

CPM-14-04



Civil Aviation Procedure Manual

On

Exemption Procedures for

Non-compliances at Aerodromes

For

Flight standard and Regulations Division

Version 2.0

11 May 2017

Civil Aviation Authority of Bangladesh

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FOREWORD

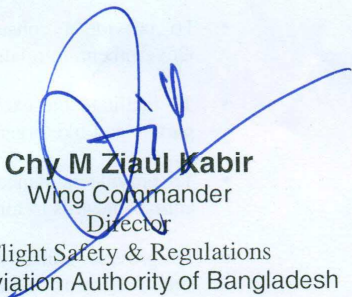
In exercise of the powers conferred by Rule 4 of Civil Aviation Rules 1984 (CAR 84) and so delegated by the Chairman of Civil Aviation authority, Bangladesh (CAAB), Director Flight Safety & Regulations (DFSR) is pleased to issue this CPM-14-04 as a Civil Aviation Procedure Manual on Exemption Procedures for Non-compliances at Aerodromes

An Aerodrome certificate holder is expected to comply with the Rules laid down in the Civil Aviation Rules 1984 and Specifications of Manual of Aerodrome Standards (MAS), Bangladesh. There may be some circumstances where compliance of requirement have not been followed at an existing aerodrome because of physical constraints and where the facility had been provided earlier as per old regulations and continued to be in operation. Similarly there may be situation where compliance is not possible also for a new aerodrome due to physical constraints. These situations require CAA, Bangladesh to have procedures for accepting cases for non-compliance in respect of an aerodrome being issued with a certificate.

This CPM is issued under Rules 4 of CAR 84 and in accordance with the provisions contained in Rule 260D of CAR 84. This CPM stipulates the procedures for application and grant of exemptions for non-compliances with SARPs of MAS CAAB.

The responsibility for the technical matters within this CPM is the responsibility of the Flight Safety and Regulations Division of CAAB

This CPM is issued and amended under the authority of the Chairman of Civil Aviation Authority, Bangladesh.



Chy M Ziaul Kabir
Wing Commander
Director
Flight Safety & Regulations
Civil Aviation Authority of Bangladesh

1. PURPOSE

The purpose of this ANO is to harmonize the procedure for certification of aerodromes which does not conform to all the specifications contained in the “ANO (AD) A.1 – Manual of Aerodrome Standards (MAS), Bangladesh” and are required to be complied for certification of aerodromes.

When non-compliances are present, the effects on safety need to be analyzed and alternative measures and/or limitations on its use to mitigate any non-compliance have to be established. The harmonization of this aspect of the certification process is therefore important for ensuring safety. The Rule 260D (4) of CAR 84 requires that an aeronautical study be conducted for granting exemptions from non-compliances with standards specified in Rule 267 of CAR 84, i.e. SARPs of MAS, CAAB. This is recognized by ICAO Annex 14 Volume I, Aerodrome Design and Operations and also required by the ICAO Safety Management Manual as Safety Assessment Process.

The ultimate goal is to require the non-compliances to be corrected and to deal with the situations where this is not possible, either due to physical constraints like terrain etc.

2. NON-COMPLIANCES

2.1 Non-compliances are primarily related to the following aspects at the aerodrome for which some examples are given below:

Facilities and equipment

- Visual and non-visual aids.
- Obstacles on the strip and the obstacle limitation surfaces i.e. approach, departure and transitional surfaces.
- Strip areas - dimensions and quality, inadequate runway strip.
- Inadequate taxiway width and lack of fillets.
- Runway end safety areas
- Inadequate runway – taxiway separation distances.
- Rescue and fire-fighting vehicles and equipment.
- Meteorological equipment.

Services and operational procedures

- Rescue and fire-fighting services
- Meteorological services
- Low visibility procedures

2.2 Categories of Exemptions

Exemptions for non-compliances shall be:

- i. **Temporary Exemptions:** where the non-compliance is expected to be removed and inter operability is the predominant aspect of the requirement, such as mandatory signs, availability of runway strip etc.
- ii. **Permanent Exemptions:** where non-compliance is not reasonably, be removed

and interoperability is not the predominant aspect of the requirement, such as the infringement of high ground into an obstacle limitation surface etc.

3 PROCEDURE FOR SEEKING EXEMPTIONS

- 3.1 The aerodrome certificate holder shall submit separate application for each non-compliance in the prescribed preform for seeking exemption (See Appendix - I).
- 3.2 The application for exemption shall be supported with the reasons for non-compliance, safety assessment reports, means of mitigation and indication as to when compliance can be expected.

Note: Technical Guidance on conducting Aeronautical studies and Risk Assessment has been described in Appendix-2 of this document.

- 3.3 An application for a standard exemption includes:
- i. The applicant's name and address. Name of aerodrome where exemption is being sought (Aerodrome certificate number to be quoted if already issued).
 - ii. The relevant provisions of ANO for which the exemption is sought.
 - iii. The category under which exemption sought (temporary/permanent) and justifiable reasons why the applicant needs the exemption. The reasons provided should be detailed and self-explanatory.
 - iv. The period for which the exemption is required.
 - v. Whether the exemption will affect a particular kind of operation, the details thereof.
 - vi. the action plan for rectification and review of non-compliance for temporary Exemption, including the mitigation measures adopted for ensuring the safety during the exemption period.
 - vii. If permanent exemption is sought, the applicant has to indicate the mitigation measures adopted to reduce the risk arising due to non-compliance after carrying out a safety assessment.
 - viii. Undertaking by the certificate holder that he shall annually review the conditions or mitigation measures and any other resultant non-compliance in particular when any significant changes in the activity or aerodrome development is proposed.
- 3.4 The applicant should provide adequate information in the prescribed preform for consideration for granting exemptions with supporting documents. Failure to provide adequate information may delay processing / refusal of the application.
- 3.5 The Chairman, CAA Bangladesh after examining the applications for exemptions may exempt, in writing, an aerodrome operator from complying with specific provisions of the MAS CAAB and may impose conditions for such exemptions to ensure the safety and regularity of aircraft operation.
- 3.6 (a) on approval of the exemption, it shall be included in the aerodrome manual and in AIP.

- (b) Exemptions or exceptions granted shall be reviewed to assess their continued validity or whether the cause can be removed.
- (c) A review of exemptions or exceptions which are to be issued against the applicable SARP to determine if a change in the notification status of differences to SARPs should be filed.

Note. – The term “exemptions” also includes exceptions, waivers, deviations, variations or prolonged extensions.

- 3.7 On removal of the exemption the certificate holder shall notify the same to the Chairman, CAA Bangladesh and after approval by the Chairman, CAA Bangladesh, the same shall be deleted from Aerodrome manual and AIP.
- 3.8 The exemption granted shall be reviewed during renewal of the certificate.

APPENDIX - 1

**APPLICATION FOR SEEKING
EXEMPTION**

(In duplicate)

1. DETAILS OF APPLICANT

- 1.1 Name of Aerodrome:
- 1.3 Aerodrome Certificate Number:
- 1.4 Full name of applicant (in capital letters):

2. DETAILS OF EXEMPTION SOUGHT

- 2.1 Relevant provisions of CAR 84 and ANO (AD) A.1 – MAS Bangladesh for which exemption is sought:
- 2.2 The category under which exemption sought (TEMPORARY/ PERMANENT):
- 2.3 Reasons why the exemption is needed (*The reasons provided should be detailed and self explanatory*):
- 2.4 Period for which exemption is required:
- 2.5 If the exemption will affect a particular kind of operation, the details thereof:
- 2.6 For temporary exemption, the action plan for rectification and review of non-compliance, including the mitigation measures adopted for ensuring the safety during the exemption period:
- 2.7 For permanent exemption, the mitigation measures adopted to ensure safety of aircraft operation. Complete safety assessment report shall be enclosed:

I hereby certify that the forgoing information is correct in every respect and no relevant information has been withheld. I also undertake the responsibility for annually reviewing the conditions or mitigation measures and any other resultant non-compliance in particular when any significant changes in the aerodrome activity and development are proposed.

SIGNATURE OF APPLICANT DATE.....

NAME..... (in capital letters)

POSITION HELD..... (with official seal)

Note:

- i) It is an offence to make any false representation with the intent to deceive, for the purpose of procuring exemption
- ii) Application not completed in all respect and not accompanied with relevant enclosures is likely to be rejected.

APPENDIX- 2

**Technical Guidance Material on conducting
Aeronautical studies and Risk Assessment**

1. APPLICABILITY

To all aerodrome operators, who intend to conduct aeronautical studies and risk assessments for their aerodromes.

2. PURPOSE

This document provides guidance to aerodrome operators on the conduct of Aeronautical Study and risk assessment where the aerodrome is unable to meet requirements of Civil Aviation Rules (CAR) & Manual of Aerodrome Certification Procedures (CPM-14-1) and need to identify alternative measures to achieve an equivalent or acceptable level of safety. Although this document relates to aerodromes, the principles contained in it may be applied more widely in circumstances where requirements cannot be met and an alternative means of compliance is proposed

3. REGULATORY REFERENCES:

- i) Civil Aviation Rules (CAR)
- ii) Civil Aviation Procedure Manual on Aerodrome Certification Procedures (CPM-14-1)
- iii) ICAO Annex 14
- iv) ICAO Doc 9774 AN//969 Manual on Certification of Aerodromes.
- v) ICAO Doc 9859 AN/474 Safety Management Manual (SMM)
- vi) ICAO Annex 15
- vii) ICAO Annex 6

4. INTRODUCTION

- 4.1 Civil Aviation Rule 260D contains basic provisions on the use of Aeronautical Studies as a means to identify alternative measures to achieve an equivalent or acceptable level of safety by means other than full compliance with a specific requirement.
- 4.2 It is acknowledged that there could be some other cases where full compliance with requirements cannot be achieved, and for which a deviation from a regulatory requirement will have to be sought. A safety case based on the same principles as an Aeronautical Study should accompany any application for a deviation.
- 4.3 It is important to note that the preferred option must always be to seek compliance with the requirements. In order to achieve an equivalent or acceptable level of safety by other means, one must usually establish mitigating measures that affect the efficiency and usability of the aerodrome.

5. DEFINITION

ICAO Doc 9774 defines an aeronautical study as:

“a study of an aeronautical problem to identify possible solutions and select a solution that is acceptable without degrading safety.”

6. RESPONSIBILITY OF CONDUCTING AERONAUTICAL STUDY

If the aerodrome cannot meet the requirements, it needs to conduct Aeronautical studies and Risk Assessment which will address an alternative means of compliance. Consequently, the responsibility of justifying an application by means of an Aeronautical Study rests with the aerodrome operator.

7. PARTICIPANTS IN THE AERONAUTICAL STUDY

Both aerodrome and flight operational expertise is needed. In some cases ATS and/or PANS - OPS expertise must be involved. Finally, depending on the complexity of the issue, specialists on risk analysis may have to be brought in to assess the degree of risk resulting from the aeronautical study.

8. STEPS OF AN AERONAUTICAL STUDY

8.1 An Aeronautical Study implies a systematic and documented approach to a problem. Thus it consists of certain steps, notably:

- A description of problems and objectives.
- Selection of procedures, methods and data sources.
- Identification of undesired events .
- An analysis of causal factors, severity and likelihood.
- A description of risk.
- Identification of possible mitigating measures.
- An estimation of the effectiveness of mitigating measures
- Choice of mitigating measures
- Presentation of results.

8.2 A description of problems and objectives:

The first step of any risk analysis is to define the deviation and the objective of the exercise. The case study will be to identify the safety implications of not complying (in full) with a certain requirement or requirements. The objective will be to identify suitable mitigating measures, which will address these safety implications. Thus, it is important to understand which hazards and scenarios the requirement(s) in question are designed to protect against.

8.3 Procedures, methods and data sources:

A main issue is whether the study shall follow a quantitative or qualitative approach. The answer will to a large extent dependent upon the data-sources available. A qualitative approach based on common sense and qualified expert opinion will probably, in many cases, yield results that are far better than nothing, and better than a quantitative approach based on a limited set of unrepresentative or unreliable data. Even if it is possible to carry out a quantitative approach, qualified expert opinion is necessary, particularly in the conduct of hazard identification and risk analysis.

8.4 Identification of hazards:

Hazards are any situation or condition that has the potential to cause damage or harm. The basic question one must ask is: **what can go wrong, and where?**

Examples of ‘what’ include, but are not limited to:

- Aircraft colliding with terrain, aircraft, vehicles or objects.
- Aircraft landing in front of the runway threshold (landing short)
- Aircraft running off the far end of the runway or veering off the side of the runway.
- Aircraft colliding with, or ingesting wildlife or foreign objects debris

Examples of ‘where’ include, but are not limited to:

- During flight (approach, landing, bailed landing, take-off, and climb-out)
- On the ground (Runway, taxiway, apron, strips, RESAs, or outside these areas)

The key is to identify hazards that the requirement in question is designed to protect against.

8.5 An analysis of causal factors, severity and probability

8.5.1 Causal factors

The basic questions are:

- Why can it go wrong,
- What is the consequence if it does go wrong and
- How likely is it that it will go wrong?

Examples of ‘why’ include, but are not limited to:

- Lack of guidance (non-visual aids, lights, markings, signs, charts)
- Confusing guidance (non-visual aids, lights, markings, signs, and charts).
- Inaccurate obstacle surveys and obstacle publications.
- Inaccurate aeronautical data
- Insufficient protected areas (strips and RESAs)
- Insufficient separation distances
- Insufficient surface widths
- Insufficient maintenance programmes

Note: In some cases these factors can contribute to an accident and in other cases they can increase the consequences of an incident so that it becomes an accident.

8.5.2 Safety Risk Probability (How likely is it that it will occur?)

This is a probability issue. How often is it likely to occur within a certain number of movements? The Table below also extracted from ICAO doc 9859 – Safety Management Manual gives the probability levels and their descriptions.

Probability	Meaning	Value
Frequent	Likely to occur many times (has occurred frequently)	5
Occasional	Likely to occur sometimes (has occurred frequently)	4
Remote	Unlikely to occur, but possible (has occurred rarely)	3
Improbable	Very unlikely to occur (not known to have occurred)	2
Extremely Improbable	Almost inconceivable that the event will occur	1

8.5.3 Safety Risk Severity

What are the (potential) consequences if it occurs?

The severity of the occurrence is better described by using the table below extracted from ICAO doc 9859 – Safety Management Manual:

Severity of occurrence	Meaning	Value
Catastrophic	<ul style="list-style-type: none"> — Equipment destroyed — Multiple deaths 	A
Hazardous	<ul style="list-style-type: none"> — A large reduction in safety margins, physical distress or a workload such that the operators cannot be relied upon to perform their tasks accurately or completely — Serious injury — Major equipment damage 	B
Major	<ul style="list-style-type: none"> — A significant reduction in safety margins, a reduction in the ability of the operators to cope with adverse operating conditions as a result of increase in workload, or as a result of conditions impairing their efficiency — Serious incident — Injury to persons 	C
Minor	<ul style="list-style-type: none"> — Nuisance — Operating limitations — Use of emergency procedures — Minor incident 	D
Negligible	<ul style="list-style-type: none"> — Little consequences 	E

8.6 Risk Assessment

8.6.1 Risks are the potential adverse consequences of a hazard, and are assessed in terms of their severity and probability.

8.6.2 Thus, for each hazard resulting from the non-compliance, one can now describe the risk by placing the combination of severity and probability in the Risk Assessment Matrix shown below. If the risk comes out as medium or above, risk reduction measures must be identified.

Risk Assessment Matrix

Risk probability	Risk severity				
	Catastrophic A	Hazardous B	Major C	Minor D	Negligible E
Frequent 5	5A	5B	5C	5D	5E
Occasional 4	4A	4B	4C	4D	4E
Remote 3	3A	3B	3C	3D	3E
Improbable 2	2A	2B	2C	2D	2E
Extremely Improbable 1	1A	1B	1C	1D	1E

8.6.3 As can be seen from the risk classification matrix, risk reduction measures can aim towards either reducing the likelihood of an occurrence, or reducing the probability of an occurrence.

8.6.4 The first priority should always be to seek measures that will reduce the likelihood of an occurrence (i.e. accident prevention). When contemplating mitigating measures, it is always necessary to look to the intent of the requirement that is not (fully) complied with.

Examples of mitigating measures include, but are not limited to:

- a) Publication in the AIP as a minimum. (This is an ICAO Annex 15 Standard and is also necessary in order that the airlines can take their precautions, as they are obliged to do according to ICAO Annex 6.)
- b) Aerodrome operational procedures are in some cases relevant. One example is to restrict traffic on a parallel taxiway if runway/taxiway or taxiway/taxiway separation distance is insufficient.
- c) Infrastructure and/or additional visual and/or non-visual aids.
- d) Operational restrictions that might be necessary. These may include restrictions on all-weather operations, increased spacing between aircraft (in the air or on the ground).
- e) Restrictions on aircraft operators that might be necessary, such as:
 - i) Operations restricted to operators/crew who can demonstrate special competence;
 - ii) Requirements that aircraft carry special equipment or certifications;
 - iii) Requirements that operator sets for special wind limits.

8.6.5 Mitigating measures usually means reduced usability for an aerodrome. Safety and usability is a balancing act.

8.7 Estimating the effect of mitigating measures

The mitigating measures should be fed back into the consideration listed earlier in order to evaluate their relevance and effectiveness in reducing risk.

8.8 Choice of mitigating measures

If one or more measures enable the risk to be sufficiently reduced, one can recommend a choice, bearing in mind that the preferred option should be accident prevention, and prepare the final report. Thus the final description should recommend mitigating actions and list the consequences and their probabilities when these are taken into account

8.9 Presentation of results

8.9.1 The work shall be documented in such a way that it is possible to see what has been done. The steps referred to above should be identifiable.

Other key issues:

- a) What essential assumptions, presuppositions and simplifications have been made?
- b) Any uncertainty about the results due to the choice of and availability of methods, procedures and data sources should be discussed.

8.9.2 The results of the study should emphasize which undesired event contributes the most to risk, and factors influencing these undesired events. Recommendations for measures to mitigate risk, their character and their estimated effect shall be stated.

9. ACCEPTANCE BY THE CIVIL AVIATION AUTHORITY, BANGLADESH (CAAB)

The Aeronautical Study and Risk assessment results need to be submitted to Civil Aviation Authority, Bangladesh for review and approval.

End