General conditions under which coordination between the operator and air traffic services is effected.

**GEN 3.3.5 Minimum flight altitude**

The criteria used to determine minimum flight altitudes.

**GEN 3.3.6 ATS units address list**

A list of ATS units and their addresses arranged alphabetically, containing:

- 1) unit name  
;
- 2) postal address;
- 3) telephone number;
- 4) telefax number;
- 5) e-mail address;
- 6) AFS address; and
- 7) website address, if available.

**GEN 3.4 Communication services**

**GEN 3.4.1 Responsible service**

Description of the service responsible for the provision of telecommunication and navigation facilities, including:

- 1) service name;



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

- 2) postal address;
- 3) telephone number;
- 4) telefax number;
- 5) e-mail address;
- 6) AFS address;
- 7) website address, if available;
- 8) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
- 9) an indication if service is not H24.

**GEN 3.4.2 Area of responsibility**

Brief description of area of responsibility for which telecommunication service is provided.

**GEN 3.4.3 Types of service**

Brief description of the main types of service and facilities provided, including:

- 1) radio navigation services;
- 2) voice and/or data link services;
- 3) broadcasting service;
- 4) language(s) used; and
- 5) an indication of where detailed information can be obtained.

**GEN 3.4.4 Requirements and conditions**

Brief description concerning the requirements and conditions under which the communication service is available.

**GEN 3.5 Meteorological services**

**GEN 3.5.1 Responsible service**

Brief description of the meteorological service responsible for the provision of meteorological information, including:

- 1) service name;
- 2) postal address;
- 3) telephone number;
- 4) telefax number;
- 5) e-mail address;
- 6) AFS address;
- 7) website address, if available;

8) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and

9) an indication if service is not H24.

**GEN 3.5.2 Area of responsibility**

Brief description of area and/or air routes for which meteorological service is provided.

**GEN 3.5.3 Meteorological observations and reports**

Detailed description of the meteorological observations and reports provided for international air navigation, including:

- 1) name of the station and the ICAO location indicator;
- 2) type and frequency of observation including an indication of automatic observing equipment;
- 3) types of meteorological reports (e.g. METAR) and availability of a trend forecast;
- 4) specific type of observation system and number of observation sites used to observe and report surface wind, visibility, runway visual range, cloud base, temperature and, where applicable, wind shear (e.g. anemometer at intersection of runways, transmissometer next to touchdown zone, etc.);



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

- 5) hours of operation; and
- 6) indication of aeronautical climatological information available.

Description of the meteorological watch provided within flight information regions or control areas for which air traffic services are provided, including a list of the meteorological watch offices with:

**GEN 3.5.4 Types of services**

Brief description of the main types of service provided, including details of briefing, consultation, display of meteorological information, flight documentation available for operators and flight crew members, and of the methods and means used for supplying the meteorological information.

- 1) name of the meteorological watch office, ICAO location indicator;
- 2) hours of service;
- 3) flight information region(s) or control area(s) served;
- 4) SIGMET validity periods;
- 5) specific procedures applied to SIGMET information (e.g. for volcanic ash and tropical cyclones);
- 6) procedures applied to AIRMET information (in accordance with relevant regional air navigation agreements);
- 7) the air traffic services unit(s) provided with SIGMET and AIRMET information; and
- 8) additional information (e.g. concerning any limitation of service, etc.).

**GEN 3.5.5 Notification required from operators**

Minimum amount of advance notice required by the meteorological authority from operators in respect of briefing, consultation and flight documentation and other meteorological information they require or change.

**GEN 3.5.6 Aircraft reports**

As necessary, requirements of the meteorological authority for the making and transmission of aircraft reports.

**GEN 3.5.7 VOLMET service**

Description of VOLMET and/or D-VOLMET service, including:

- 1) name of transmitting station;
- 2) call sign or identification and abbreviation for the radio communication emission;
- 3) frequency or frequencies used for broadcast;
- 4) broadcasting period;
- 5) hours of service;
- 6) list of aerodromes/heliports for which reports and/or forecasts are included; and
- 7) reports, forecasts and SIGMET information included and remarks.

**GEN 3.5.9 Other automated meteorological services**

Description of available automated services for the provision of meteorological information (e.g. automated pre-flight information service accessible by telephone and/or computer modem) including:

- 1) service name;
- 2) information available;
- 3) areas, routes and aerodromes covered; and
- 4) telephone and telefax number(s), e-mail address, and, if available, website address.

**GEN 3.6 Search and rescue**

**GEN 3.6.1 Responsible service(s)**

**GEN 3.5.8 SIGMET and AIRMET service**

Brief description of service(s) responsible for the provision of search and rescue (SAR), including:



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

1) service/unit name;

available and has no particular training or preparation for SAR work.

2) postal address;

GEN 3.6.6 Procedures and signals used

3) telephone number;

Brief description of the procedures and signals employed by rescue aircraft and a table showing the signals to be used by survivors.

4) telefax number;

5) e-mail address;

6) AFS address;

**GEN 4. CHARGES FOR  
AERODROMES/HELIPORTS AND  
AIR NAVIGATION SERVICES**

7) website address, if available; and

Reference may be made to where details of actual charges may be found, if not itemized in this chapter.

8) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed.

**GEN 4.1 Aerodrome/heliport charges**

**GEN 3.6.2 Area of responsibility**

Brief description of area of responsibility within which search and rescue services are provided.

Brief description of type of charges which may be applicable at aerodromes/heliports available for international use, including:

**GEN 3.6.3 Types of service**

Brief description and geographical portrayal, where appropriate, of the type of service and facilities provided including indications where SAR aerial coverage is dependent upon significant deployment of aircraft.

1) landing of aircraft;

2) parking, hangarage and long-term storage of aircraft;

3) passenger service;

4) security;

5) noise-related items;

6) other (customs, health, immigration, etc.);

7) exemptions/reductions; and

8) methods of payment.

**GEN 3.6.4 SAR agreements**

Brief description of SAR agreements in force, including provisions for facilitating entry and departure of other States' aircraft or search, rescue, salvage, repair or salvage in connection with lost or damaged aircraft, either with airborne notification only or after flight plan notification.

**GEN 4.2 Air navigation services charges**

**GEN 3.6.5 Conditions of availability**

Brief description of provisions for search and rescue, including the general conditions under which the service and facilities are available for international use, including an indication of whether a facility available for search and rescue is specialized in SAR techniques and functions, or is specially used for other purposes but adapted for SAR purposes by training and equipment, or is only occasionally

Brief description of charges which may be applicable to air navigation services provided for international use, including:

1) approach control;

2) route air navigation services;



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

- 3) cost basis for air navigation services and exemptions/reductions; and
- 4) methods of payment.

Appendix 4, appropriately annotated to indicate those airspace classes not used by the State.

**ENR 1.5 Holding, approach and departure procedures**

**PART 2 — EN-ROUTE (ENR)**

ENR 1.5.1 General

If an AIP is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of AIP Amendments, record of AIP Supplements, checklist of AIP pages and list of current hand amendments must be included in each volume. In the case of an AIP being published as one volume, the annotation “not applicable” must be entered against each of the above subsections.

The requirement is for a statement concerning the criteria on which holding, approach and departure procedures are established. If different from ICAO provisions, the requirement is for presentation of criteria used in a tabular form.

Reference must be made in the appropriate subsection to indicate that differences between national regulations and ICAO SARPs and procedures exist and that they are detailed in GEN 1.7.

ENR 1.5.2 Arriving flights

The requirement is to present procedures (conventional or area navigation or both) for arriving flights which are common to flights into or within the same type of airspace. If different procedures apply within a terminal airspace, a note to this effect must be given together with a reference to where the specific procedures can be found.

**ENR 0.6 Table of contents to Part 2**

A list of sections and subsections contained in Part 2 — En-route.

Note.— Subsections may be listed alphabetically.

ENR 1.5.3 Departing flights

The requirement is to present procedures (conventional or area navigation or both) for departing flights which are common to flights departing from any aerodrome/heliport.

**ENR 1 GENERAL RULES AND PROCEDURES**

**ENR 1.1 General rules**

The requirement is for publication of the general rules as applied within the State.

**ENR 1.6 ATS surveillance services and procedures**

ENR 1.6.1 Primary radar

**ENR 1.2 Visual flight rules**

The requirement is for publication of the visual flight rules as applied within the State.

Description of primary radar services and procedures, including:

- 1) supplementary services;
- 2) the application of radar control service;
- 3) radar and air-ground communication failure procedures;
- 4) voice and CPDLC position reporting requirements; and
- 5) graphic portrayal of area of radar coverage.

**ENR 1.3 Instrument flight rules**

The requirement is for publication of the instrument flight rules as applied within the State.

**ENR 1.4 ATS airspace classification**

The description of ATS airspace classes in the form of the ATS airspace classification table in BCAR ATS,





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**ENR 1.6.2 Secondary surveillance radar (SSR)**

Description of secondary surveillance radar (SSR) operating procedures, including:

- 1) emergency procedures;
- 2) air-ground communication failure and unlawful interference procedures;
- 3) the system of SSR code assignment;
- 4) voice and CPDLC position reporting requirements; and
- 5) graphic portrayal of area of SSR coverage.

Note.— The SSR description is of particular importance in areas or routes where the possibility of interception exists.

**ENR 1.6.3 Automatic dependent surveillance — broadcast (ADS-B)**

Description of automatic dependent surveillance — broadcast (ADS-B) operating procedures, including:

- 1) emergency procedures;
- 2) air-ground communication failure and unlawful interference procedures;
- 3) aircraft identification requirements;
- 4) voice and CPDLC position reporting requirements; and
- 5) graphic portrayal of area of ADS-B coverage.

Note.— The ADS-B description is of particular importance in areas or routes where the possibility of interception exists.

**ENR 1.7 Altimeter setting procedures**

The requirement is for a statement of altimeter setting procedures in use, containing:

- 1) brief introduction with a statement concerning the ICAO documents on which the procedures

are based together with differences to ICAO provisions, if any;

- 2) basic altimeter setting procedures;
- 3) description of altimeter setting region(s);
- 4) procedures applicable to operators (including pilots); and
- 5) table of cruising levels.

**ENR 1.8 Regional supplementary procedures**

The requirement is for presentation of regional supplementary procedures (SUPPS) affecting the entire area of responsibility, with properly annotated national differences, if any.

**ENR 1.9 Air traffic flow management**

Brief description of air traffic flow management (ATFM) system, including:

- 1) ATFM structure, service area, service provided, location of unit(s) and hours of operation;
- 2) types of flow messages and descriptions of the formats; and
- 3) procedures applicable for departing flights, containing:
  - a) service responsible for provision of information on applied ATFM measures;
  - b) flight plan requirements; and
  - c) slot allocations.

**ENR 1.10 Flight planning**

The requirement is to indicate any restriction, limitation or advisory information related to the flight planning stage which may assist the user in the presentation of the intended flight operation, including:

- 1) procedures for the submission of a flight plan;
- 2) repetitive flight plan system; and



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

3) changes to the submitted flight plan.

**ENR 1.11 Addressing of flight plan messages**

The requirement is for an indication, in tabular form, of the addresses allocated to flight plans, showing:

- 1) category of flight (IFR, VFR or both);
- 2) route (into or via FIR and/or TMA); and
- 3) message address.

**ENR 1.12 Interception of civil aircraft**

The requirement is for a complete statement of interception procedures and visual signals to be used with a clear indication of whether ICAO provisions are applied and if not, a complete presentation of differences.

**ENR 1.13 Unlawful interference**

The requirement is for presentation of appropriate procedures to be applied in case of unlawful interference.

**ENR 1.14 Air traffic incidents**

Description of air traffic incidents reporting system, including:

- 1) definition of air traffic incidents;
- 2) use of the "Air Traffic Incident Reporting Form";
- 3) reporting procedures (including in-flight procedures); and
- 4) purpose of reporting and handling of the form.

**ENR 2. AIR TRAFFIC SERVICES AIRSPACE**

**ENR 2.1 FIR, UIR, TMA**

Detailed description of flight information regions (FIR), upper flight information regions (UIR), and terminal control areas (TMA) including:

- 1) name, geographical coordinates in degrees and minutes of the FIR/UIR lateral limits and in degrees, minutes and seconds of the TMA

lateral limits, vertical limits and class of airspace;

- 2) identification of unit providing the service;
- 3) call sign of aeronautical station serving the unit and language(s) used, specifying the area and conditions, when and where to be used, if applicable;
- 4) frequencies supplemented by indications for specific purposes; and
- 5) remarks.

Control zones around military air bases not otherwise described in the AIP must be included in this subsection. Where the requirements of BCAR 02 concerning flight plans, two-way communications and position reporting apply to all flights in order to eliminate or reduce the need for interceptions and/or where the possibility of interception exists and the maintenance of guard on the VHF emergency channel 121.5 MHz is required, a statement to this effect must be included for the relevant area(s) or portion(s) thereof.

A description of designated areas over which the carriage of an emergency locator transmitter (ELT) is required and where aircraft shall continuously guard the VHF emergency frequency 121.5 MHz, except for those periods when aircraft are carrying out communications on other VHF channels or when airborne equipment limitations or cockpit duties do not permit simultaneous guarding of two channels.

Note.— Other types of airspace around civil aerodromes/heliports such as control zones and aerodrome traffic zones are described in the relevant aerodrome or heliport section.

**ENR 2.2 Other regulated airspace**

Where established, a detailed description of other types of regulated airspace and airspace classification.

**ENR 3. ATS ROUTES**

Note 1.— Bearings, tracks and radials are normally magnetic. In areas of high latitude, where it is determined by the appropriate authority that reference



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

to Magnetic North is impractical, another suitable reference, i.e. True North or Grid North, may be used.

Note 2.— Changeover points established at the midpoint between two radio navigation aids, or at the intersection of the two radials in the case of a route which changes direction between the navigation aids, need not be shown for each route segment if a general statement regarding their existence is made.

**ENR 3.1 Lower ATS routes**

Detailed description of lower ATS routes, including:

- 1) route designator, designation of the navigation specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;
- 2) tracks or VOR radials to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between each successive designated significant point and, in the case of VOR radials, changeover points;
- 3) upper and lower limits or minimum en-route altitudes, to the nearest higher 50 m or 100 ft, and airspace classification;
- 4) lateral limits and minimum obstacle clearance altitudes;
- 5) direction of cruising levels; and
- 6) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its log-on address, and any navigation specification(s) limitations.

Note.— In relation to BCAR ATS, Appendix 1, and for flight planning purposes, the defined navigation specification is not considered to be an integral part of the route designator.

**ENR 3.2 Upper ATS routes**

Detailed description of upper ATS routes, including:

- 1) route designator, designation of the navigation specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;
- 2) tracks or VOR radials to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between each successive designated significant point and, in the case of VOR radials, changeover points;
- 3) upper and lower limits and airspace classification;
- 4) lateral limits;
- 5) direction of cruising levels; and
- 6) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, and any navigation specification(s) limitations.

Note.— In relation to BCAR ATS, Appendix 1, and for flight planning purposes, defined navigation specification is not considered to be an integral part of the route designator.

**ENR 3.3 Area navigation routes**

Detailed description of area navigation (RNAV) routes, including:

- 1) route designator, designation of the navigation specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;
- 2) in respect of way points defining a VOR/DME area navigation route, additionally:
  - a) station identification of the reference VOR/DME;



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

- b) bearing to the nearest degree and the distance to the nearest tenth of a kilometre or tenth of a nautical mile from the reference VOR/DME, if the way point is not collocated with it; and
- c) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft);
- 3) geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between defined end-points and distance between each successive designated significant point;
- 4) upper and lower limits and airspace classification;
- 5) direction of cruising levels; and
- 6) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, and any navigation specification(s) limitations.

Note.— In relation to BCAR ATS, Appendix 1, and for flight planning purposes, defined navigation specification is not considered to be an integral part of the route designator.

**ENR 3.4 Helicopter routes**

Detailed description of helicopter routes, including:

- 1) route designator, designation of the navigation specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;
- 2) tracks or VOR radials to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between each successive designated significant point and, in the case of VOR radials, changeover points;
- 3) upper and lower limits and airspace classification;

- 4) minimum flight altitudes to the nearest higher 50 m or 100 ft; and
- 5) remarks, including an indication of the controlling unit and its operating frequency, and any navigation specification(s) limitations.

Note.— In relation to BCAR ATS, Appendix 1, and for flight planning purposes, defined navigation specification is not considered to be an integral part of the route designator.

**ENR 3.5 Other routes**

The requirement is to describe other specifically designated routes which are compulsory within specified area(s).

Note.— Arrival, transit and departure routes which are specified in connection with procedures for traffic to and from aerodromes/heliports need not be described since they are described in the relevant section of Part 3 — Aerodromes.

**ENR 3.6 En-route holding**

The requirement is for a detailed description of en-route holding procedures, containing:

- 1) holding identification (if any) and holding fix (navigation aid) or way point with geographical coordinates in degrees, minutes and seconds;
- 2) inbound track;
- 3) direction of the procedure turn;
- 4) maximum indicated airspeed;
- 5) minimum and maximum holding level;
- 6) time/distance outbound; and
- 7) indication of the controlling unit and its operating frequency.

Note.— Obstacle clearance criteria related to holding procedures are contained in Procedures for Air Navigation Services — Aircraft Operations (PANS-OPS, Doc 8168), Volumes I and II.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**ENR 4. RADIO NAVIGATION AIDS/SYSTEMS**

**ENR 4.1 Radio navigation aids — en-route**

A list of stations providing radio navigation services established for en-route purposes and arranged alphabetically by name of the station, including:

- 1) name of the station and magnetic variation to the nearest degree and for VOR, station declination to the nearest degree used for technical line-up of the aid;
- 2) identification;
- 3) frequency/channel for each element;
- 4) hours of operation;
- 5) geographical coordinates in degrees, minutes and seconds of the position of the transmitting antenna;
- 6) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft); and
- 7) remarks.

If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority must be indicated in the remarks column. Facility coverage must be indicated in the remarks column.

**ENR 4.2 Special navigation systems**

Description of stations associated with special navigation systems (DECCA, LORAN, etc.), including:

- 1) name of station or chain;
- 2) type of service available (master signal, slave signal, colour);
- 3) frequency (channel number, basic pulse rate, recurrence rate, as applicable);
- 4) hours of operation;

- 5) geographical coordinates in degrees, minutes and seconds of the position of the transmitting station; and

- 6) remarks.

If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority must be indicated in the remarks column. Facility coverage must be indicated in the remarks column.

**ENR 4.3 Global navigation satellite system (GNSS)**

A list and description of elements of the global navigation satellite system (GNSS) providing the navigation service established for en-route purposes and arranged alphabetically by name of the element, including:

- 1) the name of the GNSS element (GPS, GLONASS, EGNOS, MSAS, WAAS, etc.);
- 2) frequency(ies), as appropriate;
- 3) geographical coordinates in degrees, minutes and seconds of the nominal service area and coverage area; and
- 4) remarks.

If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority must be indicated in the remarks column.

**ENR 4.4 Name-code designators for significant points**

An alphabetically arranged list of name-code designators (five-letter pronounceable “name-code”) established for significant points at positions not marked by the site of radio navigation aids, including:

- 1) name-code designator;
- 2) geographical coordinates in degrees, minutes and seconds of the position; and
- 3) reference to ATS or other routes where the point is located.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**ENR 4.5 Aeronautical ground lights — en-route**

A list of aeronautical ground lights and other light beacons designating geographical positions which are selected by the States being significant, including:

- 1) name of the city or town or other identification of the beacon;
- 2) type of beacon and intensity of the light in thousands of candelas;
- 3) characteristics of the signal;
- 4) operational hours; and
- 5) remarks.

**ENR 5 NAVIGATION WARNINGS**

**ENR 5.1 Prohibited, restricted and danger areas**

Description, supplemented by graphic portrayal where appropriate, of prohibited, restricted and danger areas together with information regarding their establishment and activation, including:

- 1) identification, name and geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area/control zone boundaries;
- 2) upper and lower limits; and
- 3) remarks, including time of activity.

Type of restriction or nature of hazard and risk of interception in the event of penetration must be indicated in the remarks column.

**ENR 5.2 Military exercise and training areas and air defence identification zone (ADIZ)**

Description, supplemented by graphic portrayal where appropriate, of established military training areas and military exercises taking place at regular

intervals, and established air defence identification zone (ADIZ), including:

- 1) geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area/control zone boundaries;
- 2) upper and lower limits and system and means of activation announcements together with information pertinent to civil flights and applicable ADIZ procedures; and
- 3) remarks, including time of activity and risk of interception in the event of penetration of ADIZ.

**ENR 5.3 Other activities of a dangerous nature and other potential hazards**

**ENR 5.3.1 Other activities of a dangerous nature**

Description, supplemented by charts where appropriate, of activities that could affect flights including:

- 1) geographical coordinates in degrees and minutes of centre of area and range of influence;
- 2) vertical limits;
- 3) advisory measures;
- 4) authority responsible for the provision of information; and
- 5) remarks, including time of activity.

**ENR 5.3.2 Other potential hazards**

Description, supplemented by charts where appropriate, of other potential hazards that could affect flights (e.g. active volcanoes, nuclear power stations, etc.) including:

- 1) geographical coordinates in degrees and minutes of location of potential hazard;
- 2) vertical limits;
- 3) advisory measures;



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

- 4) authority responsible for the provision of information; and
- 5) remarks.

**ENR 5.4 Air navigation obstacles**

The list of obstacles affecting air navigation in Area 1 (the entire State territory), including:

- 1) obstacle identification or designation;
- 2) type of obstacle;
- 3) obstacle position, represented by geographical coordinates in degrees, minutes and seconds;
- 4) obstacle elevation and height to the nearest metre or foot;
- 5) type and colour of obstacle lighting (if any); and
- 6) if appropriate, an indication that the list of obstacles is available in electronic form, and a reference to GEN 3.1.6.

Note 1.— An obstacle whose height above the ground is 100 m and higher is considered an obstacle for Area 1.

Note 2.— Specifications governing the determination and reporting (accuracy of field work and data integrity) of positions (latitude and longitude) and elevations/heights for obstacles in Area 1 are given in BCAR ATS, Appendix 5, Tables 1 and 2, respectively.

**ENR 5.5 Aerial sporting and recreational activities**

Brief description, supplemented by graphic portrayal where appropriate, of intensive aerial sporting and recreational activities together with conditions under which they are carried out, including:

- 1) designation and geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area/control zone boundaries;
- 2) vertical limits;
- 3) operator/user telephone number; and

- 4) remarks, including time of activity.

Note.— This paragraph may be subdivided into different sections for each different category of activity, giving the indicated details in each case.

**ENR 5.6 Bird migration and areas with sensitive fauna**

Description, supplemented by charts where practicable, of movements of birds associated with migration, including migration routes and permanent resting areas and areas with sensitive fauna.

**ENR 6. EN-ROUTE CHARTS**

The requirement is for the En-route Chart — ICAO and index charts to be included in this section.

**PART 3 — AERODROMES (AD)**

If an AIP is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of AIP Amendments, record of AIP Supplements, checklist of AIP pages and list of current hand amendments must be included in each volume. In the case of an AIP being published as one volume, the annotation “not applicable” must be entered against each of the above subsections.

**AD 0.6 Table of contents to Part 3**

A list of sections and subsections contained in Part 3 — Aerodromes (AD).

Note.— Subsections may be listed alphabetically.

**AD 1. AERODROMES/HELIPORTS —  
INTRODUCTION**

**AD 1.1 Aerodrome/heliport availability**

Brief description of the State’s designated authority responsible for aerodromes and heliports, including:

- 1) the general conditions under which aerodromes/heliports and associated facilities are available for use;



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

- 2) a statement concerning the ICAO documents on which the services are based and a reference to the AIP location where differences, if any, are listed;
- 3) regulations, if any, concerning civil use of military air bases;
- 4) the general conditions under which the low visibility procedures applicable to Cat II/III operations at aerodromes, if any, are applied;
- 5) friction measuring device used and the runway friction level below which the State will declare the runway to be slippery when wet; and
- 6) other information of a similar nature.

**AD 1.2 Rescue and firefighting services and snow plan**

**AD 1.2.1 Rescue and firefighting services**

Brief description of rules governing the establishment of rescue and fire fighting services at aerodromes and heliports available for public use together with an indication of rescue and fire fighting categories established by a State.

**AD 1.2.2 Snow plan**

**N/A**

**AD 1.3 Index to aerodromes and heliports**

A list, supplemented by graphic portrayal, of aerodromes and heliports within a State, including:

- 1) aerodrome/heliport name and ICAO location indicator;
- 2) type of traffic permitted to use the aerodrome/heliport (international/national, IFR/VFR, scheduled/non-scheduled, private); and
- 3) reference to AIP, Part 3 subsection in which aerodrome/heliport details are presented.

**AD 1.4 Grouping of aerodromes/heliports**

Brief description of the criteria applied by the State in grouping aerodromes/heliports for the production/distribution/provision of information purposes (e.g. international/national; primary/secondary; major/other; civil/military; etc.).

**AD 1.5 Status of certification of aerodromes**

A list of aerodromes in the State, indicating the status of certification including:

- 1) aerodrome name and ICAO location indicator;
- 2) date and, if applicable, validity of certification; and
- 3) remarks, if any

**AD 2. AERODROMES**

**AD 2.1 Aerodrome location indicator and name**

The requirement is for the ICAO location indicator allocated to the aerodrome and the name of aerodrome. An ICAO location indicator must be an integral part of the referencing system applicable to all subsections in section AD 2.

**AD 2.2 Aerodrome geographical and administrative data**

The requirement is for aerodrome geographical and administrative data including:

- 1) aerodrome reference point (geographical coordinates in degrees, minutes and seconds) and its site;
- 2) direction and distance of aerodrome reference point from centre of the city or town which the aerodrome serves;
- 3) aerodrome elevation to the nearest metre or foot, and reference temperature;
- 4) geoid undulation at the aerodrome elevation position to the nearest metre or foot;
- 5) magnetic variation to the nearest degree, date of information and annual change;





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

- 6) name of aerodrome operator, address, telephone and telefax numbers, e-mail address, AFS address and, if available, website address;
- 7) types of traffic permitted to use the aerodrome (IFR/VFR); and
- 8) remarks.

**AD 2.3 Operational hours**

Detailed description of the hours of operation of services at the aerodrome, including:

- 1) aerodrome operator;
- 2) customs and immigration;
- 3) health and sanitation;
- 4) AIS briefing office;
- 5) ATS reporting office (ARO);
- 6) MET briefing office;
- 7) air traffic service;
- 8) fuelling;
- 9) handling;
- 10) security;
- 11) de-icing; and
- 12) remarks.

**AD 2.4 Handling services and facilities**

Detailed description of the handling services and facilities available at the aerodrome, including:

- 1) cargo-handling facilities;
- 2) fuel and oil types;
- 3) fuelling facilities and capacity;

- 4) de-icing facilities;
- 5) hangar space for visiting aircraft;
- 6) repair facilities for visiting aircraft; and
- 7) remarks.

**AD 2.5 Passenger facilities**

Brief description of passenger facilities available at the aerodrome, including:

- 1) hotel(s) at or in the vicinity of aerodrome;
- 2) restaurant(s) at or in the vicinity of aerodrome;
- 3) transportation possibilities;
- 4) medical facilities;
- 5) bank and post office at or in the vicinity of aerodrome;
- 6) tourist office; and
- 7) remarks.

**AD 2.6 Rescue and firefighting services**

Detailed description of the rescue and fire fighting services and equipment available at the aerodrome, including:

- 1) aerodrome category for firefighting;
- 2) rescue equipment;
- 3) *capability for removal of disabled aircraft*; and
- 4) remarks.

**AD 2.7 Seasonal availability — clearing**

Detailed description of the equipment and operational priorities established for the clearance of aerodrome movement areas, including:

- 1) type(s) of clearing equipment;



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

- 2) clearance priorities; and
- 3) remarks.

**AD 2.8 Aprons, taxiways and check locations/positions data**

Details related to the physical characteristics of aprons, taxiways and locations/positions of designated checkpoints, including:

- 1) surface and strength of aprons;
- 2) width, surface and strength of taxiways;
- 3) location and elevation to the nearest metre or foot of altimeter checkpoints;
- 4) location of VOR checkpoints;
- 5) position of INS checkpoints in degrees, minutes, seconds and hundredths of seconds; and
- 6) remarks.

If check locations/positions are presented on an aerodrome chart, a note to that effect must be provided under this subsection.

**AD 2.9 Surface movement guidance and control system and markings**

Brief description of the surface movement guidance and control system and runway and taxiway markings, including:

- 1) use of aircraft stand identification signs, taxiway guide lines and visual docking/parking guidancesystem at aircraft stands;
- 2) runway and taxiway markings and lights;
- 3) stop bars (if any); and
- 4) remarks.

**AD 2.10 Aerodrome obstacles**

Detailed description of obstacles, including:

- 1) obstacles in Area 2:

- a) obstacle identification or designation;
- b) type of obstacle;
- c) obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds;
- d) obstacle elevation and height to the nearest metre or foot;
- e) obstacle marking, and type and colour of obstacle lighting (if any);
- f) if appropriate, an indication that the list of obstacles is available in electronic form, and a reference to GEN 3.1.6; and
- g) NIL indication, if appropriate.

Note 1.— Chapter 10, 10.1.1, provides a description of Area 2 while ICAO ANNEX 15 Appendix 8, Figure A8-2, contains graphical illustrations of obstacle data collection surfaces and criteria used to identify obstacles in Area 2.

Note 2.— Specifications governing the determination and reporting (accuracy of field work and data integrity) of positions (latitude and longitude) and elevations for obstacles in Area 2 are given in BCAR ATS, Appendix 5, Tables 1 and 2, and in BCAR 14, Volume I, Appendix 5, Tables A5-1 and A5-2, respectively.

- 2) the absence of an Area 2 data set for the aerodrome is to be clearly stated and obstacle data are to be provided for:
  - a) obstacles that penetrate the obstacle limitation surfaces;
  - b) obstacles that penetrate the take-off flight path area obstacle identification surface; and
  - c) other obstacles assessed as being hazardous to air navigation.
- 3) indication that information on obstacles in Area 3 is not provided, or if provided:
  - a) obstacle identification or designation;



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

- b) type of obstacle;
  - c) obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds;
  - d) obstacle elevation and height to the nearest metre or foot;
  - e) obstacle marking, and type and colour of obstacle lighting (if any);
  - f) if appropriate, an indication that the list of obstacles is available in electronic form, and a reference to GEN 3.1.6; and
  - g) NIL indication, if appropriate.
- 6) types of flight documentation supplied and language(s) used in flight documentation;
  - 7) charts and other information displayed or available for briefing or consultation;
  - 8) supplementary equipment available for providing information on meteorological conditions, e.g. weather radar and receiver for satellite images;
  - 9) the air traffic services unit(s) provided with meteorological information; and
  - 10) additional information (e.g. concerning any limitation of service, etc.).

**AD 2.12 Runway physical characteristics**

Detailed description of runway physical characteristics, for each runway including:

Note 1.— Chapter 10, 10.1.1, provides a description of Area 3 while ICAO ANNEX 15 Appendix 8, Figure A8-3, contains graphical illustrations of obstacle data collection surfaces and criteria used to identify obstacles in Area 3.

Note 2.— Specifications governing the determination and reporting (accuracy of field work and data integrity) of positions (latitude and longitude) and elevations for obstacles in Area 3 are given in BCAR 14, Volume I, Appendix 5, Tables A5-1 and A5-2, respectively.

**AD 2.11 Meteorological information provided**

Detailed description of meteorological information provided at the aerodrome and an indication of which meteorological office is responsible for the service enumerated, including:

- 1) name of the associated meteorological office;
  - 2) hours of service and, where applicable, the designation of the responsible meteorological office outside these hours;
  - 3) office responsible for preparation of TAFs and periods of validity and interval of issuance of the forecasts;
  - 4) availability of the trend forecasts for the aerodrome, and interval of issuance;
  - 5) information on how briefing and/or consultation is provided;
- 1) designations;
  - 2) true bearings to one-hundredth of a degree;
  - 3) dimensions of runways to the nearest metre or foot;
  - 4) strength of pavement (PCN and associated data) and surface of each runway and associated stopways;
  - 5) geographical coordinates in degrees, minutes, seconds and hundredths of seconds for each threshold and runway end, and geoid undulation of:
    - thresholds of a non-precision approach runway to the nearest metre or foot; and
    - thresholds of a precision approach runway to the nearest tenth of a metre or tenth of a foot;
  - 6) elevations of:
    - thresholds of a non-precision approach runway to the nearest metre or foot; and
    - thresholds and the highest elevation of the touchdown zone of a precision approach



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

- runway to the nearest tenth of a metre or tenth of a foot;
- 7) slope of each runway and associated stopways;
  - 8) dimensions of stopway (if any) to the nearest metre or foot;
  - 9) dimensions of clearway (if any) to the nearest metre or foot;
  - 10) dimensions of strips;
  - 11) the existence of an obstacle-free zone; and
  - 12) remarks.
- 4) type of visual approach slope indicator system;
  - 5) length of runway touchdown zone lights;
  - 6) length, spacing, colour and intensity of runway centre line lights;
  - 7) length, spacing, colour and intensity of runway edge lights;
  - 8) colour of runway end lights and wing bars;
  - 9) length and colour of stopway lights; and
  - 10) remarks.

**AD 2.13 Declared distances**

Detailed description of declared distances to the nearest metre or foot for each direction of each runway, including:

- 1) runway designator;
- 2) take-off run available;
- 3) take-off distance available;
- 4) accelerate-stop distance available;
- 5) landing distance available; and
- 6) remarks.

If a runway direction cannot be used for take-off or landing, or both, because it is operationally forbidden, then this must be declared and the words “not usable” or the abbreviation “NU” entered (Annex 14, Volume I, Attachment A, Section 3).

**AD 2.14 Approach and runway lighting**

Detailed description of approach and runway lighting, including:

- 1) runway designator;
- 2) type, length and intensity of approach lighting system;
- 3) runway threshold lights, colour and wing bars;

**AD 2.15 Other lighting, secondary power supply**

Description of other lighting and secondary power supply, including:

- 1) location, characteristics and hours of operation of aerodrome beacon/identification beacon (if any);
- 2) location and lighting (if any) of anemometer/landing direction indicator;
- 3) taxiway edge and taxiway centre line lights;
- 4) secondary power supply including switch-over time; and
- 5) remarks.

**AD 2.16 Helicopter landing area**

Detailed description of helicopter landing area provided at the aerodrome, including:

- 1) geographical coordinates in degrees, minutes, seconds and hundredths of seconds and geoid undulation of the geometric centre of touchdown and lift-off (TLOF) or of each threshold of final approach and take-off (FATO) area (where appropriate):
  - for non-precision approaches, to the nearest metre or foot; and



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

- for precision approaches, to the nearest tenth of a metre or tenth of a foot;
- 2) TLOF and/or FATO area elevation:
  - for non-precision approaches, to the nearest metre or foot; and
  - for precision approaches, to the nearest tenth of a metre or tenth of a foot;
- 3) TLOF and FATO area dimensions to the nearest metre or foot, surface type, bearing strength and marking;
- 4) true bearings to one-hundredth of a degree of FATO;
- 5) declared distances available, to the nearest metre or foot;
- 6) approach and FATO lighting; and
- 7) remarks.

**AD 2.17 Air traffic services airspace**

Detailed description of air traffic services (ATS) airspace organized at the aerodrome, including:

- 1) airspace designation and geographical coordinates in degrees, minutes and seconds of the lateral limits;
- 2) vertical limits;
- 3) airspace classification;
- 4) call sign and language(s) of the ATS unit providing service;
- 5) transition altitude; and
- 6) remarks.

**AD 2.18 Air traffic services communication facilities**

Detailed description of air traffic services communication facilities established at the aerodrome, including:

- 1) service designation;

- 2) call sign;
- 3) channel(s);
- 4) logon address, as appropriate;
- 5) hours of operation; and
- 6) remarks.

**AD 2.19 Radio navigation and landing aids**

Detailed description of radio navigation and landing aids associated with the instrument approach and the terminal area procedures at the aerodrome, including:

- 1) type of aids, magnetic variation to the nearest degree, as appropriate, and type of supported operation for ILS/MLS, basicGNSS, SBAS, and GBAS and for VOR/ILS/MLS also station declination to the nearest degree used for technical line-up of the aid;
- 2) identification, if required;
- 3) frequency(ies), as appropriate;
- 4) hours of operation, as appropriate;
- 5) geographical coordinates in degrees, minutes, seconds and tenths of seconds of the position of the transmitting antenna, as appropriate;
- 6) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft) and of DME/P to the nearest 3 m (10 ft); and
- 7) remarks.

When the same aid is used for both en-route and aerodrome purposes, a description must also be given in section ENR 4. If the ground-based augmentation system (GBAS) serves more than one aerodrome, description of the aid must be provided under each aerodrome. If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority must be indicated in the remarks column. Facility coverage must be indicated in the remarks column.

**AD 2.20 Local traffic regulations**

Detailed description of regulations applicable to the traffic at the aerodrome including standard routes for



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

taxiing aircraft, parking regulations, school and training flights and similar but excluding flight procedures.

**AD 2.21 Noise abatement procedures**

Detailed description of noise abatement procedures established at the aerodrome.

**AD 2.22 Flight procedures**

Detailed description of the conditions and flight procedures, including radar and/or ADS-B procedures, established on the basis of airspace organization at the aerodrome. When established, detailed description of the low visibility procedures at the aerodrome, including:

- 1) runway(s) and associated equipment authorized for use under low visibility procedures;
- 2) defined meteorological conditions under which initiation, use and termination of low visibility procedures would be made; and
- 3) description of ground marking/lighting for use under low visibility procedures.

**AD 2.23 Additional information**

Additional information at the aerodrome, such as an indication of bird concentrations at the aerodrome, together with an indication of significant daily movement between resting and feeding areas, to the extent practicable.

**AD 2.24 Charts related to an aerodrome**

The requirement is for charts related to an aerodrome to be included in the following order:

- 1) Aerodrome/Heliport Chart — ICAO;
- 2) Aircraft Parking/Docking Chart — ICAO;
- 3) Aerodrome Ground Movement Chart — ICAO;
- 4) Aerodrome Obstacle Chart — ICAO Type A (for each runway);

- 5) Aerodrome Terrain and Obstacle Chart — ICAO (Electronic);
- 6) Precision Approach Terrain Chart — ICAO (precision approach Cat II and III runways);
- 7) Area Chart — ICAO (departure and transit routes);
- 8) Standard Departure Chart — Instrument — ICAO;
- 9) Area Chart — ICAO (arrival and transit routes);
- 10) Standard Arrival Chart — Instrument — ICAO;
- 11) ATC Surveillance Minimum Altitude Chart — ICAO;
- 12) Instrument Approach Chart — ICAO (for each runway and procedure type);
- 13) Visual Approach Chart — ICAO; and
- 14) bird concentrations in the vicinity of the aerodrome.

If some of the charts are not produced, a statement to this effect must be given in section GEN 3.2, Aeronautical charts.

Note.— A page pocket may be used in the AIP to include the Aerodrome Terrain and Obstacle Chart — ICAO (Electronic) on appropriate electronic media.

**AD 3. HELIPORTS**

When a helicopter landing area is provided at the aerodrome, associated data must be listed only under AD 2.16.

**AD 3.1 Heliport location indicator and name**

The requirement is for the ICAO location indicator assigned to the heliport and the name of heliport. An ICAO location indicator must be an integral part of the referencing system applicable to all subsections in section AD 3.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**AD 3.2 Heliport geographical and administrative data**

The requirement is for heliport geographical and administrative data, including:

- 1) heliport reference point (geographical coordinates in degrees, minutes and seconds) and its site;
- 2) direction and distance of heliport reference point from centre of the city or town which the heliport serves;
- 3) heliport elevation to the nearest metre or foot, and reference temperature;
- 4) geoid undulation at the heliport elevation position to the nearest metre or foot;
- 5) magnetic variation to the nearest degree, date of information and annual change;
- 6) name of heliport operator, address, telephone and telefax numbers, e-mail address, AFS address and, if available, website address;
- 7) types of traffic permitted to use the heliport (IFR/VFR); and
- 8) remarks.

**AD 3.3 Operational hours**

Detailed description of the hours of operation of services at the heliport, including:

- 1) heliport operator;
- 2) customs and immigration;
- 3) health and sanitation;
- 4) AIS briefing office;
- 5) ATS reporting office (ARO);
- 6) MET briefing office;
- 7) air traffic service;
- 8) fuelling;

- 9) handling;
- 10) security;
- 11) de-icing; and
- 12) remarks.

**AD 3.4 Handling services and facilities**

Detailed description of the handling services and facilities available at the heliport, including:

- 1) cargo-handling facilities;
- 2) fuel and oil types;
- 3) fuelling facilities and capacity;
- 4) de-icing facilities;
- 5) hangar space for visiting helicopter;
- 6) repair facilities for visiting helicopter; and
- 7) remarks.

**AD 3.5 Passenger facilities**

Brief description of passenger facilities available at the heliport, including:

- 1) hotel(s) at or in the vicinity of the heliport;
- 2) restaurant(s) at or in the vicinity of the heliport;
- 3) transportation possibilities;
- 4) medical facilities;
- 5) bank and post office at or in the vicinity of the heliport;
- 6) tourist office; and
- 7) remarks.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**AD 3.6 Rescue and firefighting services**

Detailed description of the rescue and fire fighting services and equipment available at the heliport, including:

- 1) heliport category for firefighting;
- 2) rescue equipment;
- 3) capability for removal of disabled helicopter; and
- 4) remarks.

**AD 3.7 Seasonal availability — clearing**

Detailed description of the equipment and operational priorities established for the clearance of heliport movement areas, including:

- 1) type(s) of clearing equipment;
- 2) clearance priorities; and
- 3) remarks.

**AD 3.8 Aprons, taxiways and check locations/positions data**

Details related to the physical characteristics of aprons, taxiways and locations/positions of designated checkpoints, including:

- 1) surface and strength of aprons, helicopter stands;
- 2) width, surface type and designation of helicopter ground taxiways;
- 3) width and designation of helicopter air taxiway and air transit route;
- 4) location and elevation to the nearest metre or foot of altimeter checkpoints;
- 5) location of VOR checkpoints;

6) position of INS checkpoints in degrees, minutes, seconds and hundredths of seconds; and

7) remarks.

If check locations/positions are presented on a heliport chart, a note to that effect must be provided under this subsection.

**AD 3.9 Markings and markers**

Brief description of final approach and take-off area and taxiway markings and markers, including:

- 1) final approach and take-off markings;
- 2) taxiway markings, air taxiway markers and air transit route markers; and
- 3) remarks.

**AD 3.10 Heliport obstacles**

Detailed description of obstacles, including:

- a) obstacle identification or designation;
- b) type of obstacle;
- c) obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds;
- d) obstacle elevation and height to the nearest metre or foot;
- e) obstacle marking, and type and colour of obstacle lighting (if any);
- f) if appropriate, an indication that the list of obstacles is available in electronic form, and a reference to GEN 3.1.6; and
- g) NIL indication, if appropriate.

**AD 3.11 Meteorological information provided**

Detailed description of meteorological information provided at the heliport and an indication of which meteorological office is responsible for the service enumerated, including:





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

- 1) name of the associated meteorological office;
  - 2) hours of service and, where applicable, the designation of the responsible meteorological office outside these hours;
  - 3) office responsible for preparation of TAFs, and periods of validity of the forecasts;
  - 4) availability of the trend forecasts for the heliport, and interval of issuance;
  - 5) information on how briefing and/or consultation is provided;
  - 6) type of flight documentation supplied and language(s) used in flight documentation;
  - 7) charts and other information displayed or available for briefing or consultation;
  - 8) supplementary equipment available for providing information on meteorological conditions, e.g. weather radar and receiver for satellite images;
  - 9) the air traffic services unit(s) provided with meteorological information; and
  - 10) additional information (e.g. concerning any limitation of service, etc.).
- 6) geographical coordinates in degrees, minutes, seconds and hundredths of seconds and geoid undulation of the geometric centre of TLOF or of each threshold of FATO (where appropriate):
    - for non-precision approaches, to the nearest metre or foot; and
    - for precision approaches, to the nearest tenth of a metre or tenth of a foot;
  - 7) TLOF and/or FATO slope and elevation:
    - for non-precision approaches, to the nearest metre or foot; and
    - for precision approaches, to the nearest tenth of a metre or tenth of a foot;
  - 8) dimensions of safety area;
  - 9) dimensions, to the nearest metre or foot, of helicopter clearway;
  - 10) the existence of an obstacle-free sector; and
  - 11) remarks.

**AD 3.12 Heliport data**

Detailed description of heliport dimensions and related information, including:

- 1) heliport type — surface-level, elevated or helideck;
- 2) touchdown and lift-off (TLOF) area dimensions to the nearest metre or foot;
- 3) true bearings to one-hundredth of a degree of final approach and take-off (FATO) area;
- 4) dimensions to the nearest metre or foot of FATO, and surface type;
- 5) surface and bearing strength in tonnes (1 000 kg) of TLOF;

**AD 3.13 Declared distances**

Detailed description of declared distances to the nearest metre or foot, where relevant for a heliport, including:

- 1) take-off distance available;
- 2) rejected take-off distance available;
- 3) landing distance available; and
- 4) remarks.

**AD 3.14 Approach and FATO lighting**

Detailed description of approach and FATO lighting, including:

- 1) type, length and intensity of approach lighting system;
- 2) type of visual approach slope indicator system;



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

- 3) characteristics and location of FATO area lights;
- 4) characteristics and location of aiming point lights;
- 5) characteristics and location of TLOF lightingsystem; and
- 6) remarks.

**AD 3.15 Other lighting, secondary power supply**

Description of other lighting and secondary power supply, including:

- 1) location, characteristics and hours of operation of heliport beacon;
- 2) location and lighting of wind direction indicator (WDI);
- 3) taxiway edge and taxiway centre line lights;
- 4) secondary power supply including switch-over time; and
- 5) remarks.

**AD 3.16 Air traffic services airspace**

Detailed description of air traffic services (ATS) airspace organized at the heliport, including:

- 1) airspace designation and geographical coordinates in degrees, minutes and seconds of the lateral limits;
- 2) vertical limits;
- 3) airspace classification;
- 4) call sign and language(s) of ATS unit providing service;
- 5) transition altitude; and
- 6) remarks.

**AD 3.17 Air traffic services communication facilities**

Detailed description of air traffic services, communication facilities established at the heliport, including:

- 1) service designation;
- 2) call sign;
- 3) frequency(ies);
- 4) hours of operation; and
- 5) remarks.

**AD 3.18 Radio navigation and landing aids**

Detailed description of radio navigation and landing aids associated with the instrument approach and the terminal area procedures at the heliport, including:

- 1) type of aids, magnetic variation (for VOR, station declination used for technical line-up of the aid) to the nearest degree, and type of operation for ILS, MLS, basic GNSS, SBAS, and GBAS;
- 2) identification, if required;
- 3) frequency(ies), as appropriate;
- 4) hours of operation, as appropriate;
- 5) geographical coordinates in degrees, minutes, seconds and tenths of seconds of the position of the transmitting antenna, as appropriate;
- 6) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft) and of DME/P to the nearest 3 m (10 ft); and
- 7) remarks.

When the same aid is used for both en-route and heliport purposes, a description must also be given in section ENR 4. If the ground-based augmentation system (GBAS) serves more than one heliport, description of the aid must be provided under each heliport. If the operating authority of the facility is other than the designated governmental agency, the name



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

of the operating authority must be indicated in the remarks column. Facility coverage must be indicated in the remarks column.

**AD 3.19 Local traffic regulations**

Detailed description of regulations applicable to traffic at the heliport, including standard routes for taxiing helicopters, parking regulations, school and training flights and similar but excluding flight procedures.

**AD 3.20 Noise abatement procedures**

Detailed description of noise abatement procedures established at the heliport.

**AD 3.21 Flight procedures**

Detailed description of the conditions and flight procedures, including radar and/or ADS-B procedures, established on the basis of airspace organization established at the heliport. When established, detailed description of the low visibility procedures at the heliport, including:

- 1) touchdown and lift-off (TLOF) area(s) and associated equipment authorized for use under low visibility procedures;
- 2) defined meteorological conditions under which initiation, use and termination of low visibility procedures would be made; and
- 3) description of ground marking/lighting for use under low visibility procedures.

**AD 3.22 Additional information**

Additional information about the heliport, such as an indication of bird concentrations at the heliport together with an indication of significant daily movement between resting and feeding areas, to the extent practicable.

**AD 3.23 Charts related to a heliport**

The requirement is for charts related to a heliport to be included in the following order:

- 1) Aerodrome/Heliport Chart — ICAO;

- 2) Area Chart — ICAO (departure and transit routes);
- 3) Standard Departure Chart — Instrument — ICAO;
- 4) Area Chart — ICAO (arrival and transit routes);
- 5) Standard Arrival Chart — Instrument — ICAO;
- 6) ATC Surveillance Minimum Altitude Chart — ICAO;
- 7) Instrument Approach Chart — ICAO (for each procedure type);
- 8) Visual Approach Chart — ICAO; and
- 9) bird concentrations in the vicinity of heliport.

If some of the charts are not produced, a statement to this effect must be given in section GEN 3.2, Aeronautical charts.





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

---

**APPENDIX 2 - RESERVED**

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**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**APPENDIX 3. ASHTAM FORMAT**

*(see Chapter 5, BCAR 5.2.4)*

**INSTRUCTIONS FOR THE COMPLETION OF THE ASHTAM FORMAT**

|                       |                                  |                                       |   |   |  |                          |  |  |                       |  |  |  |                  |  |  |  |
|-----------------------|----------------------------------|---------------------------------------|---|---|--|--------------------------|--|--|-----------------------|--|--|--|------------------|--|--|--|
| (COM heading)         | (PRIORITY INDICATOR)             | (ADDRESSEE INDICATOR(S)) <sup>1</sup> |   |   |  |                          |  |  |                       |  |  |  |                  |  |  |  |
|                       | (DATE AND TIME OF FILING)        |                                       |   |   |  | (ORIGINATOR'S INDICATOR) |  |  |                       |  |  |  |                  |  |  |  |
| (Abbreviated heading) | (VA* <sup>2</sup> SERIAL NUMBER) |                                       |   |   |  | (LOCATION INDICATOR)     |  |  | DATE/TIME OF ISSUANCE |  |  |  | (OPTIONAL GROUP) |  |  |  |
|                       | V                                | A                                     | ? | ? |  |                          |  |  |                       |  |  |  |                  |  |  |  |

|   |  |                 |
|---|--|-----------------|
| ASHTAM  |  | (SERIAL NUMBER) |
| (FLIGHT INFORMATION REGION AFFECTED)  |  | A)              |
| (DATE/TIME (UTC) OF ERUPTION)   |  | B)              |
| (VOLCANO NAME AND NUMBER)   |  | C)              |
| (VOLCANO LATITUDE/LONGITUDE OR VOLCANO RADIAL AND DISTANCE FROM NAVAID)   |  | D)              |
| (VOLCANO LEVEL OF ALERT COLOUR CODE, INCLUDING ANY PRIOR LEVEL OF ALERT COLOUR CODE) <sup>3</sup>   |  | E)              |
| (EXISTENCE AND HORIZONTAL/VERTICAL EXTENT OF VOLCANIC ASH CLOUD) <sup>4</sup>   |  | F)              |
| (DIRECTION OF MOVEMENT OF ASH CLOUD) <sup>4</sup>   |  | G)              |
| (AIR ROUTES OR PORTIONS OF AIR ROUTES AND FLIGHT LEVELS AFFECTED)   |  | H)              |
| (CLOSURE OF AIRSPACE AND/OR AIR ROUTES OR PORTIONS OF AIR ROUTES, AND ALTERNATIVE AIR ROUTES AVAILABLE)   |  | I)              |
| (SOURCE OF INFORMATION)   |  | J)              |
| (PLAIN-LANGUAGE REMARKS)  |  | K)              |
| <p>NOTES:</p> <ol style="list-style-type: none"> <li>See also Appendix 5 regarding addressee indicators used in predetermined distribution systems.</li> <li>*Enter ICAO nationality letter as given in ICAO Doc 7910, Part 2.</li> <li>See paragraph 3.5 below.</li> <li>Advice on the existence, extent and movement of volcanic ash cloud (G) and (H) may be obtained from the Volcanic Ash Advisory Centre(s) responsible for the FIR concerned.</li> <li>Item titles in brackets ( ) not to be transmitted.</li> </ol> |  |                 |

SIGNATURE OF ORIGINATOR *(not for transmission)*



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**INSTRUCTIONS FOR THE COMPLETION OF THE  
ASHTAM FORMAT**

**1. General**

1.1 The ASHTAM provides information on the status of activity of a volcano when a change in its activity is, or is expected to be of operational significance. This information is provided using the volcano level of alert colour code given in 3.5 below.

1.2 In the event of a volcanic eruption producing ash cloud of operational significance, the ASHTAM also provides information on the location, extent and movement of the ash cloud and the air routes and flight levels affected.

1.3 Issuance of an ASHTAM giving information on a volcanic eruption, in accordance with section 3 below, should **not** be delayed until complete information A) to K) is available but should be issued immediately following receipt of notification that an eruption has occurred or is expected to occur, or a change in the status of activity of a volcano of operational significance has occurred or is expected to occur, or an ash cloud is reported. In the case of an expected eruption, and hence no ash cloud evident at that time, items A) to E) should be completed and items F) to I) indicated as “not applicable”. Similarly, if a volcanic ash cloud is reported, e.g. by special air-report, but the source volcano is not known at that time, the ASHTAM should be issued initially with items A) to E) indicated as “unknown”, and items F) to K) completed, as necessary, based on the special air-report, pending receipt of further information. In other circumstances, if information for a specific field A) to K) is not available indicate “NIL”.

1.4 The maximum period of validity of ASHTAM is 24 hours. New ASHTAM must be issued whenever there is a change in the level of alert.

**2. Abbreviated heading**

2.1 Following the usual AFTN communications header, the abbreviated heading “TT AAiiii CCC MMYGGg (BBB)” is included to facilitate the automatic processing of ASHTAM messages in computer data banks. The explanation of these symbols is:

TT = data designator for ASHTAM = VA;

AA = geographical designator for States, e.g. NZ = New Zealand (see *Location Indicators* (Doc 7910), Part 2, Index to Nationality Letters for Location Indicators);

iiii = ASHTAM serial number in a four-figure group;  
CCCC = four-letter location indicator of the flight information region concerned (see *Location Indicators* (Doc 7910), Part 5, addresses of centres in charge of FIR/UIR);

MMYYGGg = date/time of report, whereby:

MM = month, e.g. January = 01, December = 12

YY = day of the month

GGg = time in hours (GG) and minutes (gg) UTC;

(BBB) = Optional group for correction to an ASHTAM message previously disseminated with the same serial number = COR.

Note.— Brackets in (BBB) are used to indicate that this group is optional.

*Example:* Abbreviated heading of ASHTAM for Auckland Oceanic FIR, report on 7 November at 0620 UTC:

VANZ0001 NZZO 11070620

**3. Content of ASHTAM**

3.1 Item A — Flight information region affected, plain-language equivalent of the location indicator given in the abbreviated heading, in this example “Auckland Oceanic FIR”.

3.2 Item B — Date and time (UTC) of first eruption.

3.3 Item C — Name of volcano, and number of volcano as listed in the ICAO Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds (Doc 9691), Appendix H, and on the World Map of Volcanoes and Principal Aeronautical Features.

3.4 Item D — Latitude/Longitude of the volcano in whole degrees or radial and distance of volcano from NAVAID (as listed in the ICAO Manual on Volcanic





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

Ash, Radioactive Material and Toxic Chemical Clouds (Doc 9691), Appendix H, and on the World Map of Volcanoes and Principal Aeronautical Features).

3.5 Item E — Colour code for level of alert indicating volcanic activity, including any previous level of alert colour code as follows:

| Level of alert colour code | Status of activity of volcano  |
|----------------------------|--|
| <b>GREEN ALERT</b>         | Volcano is in normal, non-eruptive state.<br><br>or, after a change from a higher alert level:<br><br>Volcanic activity considered to have ceased, and volcano reverted to its normal, non-eruptive state.   |
| <b>YELLOW ALERT</b>        | Volcano is experiencing signs of elevated unrest above known background levels.<br><br>or, after a change from higher alert level:<br><br>Volcanic activity has decreased significantly but continues to be closely monitored for possible renewed increase. |
| <b>ORANGE ALERT</b>        | Volcano is exhibiting heightened unrest with increased likelihood of eruption.<br><br>or,<br><br>Volcanic eruption is underway with no or minor ash emission [specify ash-plume  |

|                  |  |
|------------------|--|
|                  | height if possible].   |
| <b>RED ALERT</b> | Eruption is forecasted to be imminent with significant emission of ash into the atmosphere likely.<br><br>or,<br><br>Eruption is underway with significant emission of ash into the atmosphere [specify ash-plume height if possible]. |

Note.— The colour code for the level of alert indicating the status of activity of the volcano and any change from a previous status of activity should be provided to the area control centre by the responsible vulcanological agency in the State concerned, e.g. “RED ALERT FOLLOWING YELLOW” OR “GREEN ALERT FOLLOWING ORANGE”.

3.6 Item F — If volcanic ash cloud of operational significance is reported, indicate the horizontal extent and base/top of the ash cloud using latitude/longitude (in whole degrees) and altitudes in thousands of metres (feet) and/or radial and distance from source volcano. Information initially may be based only on special air-report, but subsequent information may be more detailed based on advice from the responsible meteorological watch office and/or volcanic ash advisory centre.

3.7 Item G — Indicate forecast direction of movement of the ash cloud at selected levels based on advice from the responsible meteorological watch office and/or volcanic ash advisory centre.

3.8 Item H — Indicate air routes and portions of air routes and flight levels affected, or expected to become affected.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

---

3.9 Item I — Indicate closure of airspace, air routes or portions of air routes, and availability of alternative routes.

3.10 Item J — Source of the information, e.g. “special air-report” or “vulcanological agency”, etc. The source of information should always be indicated, whether an eruption has actually occurred or ash cloud reported, or not.

3.11 Item K — Include in plain language any operationally significant information additional to the foregoing.

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**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**APPENDIX 4. INFORMATION TO BE NOTIFIED BY  
AIRAC**  
(see Chapter 6, BCAR 6.1.1)

**PART 1**

1. The establishment and withdrawal of, and premeditated significant changes (including operational trials) to:

1.1 Limits (horizontal and vertical), regulations and procedures applicable to:

a) flight information regions;

b) control areas;

c) control zones;

d) advisory areas;

e) ATS routes;

f) permanent danger, prohibited and restricted areas (including type and periods of activity when known) and ADIZ;

g) permanent areas or routes or portions thereof where the possibility of interception exists.

1.2 Positions, frequencies, call signs, identifiers, known irregularities and maintenance periods of radio navigation aids, and communication and surveillance facilities.

1.3 Holding and approach procedures, arrival and departure procedures, noise abatement procedures and any other pertinent ATS procedures.

1.4 Transition levels, transition altitudes and minimum sector altitudes.

1.5 Meteorological facilities (including broadcasts) and procedures.

1.6 Runways and stopways.

1.7 Taxiways and aprons.

1.8 Aerodrome ground operating procedures (including low visibility procedures).

1.9 Approach and runway lighting.

1.10 Aerodrome operating minima if published by a State.

**PART 2**

2. The establishment and withdrawal of, and premeditated significant changes to:

2.1 Position, height and lighting of navigational obstacles.

2.2 Hours of service of aerodromes, facilities and services.

2.3 Customs, immigration and health services.

2.4 Temporary danger prohibited and restricted areas and navigational hazards, military exercises and mass movements of aircraft.

2.5 Temporary areas or routes or portions thereof where the possibility of interception exists.

**PART 3**

3. The establishment of, and premeditated major changes to:

3.1 New aerodromes for international IFR operations.

3.2 New runways for IFR operations at international aerodromes.

3.3 Design and structure of the air traffic services route network.

3.4 Design and structure of a set of terminal procedures (including change of procedure bearings due to magnetic variation change).

3.5 Circumstances listed in Part 1 if the entire State or any significant portion thereof is affected or if cross-border coordination is required.





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**APPENDIX 5. PREDETERMINED DISTRIBUTION  
SYSTEM FOR NOTAM**

*(see Chapter 5, BCAR 5.3.4.2 and ICAO Annex 10,  
Volume II, Chapter 4, 4.4.14)*

1. The predetermined distribution system provides for incoming NOTAM (including ASHTAM) to be channelled through the AFTN direct to designated addressees predetermined by the receiving country concerned while concurrently being routed to the international NOTAM office for checking and control purposes.

2. The addressee indicators for those designated addressees are constituted as follows:

1) *First and second letters:*

The first two letters of the location indicator for the AFTN communication centre associated with the relevant international NOTAM office of the receiving country.

2) *Third and fourth letters:*

The letters "ZZ" indicating a requirement for special distribution.

3) *Fifth letter:*

The fifth letter differentiating between NOTAM (letter "N"), SNOWTAM (letter "S"), and ASHTAM (letter "V").

4) *Sixth and seventh letters:*

The sixth and seventh letters, each taken from the series A to Z and denoting the national and/or international distribution list(s) to be used by the receiving AFTN centre.

*Note.— The fifth, sixth and seventh letters replace the three-letter designator YNY which, in the normal distribution system, denotes an international NOTAM office.*

5) *Eighth letter:*

The eighth position letter shall be the filler letter "X" to complete the eight-letter addressee indicator.

3. States are to inform the States from which they receive NOTAM of the sixth and seventh letters to be used under different circumstances to ensure proper routing.

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**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**APPENDIX 6. NOTAM FORMAT**  
*(see Chapter 5, BCAR 5.2.1)*

|   |                          |            |   |         |       |             |             |                     |  |  |               |     |
|---|--------------------------|------------|---|---------|-------|-------------|-------------|---------------------|--|--|---------------|-----|
| Priority Indicator  |                          |            |   |         |       |             |             |                     |  |  | →             |     |
| Address   |                          |            |   |         |       |             |             |                     |  |  |               |     |
|   |                          |            |   |         |       |             |             |                     |  |  | <<E           |     |
| Date and time of filing   |                          |            |   |         |       |             |             |                     |  |  | →             |     |
| Originator's Indicator  |                          |            |   |         |       |             |             |                     |  |  | <<E(          |     |
| <b>Message Series, Number and Identifier</b>  |                          |            |   |         |       |             |             |                     |  |  |               |     |
| NOTAM containing new information  | .....                    |            | NOTAMN  |         |       |             |             |                     |  |  |               |     |
|   | (series and number/year) |            |   |         |       |             |             |                     |  |  |               |     |
| NOTAM replacing a previous NOTAM  | .....                    |            | NOTAMR.....                                       |         |       |             |             |                     |  |  |               |     |
|   | (series and number/year) |            | (series and number/year of NOTAM to be replaced)  |         |       |             |             |                     |  |  |               |     |
| NOTAM cancelling a previous NOTAM   | .....                    |            | NOTAMC.....                                       |         |       |             |             |                     |  |  | <<E           |     |
|   | (series and number/year) |            | (series and number/year of NOTAM to be cancelled) |         |       |             |             |                     |  |  |               |     |
| <b>Qualifiers</b>   |                          |            |   |         |       |             |             |                     |  |  |               |     |
|   | FIR                      | NOTAM Code | Traffic   | Purpose | Scope | Lower Limit | Upper Limit | Coordinates, Radius |  |  |               |     |
| Q)  |                          |            |   |         |       |             |             |                     |  |  |               | <<E |
| Identification of ICAO location indicator in which the facility, airspace or condition reported on is located |                          |            |   |         |       |             | A)          |                     |  |  |               | →   |
| <b>Period of Validity</b>   |                          |            |   |         |       |             |             |                     |  |  |               |     |
| From (date-time group)  |                          |            | B)  |         |       |             |             |                     |  |  |               | →   |
| To (PERM or date-time group)  |                          |            | C)  |         |       |             |             |                     |  |  | EST*<br>PERM* | <<E |
| Time Schedule (if applicable)   |                          |            | D)  |         |       |             |             |                     |  |  | →             |     |
|   |                          |            |   |         |       |             |             |                     |  |  | <<E           |     |
| <b>Text of NOTAM; Plain-language Entry (using ICAO Abbreviations)</b>   |                          |            |   |         |       |             |             |                     |  |  |               |     |
| E)  |                          |            |   |         |       |             |             |                     |  |  | <<E           |     |
| Lower Limit   | F)                       |            |   |         |       |             |             |                     |  |  | →             |     |
| Upper Limit   | G)                       |            |   |         |       |             |             |                     |  |  | ) <<E         |     |
| Signature   |                          |            |   |         |       |             |             |                     |  |  |               |     |

\*Delete as appropriate



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

**INSTRUCTIONS FOR THE COMPLETION OF THE  
NOTAM FORMAT**

**1. General**

The qualifier line (Item Q) and all identifiers (Items A) to G) inclusive) each followed by a closing parenthesis, as shown in the format, shall be transmitted unless there is no entry to be made against a particular identifier.

**2. NOTAM numbering**

Each NOTAM shall be allocated a series identified by a letter and a four-digit number followed by a stroke and a two-digit number for the year (e.g. A0023/03). Each series shall start on 1 January with number 0001.

**3. Qualifiers (Item Q)**

Item Q) is divided in eight fields, each separated by a stroke. An entry shall be made in each field. Examples of how fields are to be filled are shown in the *Aeronautical Information Services Manual* (Doc 8126). The definition of the field is as follows:

**1) FIR**

a) If the subject of the information is located geographically within one FIR, the ICAO location indicator shall be that of the FIR concerned. When an aerodrome is situated within the overlying FIR of another State, the first field of Item Q) shall contain the code for that overlying FIR (e.g. Q LFRR/...A) EGJJ);

or,

if the subject of the information is located geographically within more than one FIR, the FIR field shall be composed of the ICAO nationality letters of the State originating the NOTAM followed by "XX". (The location indicator of the overlying UIR shall not be used). The ICAO location indicators of the FIRs concerned shall then be listed in Item A) or indicator of State or non-governmental agency which is responsible for provision of a navigation service in more than one State.

b) If one State issues a NOTAM affecting FIRs in a group of States, the first two letters of the ICAO location indicator of the issuing State plus "XX" shall be included. The location indicators of the FIRs concerned shall then be listed in Item A) or indicator of State or non-governmental agency which is responsible for provision of a navigation service in more than one State.

**2) NOTAM CODE**

All NOTAM Code groups contain a total of five letters and the first letter is always the letter Q. The second and third letters identify the subject, and the fourth and fifth letters denote the status or condition of the subject reported upon. The two-letter codes for subjects and conditions are those contained in the PANS-ABC (Doc 8400). For combinations of second and third, and fourth and fifth letters, refer to the NOTAM Selection Criteria contained in Doc 8126 or insert one of the following combinations, as appropriate:

a) If the subject is not listed in the NOTAM Code (Doc 8400) or in the NOTAM Selection Criteria (Doc 8126), insert "XX" as the second and third letters (e.g. QXXAK);

b) If the condition of the subject is not listed in the NOTAM Code (Doc 8400) or in the NOTAM Selection Criteria (Doc 8126), insert "XX" as the fourth and fifth letters (e.g. QFAXX);

c) When a NOTAM containing operationally significant information is issued in accordance with Appendix 4 and Chapter 6 and when it is used to announce the existence of AIRAC AIP Amendments or Supplements, insert "TT" as the fourth and fifth letters of the NOTAM Code;

d) When a NOTAM is issued containing a checklist of valid NOTAM, insert "KKKK" as the second, third, fourth and fifth letters; and

e) The following fourth and fifth letters of the NOTAM Code shall be used in NOTAM cancellations:

**AK = RESUMED NORMAL OPERATION**





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

AL = OPERATIVE (OR RE-OPERATIVE)  
SUBJECT TO PREVIOUSLY  
PUBLISHED LIMITATIONS/CONDITIONS

AO = OPERATIONAL

CC = COMPLETED

CN = CANCELLED

HV = WORK COMPLETED

XX = PLAIN LANGUAGE

**3) TRAFFIC**

I = IFR

V = VFR

K = NOTAM is a checklist

Note.— Depending on the NOTAM subject and content, the qualifier field TRAFFIC may contain combined qualifiers. Guidance concerning the combination of TRAFFIC qualifiers with subject and conditions in accordance with the NOTAM Selection Criteria is contained in Doc 8126.

**4) PURPOSE**

N = NOTAM selected for the immediate attention of aircraft operators

B = NOTAM selected for PIB entry

O = NOTAM concerning flight operations

M = Miscellaneous NOTAM; not subject for a briefing, but it is available on request

K = NOTAM is a checklist

Note.— Depending on the NOTAM subject and content, the qualifier field PURPOSE may contain the combined qualifiers BO or NBO. Guidance concerning the combination of PURPOSE qualifiers with subject and conditions in accordance with the NOTAM Selection Criteria is contained in Doc 8126.

**5) SCOPE**

A = Aerodrome

E = En-route

W = Nav Warning

K = NOTAM is a checklist

Note.— Depending on the NOTAM subject and content, the qualifier field SCOPE may contain combined qualifiers. Guidance concerning the combination of SCOPE qualifiers with subject and conditions in accordance with the NOTAM Selection Criteria is contained in Doc 8126. If the subject is qualified AE, the aerodrome location indicator must be reported in Item A).

**6) and 7) LOWER/UPPER**

LOWER and UPPER limits shall only be expressed in flight levels (FL) and shall express the actual vertical limits of the area of influence without the addition of buffers. In the case of navigation warnings and airspace restrictions, values entered shall be consistent with those provided under Items F) and G).

If the subject does not contain specific height information, insert “000” for LOWER and “999” for UPPER as default values.

**8) COORDINATES, RADIUS**

The latitude and longitude accurate to one minute, as well as a three-digit distance figure giving the radius of influence in NM (e.g. 4700N01140E043). Coordinates present approximate centre of circle whose radius encompasses the whole area of influence, and if the NOTAM affects the entire FIR/UIR or more than one FIR/UIR, enter the default value “999” for radius.

**4. Item A)**

Insert the location indicator as contained in ICAO Doc 7910 of the aerodrome or FIR in which the facility, airspace, or condition being reported on is located. More than one FIR/UIR may be indicated when appropriate. If there is no available ICAO location indicator, use the ICAO nationality letter as given in ICAO Doc 7910, Part 2, plus “XX” and followed up in Item E) by the name, in plain language.

If information concerns GNSS, insert the appropriate ICAO location indicator allocated for a GNSS element or the common location indicator allocated for all elements of GNSS (except GBAS).



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

Note.— In the case of GNSS, the location indicator may be used when identifying a GNSS element outage (e.g. KNMH for a GPS satellite outage).

**5. Item B)**

For date-time group use a ten-figure group, giving year, month, day, hours and minutes in UTC. This entry is the date-time at which the NOTAMN comes into force. In the cases of NOTAMR and NOTAMC, the date-time group is the actual date and time of the NOTAM origination. The start of a day shall be indicated by “0000”.

**6. Item C)**

With the exception of NOTAMC, a date-time group (a ten-figure group giving year, month, day, hours and minutes in UTC) indicating duration of information shall be used unless the information is of a permanent nature in which case the abbreviation “PERM” is inserted instead. The end of a day shall be indicated by “2359” (i.e. do not use “2400”). If the information on timing is uncertain, the approximate duration shall be indicated using a date-time group followed by the abbreviation “EST”. Any NOTAM which includes an “EST” shall be cancelled or replaced before the date-time specified in Item C).

**7. Item D)**

If the hazard, status of operation or condition of facilities being reported on will be active in accordance with a specific time and date schedule between the dates-times indicated in Items B) and C), insert such information under Item D). If Item D) exceeds 200 characters, consideration shall be given to providing such information in a separate, consecutive NOTAM.

Note.— Guidance concerning a harmonized definition of Item D) content is provided in Doc 8126.

**8. Item E)**

Use decoded NOTAM Code, complemented where necessary by ICAO abbreviations, indicators, identifiers, designators, call signs, frequencies, figures and plain language. When NOTAM is selected for international distribution, English text shall be included for those parts expressed in plain language. This

entry shall be clear and concise in order to provide a suitable PIB entry. In the case of NOTAMC, a subject reference and status message shall be included to enable accurate plausibility checks.

**9. Items F) and G)**

These items are normally applicable to navigation warnings or airspace restrictions and are usually part of the PIB entry. Insert both lower and upper height limits of activities or restrictions, clearly indicating only one reference datum and unit of measurement. The abbreviations GND or SFC shall be used in Item F) to designate ground and surface respectively. The abbreviation UNL shall be used in Item G) to designate unlimited.

Note.— For NOTAM examples see Doc 8126 and the PANS-ABC (Doc 8400)

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BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES

SECTION 1

BCAR 15

APPENDIX 7. AERONAUTICAL DATA QUALITY REQUIREMENTS

Table A7-1. Latitude and longitude

| Latitude and longitude  | Publication resolution | Integrity Classification        |
|---|------------------------|---------------------------------|
| Flight information region boundary points .....   | 1 min                  | $1 \times 10^{-3}$<br>routine   |
| P, R, D area boundary points (outside CTA/CTR boundaries) .....   | 1 min                  | $1 \times 10^{-3}$<br>routine   |
| P, R, D area boundary points (inside CTA/CTR boundaries) .....  | 1 sec                  | $1 \times 10^{-5}$<br>essential |
| CTA/CTR boundary points .....   | 1 sec                  | $1 \times 10^{-5}$<br>essential |
| En-route NAVAIDS, intersections and waypoints, and holding, and STAR/SID points .....                           | 1 sec                  | $1 \times 10^{-5}$<br>essential |
| Obstacles in Area 1 (the entire State territory) .....  | 1 sec                  | $1 \times 10^{-3}$<br>routine   |
| Aerodrome/heliport reference point .....  | 1 sec                  | $1 \times 10^{-3}$<br>routine   |
| NAVAIDS located at the aerodrome/heliport .....   | 1/10 sec               | $1 \times 10^{-5}$<br>essential |
| Obstacles in Area 3 .....   | 1/10 sec               | $1 \times 10^{-5}$<br>essential |
| Obstacles in Area 2 .....   | 1/10 sec               | $1 \times 10^{-5}$<br>essential |
| Final approach fixes/points and other essential fixes/points comprising the instrument approach procedure ..... | 1/10 sec               | $1 \times 10^{-5}$<br>essential |
| Runway threshold .....  | 1/100 sec              | $1 \times 10^{-8}$<br>critical  |
| Runway end .....  | 1/100 sec              | $1 \times 10^{-8}$<br>critical  |
| Runway holding position .....   | 1/100 sec              | $1 \times 10^{-8}$<br>critical  |
| Taxiway centre line/parking guidance line points .....  | 1/100 sec              | $1 \times 10^{-5}$<br>essential |
| Taxiway intersection marking line .....   | 1/100 sec              | $1 \times 10^{-5}$<br>essential |



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

| Elevation/altitude/height                                    | Publication resolution | Integrity Classification        |
|--|------------------------|---------------------------------|
| Latitude and longitude                                       |                        |                                 |
| Exit guidance line .....                                     | 1/100 sec              | $1 \times 10^{-5}$<br>essential |
| Aircraft stand points/TNS checkpoints .....                  | 1/100 sec              | $1 \times 10^{-3}$<br>routine   |
| Geometric centre of TLOF or FATO thresholds, heliports ..... | 1/100 sec              | $1 \times 10^{-8}$<br>critical  |
| Apron boundaries (polygon) .....                             | 1/10 sec               | $1 \times 10^{-3}$<br>routine   |
| De-icing/anti-icing facility (polygon) .....                 | 1/10 sec               | $1 \times 10^{-3}$<br>routine   |

*Note.— See Appendix 8 for graphical illustrations of obstacle data collection surfaces and criteria used to identify obstacles in the defined areas.*

**Table A7-2. Elevation/altitude/height**

| Elevation/altitude/height  | Publication resolution | Integrity Classification        |
|--|------------------------|---------------------------------|
| Aerodrome/heliport elevation .....   | 1 m or 1 ft            | $1 \times 10^{-5}$<br>essential |
| WGS-84 geoid undulation at aerodrome/heliport elevation position .....                                     | 1 m or 1 ft            | $1 \times 10^{-5}$<br>essential |
| Runway or FATO threshold, non-precision approaches .....   | 1 m or 1 ft            | $1 \times 10^{-5}$<br>essential |
| WGS-84 geoid undulation at runway or FATO threshold, TLOF geometric centre, non-precision approaches ..... | 1 m or 1 ft            | $1 \times 10^{-5}$<br>essential |
| Runway or FATO threshold, precision approaches .....   | 0.1 m or 0.1 ft        | $1 \times 10^{-8}$<br>critical  |
| WGS-84 geoid undulation at runway or FATO threshold, TLOF geometric centre, precision approaches .....     | 0.1 m or 0.1 ft        | $1 \times 10^{-8}$<br>critical  |
| Threshold crossing height, precision approaches .....  | 0.1 m or 0.1 ft        | $1 \times 10^{-8}$<br>critical  |
| Obstacles in Area 2 .....  | 1 m or 1 ft            | $1 \times 10^{-5}$<br>essential |
| Obstacles in Area 3 .....  | 0.1 m or 0.1 ft        | $1 \times 10^{-5}$<br>essential |
| Obstacles in Area 1 (the entire State territory) .....   | 1 m or 1 ft            | $1 \times 10^{-3}$<br>routine   |



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

| Elevation/altitude/height                           | Publication resolution | Integrity Classification        |
|---|------------------------|---------------------------------|
| Distance measuring equipment/precision (DME/P)..... | 3 m (10 ft)            | $1 \times 10^{-5}$<br>essential |
| Distance measuring equipment (DME).....             | 30 m (100 ft)          | $1 \times 10^{-5}$<br>essential |
| Minimum altitudes.....                              | 50 m or 100 ft         | $1 \times 10^{-3}$<br>routine   |

*Note.— See Appendix 8 for graphical illustrations of obstacle data collection surfaces and criteria used to identify obstacles in the defined areas.*

**Table A7-3. Declination and magnetic variation**

| Declination/variation  | Publication resolution | Integrity Classification        |
|--|------------------------|---------------------------------|
| VHF NAVAID station declination used for technical line-up..... | 1 degree               | $1 \times 10^{-5}$<br>essential |
| NDB NAVAID magnetic variation.....                             | 1 degree               | $1 \times 10^{-3}$<br>routine   |
| Aerodrome/heliport magnetic variation.....                     | 1 degree               | $1 \times 10^{-5}$<br>essential |
| ILS localizer antenna magnetic variation.....                  | 1 degree               | $1 \times 10^{-5}$<br>essential |
| MLS azimuth antenna magnetic variation.....                    | 1 degree               | $1 \times 10^{-5}$<br>essential |

**Table A7-4. Bearing**

| Bearing   | Publication resolution | Integrity Classification        |
|---|------------------------|---------------------------------|
| Airway segments.....                              | 1 degree               | $1 \times 10^{-3}$<br>routine   |
| En-route and terminal fix formations.....         | 1/10 degree            | $1 \times 10^{-3}$<br>routine   |
| Terminal arrival/departure route segments.....    | 1 degree               | $1 \times 10^{-3}$<br>routine   |
| Instrument approach procedure fix formations..... | 1/100 degree           | $1 \times 10^{-5}$<br>essential |
| ILS localizer alignment (True).....               | 1/100 degree           | $1 \times 10^{-5}$<br>essential |



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

| Bearing                                 | Publication resolution | Integrity Classification        |
|---|------------------------|---------------------------------|
| MLS zero azimuth alignment (True) ..... | 1/100 degree           | $1 \times 10^{-5}$<br>essential |
| Runway and FATO bearing (True).....     | 1/100 degree           | $1 \times 10^{-3}$<br>routine   |

**Table A7-5. Length/distance/dimension**

| Length/distance/dimension  | Publication resolution  | Integrity Classification        |
|--|-------------------------|---------------------------------|
| Airway segment length .....  | 1/10 km<br>or 1/10 NM   | $1 \times 10^{-3}$<br>routine   |
| En-route fix formation distance .....                                  | 1/10 km<br>or 1/10 NM   | $1 \times 10^{-3}$<br>routine   |
| Terminal arrival/departure route segment length.....                   | 1/100 km<br>or 1/100 NM | $1 \times 10^{-5}$<br>essential |
| Terminal and instrument approach procedure fix formation distance..... | 1/100 km<br>or 1/100 NM | $1 \times 10^{-5}$<br>essential |
| Runway and FATO length, TLOF dimensions .....                          | 1 m or 1 ft             | $1 \times 10^{-8}$<br>critical  |
| Runway width.....  | 1 m or 1 ft             | $1 \times 10^{-5}$<br>essential |
| Displaced threshold distance .....                                     | 1 m or 1 ft             | $1 \times 10^{-3}$<br>routine   |
| Clearway length and width .....  | 1 m or 1 ft             | $1 \times 10^{-5}$<br>essential |
| Stopway length and width .....   | 1 m or 1 ft             | $1 \times 10^{-8}$<br>critical  |
| Landing distance available.....  | 1 m or 1 ft             | $1 \times 10^{-8}$<br>critical  |
| Take-off run available.....  | 1 m or 1 ft             | $1 \times 10^{-8}$<br>critical  |
| Take-off distance available.....                                       | 1 m or 1 ft             | $1 \times 10^{-8}$<br>critical  |
| Accelerate-stop distance available .....                               | 1 m or 1 ft             | $1 \times 10^{-8}$<br>critical  |
| Runway shoulder width.....   | 1 m or 1 ft             | $1 \times 10^{-5}$<br>essential |
| Taxiway width.....   | 1 m or 1 ft             | $1 \times 10^{-5}$<br>essential |



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 1**

**BCAR 15**

---

| Length/distance/dimension   | Publication resolution | Integrity Classification        |
|---|------------------------|---------------------------------|
| Taxiway shoulder width .....  | 1 m or 1 ft            | $1 \times 10^{-5}$<br>essential |
| ILS localizer antenna-runway end, distance .....                    | 1 m or 1 ft            | $1 \times 10^{-3}$<br>routine   |
| ILS glide slope antenna-threshold, distance along centre line ..... | 1 m or 1 ft            | $1 \times 10^{-3}$<br>routine   |
| ILS marker-threshold distance.....                                  | 1 m or 1 ft            | $1 \times 10^{-5}$<br>essential |
| ILS DME antenna-threshold, distance along centre line.....          | 1 m or 1 ft            | $1 \times 10^{-5}$<br>essential |
| MLS azimuth antenna-runway end, distance .....                      | 1 m or 1 ft            | $1 \times 10^{-3}$<br>routine   |
| MLS elevation antenna-threshold, distance along centre line.....    | 1 m or 1 ft            | $1 \times 10^{-3}$<br>routine   |
| MLS DME/P antenna-threshold, distance along centre line .....       | 1 m or 1 ft            | $1 \times 10^{-5}$<br>essential |

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**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

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**SECTION 2  
IEM**



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

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**SECTION 2 – ADVISORY CIRCULARS**

**1. GENERAL**

1.1. If a specific paragraph does not have an IEM, it means that the paragraph does not need one.

**2. PRESENTATION**

2.1. The sequence after the abbreviation IEM indicates the paragraph number of the referring BCAR-15.

2.2. The abbreviations are defined as follows:

Interpretative and Explanatory Material (IEM) shows the ways or alternatives, but not necessarily the only possible way to comply with a specific paragraph of the BCAR-15.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

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**SUBPART A**

**CHAPTER 1 - INTRODUCTION**

**IEM 15 1.0 Introduction.**

[\(See BCAR 151.0\)](#)

To satisfy the uniformity and consistency in the provision of aeronautical information/data that is required for the operational use by computer-based navigation systems, shall, as far as practicable, avoid standards and procedures other than those established for international use.

It is recognized that Supplementary Procedures may be required in certain cases in order to meet particular requirements of the Region.

Guidance material on the organization and operation of aeronautical information services is contained in the Aeronautical Information Services Manual (Doc 8126).





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

**SUBPART B**

**CHAPTER 2 - DEFINITIONS**

**IEM 15 2.0 Definitions.**

[\(See BCAR 15 2.0.\)](#)

[Accuracy:](#)

For measured positional data the accuracy is normally expressed in terms of a distance from a stated position within which there is a defined confidence of the true position falling.

[Application:](#)\* 19104 — Geographic information — Terminology

[Area navigation \(RNAV\):](#)

Area navigation includes performance-based navigation as well as other operations that do not meet the definition of performance-based navigation.

[Assamble:](#)

The assemble phase includes checking the data and ensuring that detected errors and omissions are rectified.

[ATS Surveillance system:](#)

A comparable ground-based system is one that has been demonstrated, by comparative assessment or other methodology, to have a level of safety and performance equal to or better than monopulse SSR.

[Automatic dependent Surveillance- contract \(ADS-C\):](#)

The abbreviated term “ADS contract” is commonly used to refer to ADS event contract, ADS demand contract, ADS periodic contract or an emergency mode.

[Calendar:](#) \*19108 — Geographic information — Temporal schema

[Database:](#) This primarily refers to data stored electronically and accessed by computer rather than in files of physical records.

[Data product specification:](#)

\*19131 — Geographic information — Data product specification

A data product specification provides a description of the universe of discourse and a specification for mapping the universe of discourse to a data set. It may be used for production, sales, end-use or other purpose.

[Data set:](#) \* 19101 — Geographic information — Reference model



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

[Data set series:](#) \* 19115 — Geographic information — Metadata

[Datum:](#) \*19104 — Geographic information — Terminology

[Digital Elevation Model \(DEM\):](#)

Digital Terrain Model (DTM) is sometimes referred to as DEM.

[Feature:](#) \* 19101 — Geographic information — Reference model

[Feature attribute:](#)

\* 19101 — Geographic information — Reference model

A feature attribute has a name, a data type and a value domain associated with it.

[Feature operation:](#)

\*19110 — Geographic information — Feature cataloguing schema

An operation upon the feature type dam is to raise the dam. The result of this operation is to raise the level of water in the reservoir.

[Feature relationship:](#)

\* 19101 — Geographic information — Reference model

[Feature type:](#)

\*19110 — Geographic information — Feature cataloguing schema

In a feature catalogue, the basic level of classification is the feature type.

[Geoid:](#)

The geoid is irregular in shape because of local gravitational disturbances (wind tides, salinity, current, etc.) and the direction of gravity is perpendicular to the geoid at every point.

[Geoid undulation:](#)

In respect to the World Geodetic System — 1984 (WGS-84) defined ellipsoid, the difference between the WGS-84 ellipsoidal height and orthometric height represents WGS-84 geoid undulation.

[Gregorian calendar:](#)

\*19108 — Geographic information — Temporal schema

In the Gregorian calendar, common years have 365 days and leap years 366 days divided into twelve sequential months.

[Metadata:](#)



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

\*19115 — Geographic information — Metadata

Data that describes and documents data.

[Navigation specification:](#)

The Performance-based Navigation (PBN) Manual (Doc 9613), Volume II, contains detailed guidance on navigation specifications.

The term RNP, previously defined as “a statement of the navigation performance necessary for operation within a defined airspace”, has been removed from this Annex as the concept of RNP has been overtaken by the concept of PBN. The term RNP in this Annex is now solely used in the context of navigation specifications that require performance monitoring and alerting, e.g. RNP 4 refers to the aircraft and operating requirements, including a 4 NM lateral performance with on-board performance monitoring and alerting that are detailed in Doc 9613.

[Performance-based navigation \(PBN\):](#)

Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, availability and functionality needed for the proposed operation in the context of a particular airspace concept.

[Portrayal:](#) \*19117 — Geographic information — Portrayal

[Precision:](#)

In reference to geodetic surveys, precision is a degree of refinement in performance of an operation or a degree of perfection in the instruments and methods used when taking measurements.

[Quality:](#)

\*9000 — Quality Management Systems — Fundamentals and Vocabulary

The term “quality” can be used with adjectives such as poor, good or excellent.

“Inherent”, as opposed to “assigned”, means existing in something, especially as a permanent characteristic.

[Quality assurance:](#)

\*9000 — Quality Management Systems — Fundamentals and Vocabulary

[Quality control:](#)

\*9000 — Quality Management Systems — Fundamentals and Vocabulary



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

Quality management:

\*9000 — Quality Management Systems — Fundamentals and Vocabulary

Requirement:

\*9000 — Quality Management Systems — Fundamentals and Vocabulary

“Generally implied” means that it is custom or common practice for the organization, its customers and other interested parties, that the need or expectation under consideration is implied.

A qualifier can be used to denote a specific type of requirement, e.g. product requirement, quality management requirement, customer requirement.

A specified requirement is one which is stated, for example, in a document.

Requirements can be generated by different interested parties.

Terrain:

In practical terms, depending on the method of data collection used, terrain represents the continuous surface that exists at the bare Earth, the top of the canopy or something in-between, also known as “first reflective surface”.

Traceability:

When considering product, traceability can relate to:

- the origin of materials and parts;
- the processing history; and
- the distribution and location of the product after delivery.

\*9000 — Quality Management Systems — Fundamentals and Vocabulary

Validation:

\*9000 — Quality Management Systems — Fundamentals and Vocabulary

Verification:

\*9000 — Quality Management Systems — Fundamentals and Vocabulary

The term “verified” is used to designate the corresponding status.

Confirmation can comprise activities such as:

- performing alternative calculations;
- comparing a new design specification with a similar proven design specification; — undertaking tests and demonstrations; and
- reviewing documents prior to issue.





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

**SUBPART C**

**CHAPTER 3 - GENERAL**

**IEM 15 3.1.2 Aeronautical Information Service before and during the flight**

[\(See BCAR 15 3.1.2\)](#)

One such source is the subject of a provision in BCAR 15 8.3.

**IEM 15 3.2.2 Quality management system**

[\(See BCAR 15 3.2.2\)](#)

Quality management may be provided by a single quality management system or serial quality managementsystems.

Letters of agreement concerning data quality between originator and distributor and between distributor andnext intended user may be used to manage the aeronautical information data chain.

**IEM 15 3.2.3 Quality management system**

[\(See BCAR 15 3.2.3\)](#)

An ISO 9000 certificate issued by an accredited certification body would be considered an acceptable means of compliance.

International Organization for Standardization (ISO) 9000 series of quality assurance standards provide a basic framework for the development of a quality assurance programme and define the term “accredited certification body”. The details of a successful programme are to be formulated by each State and in most cases are unique to the State organization.

Supporting material in respect of the processing of aeronautical data is contained in RTCA Document DO-200A and European Organization for Civil Aviation Equipment (EUROCAE) Document ED-76 — Standards for Processing Aeronautical Data. These standards support the development and application of aeronautical databases.

**IEM 15 3.2.10 Quality management system**

[\(See BCAR 15 3.2.10\)](#)

Distribution to the next intended user will differ in the delivery method applied which may either be: Physical distribution. The means by which aeronautical information/data distribution is achieved through the delivery of aphysical package, such as postal services;

Or

Direct electronic distribution. The means by which aeronautical information/data distribution is achieved automaticallythrough the use of a direct electronic connection between the AIS and the next intended user.

Different delivery methods and data media may require different procedures to ensure the required data quality.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

**IEM 15 3.2.12 Quality management system**

[\(See BCAR 15 3.2.12 \)](#)

This requirement does not apply to the communications systems used for the transfer of data sets.

Guidance material on the use of a 32-bit CRC algorithm to implement a protection of electronic aeronautical data sets is contained in the ICAO Aeronautical Information Services Manual (Doc 8126).

**IEM 15 3.2.13 Quality management system**

[\(See BCAR 15 3.2.13 \)](#)

Guidance material on the liaison with other related services is contained in ICAO Doc 8126.

**IEM 15 3.2.14 Quality management system**

[\(See BCAR 15 3.2.14 \)](#)

Guidance material on the aeronautical data quality requirements (accuracy, resolution, integrity, protection and traceability) is contained in the World Geodetic System — 1984 (WGS-84) ICAO Manual (Doc 9674). Supporting material in respect of the provisions of Appendices 1 and 7 related to publication resolution and integrity of aeronautical data is contained in RTCA Document DO-201A and European Organization for Civil Aviation Equipment (EUROCAE) Document ED-77 — Industry Requirements for Aeronautical Information.

**IEM 15 3.5 Cost recovery**

[\(See BCAR 15 3.5 \)](#)

When costs of collection and compilation of aeronautical information/data are recovered through airports and air navigation services charges, the charge to an individual customer for the supply of a particular AIS product, either in paper or electronic form, may be based on the costs of printing paper copies or production of electronic media, and costs of distribution.

**IEM 15 3.6.5 Use of automation**

[\(See BCAR 15 3.6.5 \)](#)

Guidance material on an aeronautical conceptual and data exchange model for the development of databases and the establishment of data exchange services is contained in ICAO Doc 8126.

**IEM 15 3.6.6.2 Identification and delineation of prohibited, restricted and danger areas**

[\(See BCAR 15 3.6.6.2 \)](#)

Nationality letters are those contained in Location Indicators (Doc 7910).

**IEM 15 3.6.7.2 Human Factors considerations**

[\(See BCAR 15 3.6.7.2 \)](#)

This may be accomplished through the design of systems, through operating procedures or through improvements in the operating environment.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

**IEM 15 3.7.1.1 Horizontal reference system**

[\(See BCAR 15 3.7.1.1 \)](#)

Comprehensive guidance material concerning WGS-84 is contained in the World Geodetic System — 1984 (WGS-84) Manual (Doc 9674).

Specifications governing the determination and reporting (accuracy of field work and data integrity) of WGS-84-related aeronautical coordinates for geographical positions established by air traffic services are given in BCAR ATS, Chapter 2, and Appendix 5, Table 1, and for aerodrome/heliport-related positions, in BCAR 14, Volumes I and II, Chapter 2, and Table A5-1 and Table 1 of Appendices 5 and 1, respectively.

**IEM 15 3.7.1.2 Horizontal reference system**

[\(See BCAR 15 3.7.1.2 \)](#)

The epoch of the WGS-84 (G873) reference frame is 1997.0 while the epoch of the latest updated WGS-84 (G1150) reference frame, which includes plate motion model, is 2001.0. (G indicates that the coordinates were obtained through Global Positioning System (GPS) techniques, and the number following G indicates the GPS week when these coordinates were implemented in the United States of America's National Geospatial-Intelligence Agency's (NGA's) precise ephemeris estimation process.)

The set of geodetic coordinates of globally distributed permanent GPS tracking stations for the most recent realization of the WGS-84 reference frame (WGS-84 (G1150)) is provided in ICAO Doc 9674. For each permanent GPS tracking station, the accuracy of an individually estimated position in WGS-84 (G1150) has been in the order of 1 cm ( $1\sigma$ ).

Another precise worldwide terrestrial coordinate system is the International Earth Rotation Service (IERS) Terrestrial Reference System (ITRS), and the realization of ITRS is the IERS Terrestrial Reference Frame (ITRF). Guidance material regarding the ITRS is provided in Appendix C of Doc 9674. The most current realization of the WGS-84 (G1150) is referenced to the ITRF 2000 epoch. The WGS-84 (G1150) is consistent with the ITRF 2000 and in practical realization the difference between these two systems is in the one to two centimetre rangeworldwide, meaning WGS-84 (G1150) and ITRF 2000 are essentially identical.

**IEM 15 3.7.2.1 Vertical reference system**

[\(See BCAR 15 3.7.2.1 \)](#)

The geoid globally most closely approximates MSL. It is defined as the equipotential surface in the gravity field of the Earth which coincides with the undisturbed MSL extended continuously through the continents.

Gravity-related heights (elevations) are also referred to as orthometric heights while distances of points above the ellipsoid are referred to as ellipsoidal heights.

**IEM 15 3.7.2.2 Vertical reference system**

[\(See BCAR 15 3.7.2.2 \)](#)

Guidance material concerning EGM-96 is contained in ICAO Doc 9674.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

**IEM 15 3.7.2.3 Vertical reference system**

[\(See BCAR 15 3.7.2.3 \)](#)

Specifications governing determination and reporting (accuracy of field work and data integrity) of elevation and geoid undulation at specific positions at aerodromes/heliports are given in BCAR 14, Volumes I and II, Chapter 2, and Table A5-2 and Table 2 of Appendices 5 and 1, respectively.

**IEM 15 3.7.3.1 Temporal reference system**

[\(See BCAR 15 3.7.3.1 \)](#)

A value in the time domain is a temporal position measured relative to a temporal reference system.

Coordinated Universal Time (UTC) is a time scale maintained by the Bureau International de l'Heure (BIH) and the IERS and forms the basis of a coordinated dissemination of standard frequencies and time signals.

See Attachment D of ICAO Annex 5 for guidance material relating to UTC.

ISO Standard 8601 specifies the use of the Gregorian calendar and 24-hour local or UTC for information interchange while ISO Standard 19108 prescribes the Gregorian calendar and UTC as the primary temporal reference system for use with geographic information.

**IEM 15 3.7.3.2 temporal reference system**

[\(See BCAR 15 3.7.3.2 \)](#)

ISO Standard 19108, Annex D, describes some aspects of calendars that may have to be considered in such a description.

**IEM 15 3.8.2 Metadata**

[\(See BCAR 15 3.8.2 \)](#)

The function performed indicates any action of originating, transmitting or manipulating the data.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

**SUBPART D**

**CHAPTER 4 - AERONAUTICAL INFORMATION  
PUBLICATIONS (AIP)**

**IEM 15 4 AERONAUTICAL INFORMATION PUBLICATIONS (AIP)**

[\(See Chapter 4 BCAR 15 \)](#)

AIP are intended primarily to satisfy international requirements for the exchange of aeronautical information of a lasting character essential to air navigation. When practicable, the form of presentation is designed to facilitate their use in flight.

AIP constitute the basic information source for permanent information and long duration temporary changes.

**IEM 15 4.1.3 Contents**

[\(See IEM 15 4.1.3.\)](#)

A page pocket may be used in the AIP to include the Aerodrome Terrain and Obstacle Chart — ICAO (Electronic) on appropriate electronic media.

**IEM 15 4.1.4 Contents**

[\(See IEM 15 4.1.4.\)](#)

Where appropriate, charts produced in conformity with BCAR 4 — Aeronautical Charts, may be used to fulfil this requirement. Guidance material as to the specifications of index maps and diagrams included in Aeronautical Information Publications is contained in the ICAO Aeronautical Information Services Manual (Doc 8126).

**IEM 15 4.2 General specifications**

[\(See IEM 15 4.2.\)](#)

If it is necessary by reason of bulk or for convenience, to publish an AIP in two or more parts or volumes, each of them will indicate that the remainder of the information is to be found in the other part(s) or volume(s).

**IEM 15 4.2.9.1 General specifications**

[\(See IEM 15 4.2.9.1.\)](#)

Guidance material on the establishment of intervals between publication dates of AIP Amendments is contained in the ICAO Aeronautical Information Services Manual (Doc 8126).

**IEM 15 4.4.1 Specifications for AIP Supplements**

[\(See BCAR 15 4.4.1 \)](#)

Guidance material on the use of AIP Supplements together with examples of such use is contained in the ICAO Aeronautical Information Services Manual (Doc 8126).

**IEM 15 4.4.4 Specifications for AIP Supplements**

[\(See BCAR 15 4.4.4 \)](#)

The requirements for NOTAM apply when time constraints do not allow sufficient time for the distribution of an AIP Supplement.



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

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**IEM 15 4.6.1 Electronic AIP (eAIP)**

[\(See BCAR 15 4.6.1\)](#)

This composite electronic document is named “Electronic AIP” (eAIP) and may be based on a format that allows for digital data exchange.

Guidance material for the production and provision of the eAIP is contained in ICAO Doc 8126.

**IEM 15 4.6.3 Electronic AIP (eAIP)**

[\(See BCAR 15 4.6.3\)](#)

Guidance material on the use of the Internet is contained in Guidelines on the Use of the Public Internet for Aeronautical Applications (ICAO Doc 9855).



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

**SUBPART E**

**CHAPTER 5 - NOTAM**

**IEM 15 5.1.1 Origination**

[\(See BCAR 15 5.1.1\)](#)

Operationally significant changes concerning circumstances listed in Appendix 4, Part 1, are issued under the Aeronautical Information Regulation and Control (AIRAC) system specified in Chapter 6.

Information of short duration containing extensive text and/or graphics is published as an AIP Supplement (see Chapter 4, BCAR 15 4.4).

**IEM 15 5.1.1.1 Origination**

[\(See BCAR 15 5.1.1.1\)](#)

See BCAR ATS, 2.28 and Attachment D to that BCAR.

**IEM 15 5.1.1.4.1 Origination**

[\(See BCAR 15 5.1.1.4.1\)](#)

Whenever possible, at least 24 hours' advance notice is desirable, to permit timely completion of the notification process and to facilitate airspace utilization planning.

**IEM 15 5.1.1.6 Origination**

[\(See BCAR 15 5.1.1.6\)](#)

Guidance material for the origination of NOTAM announcing the existence of AIRAC AIP Amendments or AIP Supplements ("Trigger NOTAM") is contained in the ICAO Aeronautical Information Services Manual (Doc 8126).

**IEM 15 5.2.2 General specifications**

[\(See BCAR 15 5.2.2\)](#)

Detailed guidance material covering NOTAM, ASHTAM and PIB production is contained in ICAO Doc 8126.

**IEM 15 5.2.2.1 General specifications**

[\(See BCAR 15 5.2.2.1\)](#)

The ICAO NOTAM Code together with significations/uniform abbreviated phraseology, and ICAO Abbreviations are those contained in the PANS-ABC (Doc 8400).

**IEM 15 5.2.5 General specifications**

[\(See BCAR 15 5.2.5\)](#)

Letters A to Z, with the exception of S and T, may be used to identify a NOTAM series.

**IEM 15 5.2.8 General specifications**

[\(See BCAR 15 5.2.8\)](#)

Guidance concerning the combination of a subject and a condition of the subject in accordance with the NOTAM



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

---

Selection Criteria is contained in the ICAO Aeronautical Information Services Manual (Doc 8126).

**IEM 15 5.2.13 General specifications**

[\(See BCAR 15 5.2.13 \)](#)

Omitting a NOTAM from the checklist does not serve to cancel a NOTAM.

**IEM 15 5.3.3.1 Distribution**

[\(See BCAR 15 5.3.3.1 \)](#)

These lists are intended to obviate superfluous distribution of information. Guidance material relating to this is contained in the ICAO Aeronautical Information Services Manual (Doc 8126).





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

**SUBPART F**

**CHAPTER 6- AERONAUTICAL INFORMATION REGULATION AND CONTROL (AIRAC)**

**IEM 15 6.1.1 General specifications**

[\(See BCAR 15 6.1.1\)](#)

Guidance material on the procedures applicable to the AIRAC system is contained in the ICAO Aeronautical Information Services Manual (Doc 8126).

**IEM 15 6.1.1 Provision of information in paper copy form**

[\(See BCAR 15 6.1.1\)](#)

Guidance on what constitutes a major change is included in ICAO Doc 8126.

**IEM 15 6.3.3 Provision of information in paper copy form**

[\(See BCAR 15 6.3.3\)](#)

Guidance on what constitutes a major change is included in ICAO Doc 8126.





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

**SUBPART G**

**CHAPTER 7 - AERONAUTICAL INFORMATION CIRCULARS (AIC)**

**IEM 15 7.1.1.1            Origination**

[\(See IEM 15 7.1.1.1\)](#)

The publication of an AIC does not remove the obligations set forth in Chapters 4 and 5.

**IEM 15 7.2.1    General specifications**

[\(See IEM 15 7.2.1\)](#)

Both text and diagrams may be included.

**IEM 15 7.2.1.4            General specifications**

[\(See IEM 15 7.2.1.4\)](#)

Guidance on colour coding of AIC by subject can be found in the ICAO Aeronautical Information Services Manual (Doc 8126).





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

**SUBPART H**

**CHAPTER 8- PRE-FLIGHT AND POST-FLIGHT INFORMATION/DATA**

**IEM 15 8.1.2 Pre-flight information**

[\(See IEM 15 8.1.2\)](#)

The documentation listed in a) and b) may be limited to national publications and when practicable, those of immediately adjacent States, provided a complete library of aeronautical information is available at a central location and means of direct communications are available between the aerodrome AIS unit and that library.

**IEM 15 8.1.3 Pre-flight information**

[\(See IEM 15 8.1.3\)](#)

Guidance on the preparation of PIB is contained in the ICAO Aeronautical Information Services Manual (Doc 8126).

**IEM 15 8.2.3 Automated aeronautical information systems**

[\(See IEM 15 8.2.3\)](#)

ICAO abbreviations and codes and location indicators are given respectively in the Procedures for Air Navigation Services — ICAO Abbreviations and Codes (PANS-ABC, Doc 8400) and Location Indicators (ICAO Doc 7910).

**IEM 15 8.2.5 Automated aeronautical information systems**

[\(See IEM 15 8.2.5\)](#)

The meteorological authority concerned remains responsible for the quality of the meteorological information provided by means of such a system in accordance with BCAR AMS 9.5.1 of BCAR AMS.

**IEM 15 8.3.2 Post-flight information**

[\(See IEM 15 8.3.2\)](#)

See BCAR 14, Volume I, Chapter 9, BCAR 14 9.4.





**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

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**SUBPART I**

**CHAPTER 9 - TELECOMMUNICATION REQUIREMENTS**

**IEM 15 9.3 TELECOMMUNICATION REQUIREMENTS**

[\(See IEM 15 9.3\)](#)

Guidance material on non-time critical types of aeronautical information and relevant aspects of the publicInternet is provided in the Guidelines on the Use of the Public Internet for Aeronautical Applications (Doc 9855).







**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

**SUBPART J**

**CHAPTER 10- ELECTRONIC TERRAIN AND OBSTACLE DATA**

**IEM 15 10 ELECTRONIC TERRAIN AND OBSTACLE DATA**

[\(See IEM 15 10\)](#)

Electronic terrain and obstacle data is intended to be used in the following air navigation applications:

- a) ground proximity warning system with forward looking terrain avoidance function and minimum safe altitudewarning (MSAW) system;
- b) determination of contingency procedures for use in the event of an emergency during a missed approach or take-off;
- c) aircraft operating limitations analysis;
- d) instrument procedure design (including circling procedure);
- e) determination of en-route “drift-down” procedure and en-route emergency landing location;
- f) advanced surface movement guidance and control system (A-SMGCS); and
- g) aeronautical chart production and on-board databases.

The data may also be used in other applications such as flight simulator and synthetic vision systems, and may assist indetermining the height restriction or removal of obstacles that pose a hazard to air navigation.

**IEM 15 10.1 Coverage areas and requirements for data provision**

[\(See IEM 15 10.1\)](#)

See BCAR 14, Volume I, Chapter 3 for dimensions for runway strip.

**IEM 15 10.1.1 Coverage areas and requirements for data provision**

[\(See IEM 15 10.1.1\)](#)

See Appendix 8 of ICAO ANNEX 15for descriptions and graphical illustrations of the coverage areas.

**IEM 15 10.1.5 Coverage areas and requirements for data provision**

[\(See IEM 15 10.1.5\)](#)

Take-off flight path area obstacle identification surfaces are specified in BCAR 4, 3.8.2. Aerodrome obstacle limitation surfaces are specified in BCAR 14, Volume 1, Chapter 4.

**IEM 15 10.1.8 Coverage areas and requirements for data provision**

[\(See IEM 15 10.1.8\)](#)

Area 4 terrain data and Area 2 obstacle data are normally sufficient to support the production of the Precision



**BELIZE CIVIL AVIATION REGULATIONS  
AERONAUTICAL INFORMATION SERVICES**

**SECTION 2**

**BCAR 15**

Approach Terrain Chart — ICAO. When more detailed obstacle data is required for Area 4, this may be provided in accordance with the Area 4 obstacle data requirements specified in ICAO ANNEX 15 Appendix 8, Table A8-2. Guidance on appropriate obstacles for this chart is given in the ICAO Aeronautical Chart Manual (Doc 8697).

**IEM 15 10.2.1 Terrain data set — content, numerical specification and structure**

[\(See IEM 15 10.2.1\)](#)

Note.— In regions of higher latitudes, latitude grid spacing may be adjusted to maintain a constant linear density of measurement points

**IEM 15 10.3 Obstacle data set — content, numerical specification and structure**

[\(See IEM 15 10.3\)](#)

By definition, obstacles can be fixed (permanent or temporary) or mobile. Specific attributes associated with mobile (feature operations) and temporary types of obstacles are annotated in ICAO ANNEX 15 Appendix 8, Table A8-4, as optional attributes. If these types of obstacles are to be provided in the data set, appropriate attributes describing such obstacles are also required.

**IEM 15 10.4.2 Terrain and obstacle data product specifications**

[\(See IEM 15 10.4.2\)](#)

ISO Standard 19131 specifies the requirements and outline of data product specifications for geographic information.

**IEM 15 10.4.5 Terrain and obstacle data product specifications**

[\(See IEM 15 10.4.5\)](#)

ISO Standard 19109 contains rules for application schema while ISO Standard 19110 describes feature cataloging methodology for geographic information.

ISO Standard 19123 contains schema for coverage geometry and functions.

**IEM 15 10.4.6 Terrain and obstacle data product specifications**

[\(See IEM 15 10.4.6\)](#)

*ISO Standard 19113 contains quality principles for geographic information while ISO Standard 19114 covers quality evaluation procedures.*

**IEM 15 10.4.8 Terrain and obstacle data product specifications**

[\(See IEM 15 10.4.8\)](#)

ISO Standard 19117 contains a definition of the schema describing the portrayal of geographic information including the methodology for describing symbols and mapping of the schema to an application schema.

**IEM 15 10.4.8 Terrain and obstacle data product specifications**

[\(See IEM 15 10.4.8\)](#)

ISO Standard 19115 specifies requirements for geographic information metadata.