UGANDA

Advisory Circular

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GUIDANCE ON PROVISION OF COMPREHENSIVE, ACCURATE AND UP-TO-DATE AERONAUTICAL CHARTS.

1.0 PURPOSE

This Advisory Circular (AC) provides information and guidance on ensuring the provision of comprehensive, adequate, accurate, and up-to-date aeronautical charts in accordance with Regulation 4 of The Civil Aviation (Aeronautical Charts) Regulations, 2022.

2.0 REFERENCE

2.1. Regulation 23, 40 of The Civil Aviation (Aeronautical Information Services) Regulations, 2022
2.2. Regulation 4 of The Civil Aviation (Aeronautical Charts) Regulations, 2022
2.3. Regulation 5 of The Civil Aviation (Rules of the Air) Regulations, 2020
2.4. ICAO Doc 10066 – PANS AIM
2.5. ICAO Doc 8697 – Aeronautical Chart Manual
2.6. ICAO Doc 8126 – AIS Manual

3.0 GUIDANCE AND PROCEDURES

3.1. Provision of comprehensive, adequate and accurate aeronautical charts

3.1.1. Regulation 4 of The Civil Aviation (Aeronautical Charts) Regulations, 2022 requires the State to take all reasonable measures to ensure that the information provided, and the aeronautical charts made available are adequate, accurate and maintained up to date. The requirements specified in Regulation 4 of The Civil Aviation (Aeronautical Charts) Regulations, 2022 are to ensure that each type of aeronautical chart produced continuously provides information relevant to the function of the chart appropriate to the phase of flight for the safe and expeditious operation of the aircraft. This requirement is related to Regulation 40 of The Civil Aviation (Aeronautical Information Services) Regulations, 2022 that requires the aeronautical information service provider (AISP) to maintain up-to-date aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation.

3.1.2. The aeronautical cartographic service provider (ACSP) is responsible for producing comprehensive, adequate, accurate, and up-to-date maintained aeronautical charts provided for in The Civil Aviation (Aeronautical Charts) Regulations, 2022 to facilitate the operational requirements of the various chart users. An accurate, well-designed chart that is easy to read under varying conditions of natural and artificial light will assist in alleviating the tension of flying in adverse weather conditions and, if kept up to date, the chart can contribute greatly to reducing the risk of error.

3.1.3. The challenge of providing current and accurate foundational information to users of aeronautical charts has been a persistent issue for chart producers over the course of several years. Consideration of the problem requires separate treatment of aeronautical information, cultural information and terrain information, the former being more important because aeronautical information shown on a chart is highly susceptible to change. It is essential to safety that the information be kept up to date. The changes in some data on the chart will demand early revision, while changes in less important facilities and procedures can be held for a longer period.

3.1.4. The degree of urgency of chart revision varies according to:

a) the nature and function of the chart, this depending on the accuracy of the navigation required; and

b) the density of data on the chart which is subject to change and the rate of change.

3.1.5. In ensuring that aeronautical charts are kept up-to-date, there are three factors considered: the complexity of the chart, the accuracy of the navigation required, and the intensity of use.

3.1.6. Chart users are generally unwilling to accept hand amendments, which should be avoided as far as practicable or at least kept to a minimum as they are conducive to error. Pilots and briefing officers, particularly those handling large numbers of charts, have little time for manuscript corrections.

3.2. Preventive measures

3.2.1. The best method of reducing the rate of obsolescence is to ensure that changes affecting the charts are kept to a minimum. The ACSP may take into consideration the following measures to accomplish this, it being recognized that some of these matters are somewhat out of the hands of the chart producer:

a) changeable data should be kept to the minimum required to fulfil the function of the chart. This requires, of course, that the function of the chart is clearly defined. Since data on a chart starts to change from the moment of publication, if not before, every unnecessary item on the chart increases the chance of obsolescence;

b) a system should be established for coordinating changes in facilities and procedures, and other matters over which one has control, with the schedule for new chart editions. This is particularly important around the period that the chart normally would be revised, to avoid delays and changes immediately following publication;

c) the effective date of changes in facilities, procedures, etc., should be given advance notice. The chart producer's job becomes impossible unless notice is received in time to permit appropriate action. It is also essential that such advance notification can be relied upon to take place at the specific time;

d) a facility should not be commissioned until it is reasonably certain stability has been reached and that under normal conditions there would be no change in its status or characteristics;

e) the chart specifications should be kept simple and uncomplicated (not only those relating to aeronautical data) so that the production process can be kept to a minimum when a revision is necessary;

f) simultaneous production of associated chart series should be arranged. When each of an associated group of charts carries a different aeronautical date the verification of amendments (which may be found in NOTAM, for example) becomes particularly confusing; and

g) where practicable, bases for future aeronautical overprints should be printed in quantity in advance to permit rapid and economical issue of new editions.

3.3. Maintenance of charts up to date

There are three methods available for maintaining charts up to date:

3.3.1. Hand amendments

3.3.1.1. Hand amendments appear to offer the most effective solution, but are normally not acceptable to the user because:

i. the complexity of modern charts prevents insertion of legible amendments;
ii. many corrections entail expert draughtsmanship and/or interpretation of the material;
iii. there is uncertainty as to whether all relevant material has been received; and
iv. it places a burden on the user whereas it is more economical collectively to action the amendments at the source.

3.3.1.2. Furthermore, hand amendments are unacceptable to chart producers and distributors because of the problem of amending stock before issue and because of the possibility of making errors.

3.3.2. Overprinting

3.3.2.1. Overprinting of charts must coincide with the withdrawal of charts from stock. This system can only be applied, to undistributed stock which would then need to be issued as replacement for existing stock.

3.3.2.2. Also, the complexity of some charts precludes the possibility of overprinting without impairing the legibility of the chart.

3.3.3. Issue of New Editions of charts

3.3.3.1. This method offers the most effective solution, particularly in the case of the more complex charts (densely covered with aeronautical data), and satisfies the users. Any details about the frequency, identification, operating hours, and other features of radio aids to navigation displayed on the World Aeronautical Chart - ICAO 1:1,000,000 or Aeronautical Chart - ICAO 1:500,000 must be regularly updated through new chart editions.

3.3.3.2. However, issuance of new editions has disadvantages:

i. greater production facilities are required;
ii. there are economic drawbacks to both producer and distributing agencies; and
iii. it is difficult to gain cooperation of sales agencies when chart stocks are frequently rendered obsolete, unless the old stock are recalled at no loss to the agencies.

3.3.4. One method which is suitable for certain types of charts is multiple printing and issue in bound volumes. An essential part of such a system is the arrangement for purchase on a subscription basis. with the advantage to the producer of stabilizing the demand, i.e. the quantity to be produced. Additionally, charts which are revised frequently on a pre-determined schedule can also be issued on a subscription basis.

3.4. Frequency of revisions

3.4.1. A chart should be revised as frequently as is necessary to keep it up to date. It is difficult, however, to assess the requirements for scheduling the issue of new editions of charts on an international basis because of the different conditions existing in each State.

3.4.2. The criteria must rest on an analysis of the various charts or chart series available and their interrelationship; for example, if a full complement of charts is available, the maintenance of one series such as the Enroute Chart in a completely up-to-date condition may lessen the necessity for adherence to a schedule for other less critical charts to the extent permissible under the specifications.

3.4.3. The approximate time periods between the revisions of the aeronautical charts are shown in the Table below:

Type of Chart	Approximate period between revisions	Remarks
1) Aerodrome Obstacle Chart (Types A, B)	When accumulation of hand amendments justifies	
2) Precision Approach Terrain Chart	When any significant change in terrain profile occurs	
3) Enroute Chart	28 days (AIRAC cycle) Multiples of 12 weeks (AIRAC cycle)	Congested areas Uncongested areas
4) Standard Departure Chart — Instrument (SID) Standard Arrival Chart — Instrument (STAR)	When a significant change occurs but not more often than 4 weeks	
5) Instrument Approach Chart	When a significant change in procedure occurs	
6) Visual Approach Chart	When accumulation of hand amendments justifies	
7) Aerodrome/Heliport Chart Aerodrome Ground Movement Chart Aerodrome Parking/Docking Chart	When accumulation of hand amendments justifies	
8) World Aeronautical Chart 1:1 000 000 Aeronautical Chart 1:500 000 Aeronautical Navigation Small Scale	Base — 4 years Aeronautical Information — 1 – 2 years	In congested areas the aeronautical information may be revised more frequently.
9) Plotting Chart	Significant change in aeronautical information	

3.5. Issue of "Advance" information

3.5.1. Clear and concise information is essential for pilots of high-performance aircraft to operate safely in busy airspace. Accurate and up-to-date information is necessary to avoid risks, manage complex air traffic, and comply with regulatory requirements. Pilots must be vigilant in obtaining the latest information available.

3.5.2. Pilots on international flights must know all relevant information, as mandated by The Civil Aviation (Rules of the Air) Regulations. Merely absorbing information from pre-flight briefings is no longer adequate. The ACSP must issue charts with new information before it becomes effective. Delayed receipt of charts can result in inadequate forewarning for flight crews.

3.5.3. Changes to radio communication and navigation aids, services and procedures normally shown on aeronautical charts can be anticipated and made effective in accordance with a predetermined schedule of "effective dates". Most of the above-mentioned changes are already subject to the "regulated system (AIRAC)" applied by States' Aeronautical Information Services under the provisions of Regulation 23 of The Civil Aviation (Aeronautical Information Services) Regulations, 2022. Under the AIRAC system, the changes, unless operational considerations make it impracticable:

a) must reach users at least 28 days in advance of an indicated effective date;
b) have effective dates in keeping with a pre-determined, internationally agreed schedule of effective dates based on an interval of 28 days; and
c) must not be changed further for at least another 28 days after the indicated effective date unless the circumstance notified is of a temporary nature and would not persist for the full period.

3.5.4. It is essential that coordination take place between the AISP's and the ACSP's activities to ensure that related aeronautical information is given advance distribution simultaneously on the documents issued by both activities, and timed to be available 28 days before the same effective date. It must be ensured that for four weeks after the effective date of such information, amendment will only be required in respect of urgent unforeseeable temporary changes.

3.5.5. The procedure described above should be brought to the attention of all parties responsible for originating information for aeronautical charts, to ensure that the raw information will be protected while in transfer and received in time for publication on the schedule date. These parties should be advised of the dates established, including not only the publication and effective dates, but also the number of days in advance of publication that all such information should be available to those processing the charts. Ideally there should be an interval of 42 days between the publication date and the effective date. This allows for a period of up to 14 days' postage time in order for recipients to receive the information at least 28 days in advance of the effective date.

3.5.6. In cases where additional notice is desirable and practicable, a publication date of 56 days (or even longer) in advance of the effective date is used. In order to ensure that charts published under AIRAC procedures include the correct effective date, it is essential that an effective date should not be notified until a high degree of certainty exists that it will be met.

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DIRECTOR
SAFETY, SECURITY AND ECONOMIC REGULATION

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