



GM 14-29

CIVIL AVIATION AUTHORITY OF BANGLADESH

Guidance Manual

Disable Aircraft Removal Plan



Version 2.0
12 June 2024

AERODROME STANDARD DIVISION



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REVISION HISTORY

Revision / Version	Date	Chapter / Section	Details
1.0	August 2016	All	Advisory Circular AC (AD) No-15 Guidance Manual on Disable Aircraft Removal Plan
2.0	29 May 2024	All	GM 14-29 Guidance Manual on Disable Aircraft Removal Plan

Acronym:

ASD- Aerodrome Standard Division;

AAIC BD- Aircraft Accident Investigation Committee;

CA Act- Civil Aviation Act;

MFSR- Member, Flight Standard and Regulations;

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FOREWORD

In exercise of the powers conferred by the Section 14 of Civil Aviation Act 2017, the Chairman, Civil Aviation authority of Bangladesh has promulgated ANO-14 Vol-I by transposing the Provisions of ICAO Annex 14 Vol-1.as specific operating regulations for the Aerodrome Operators, operating in Bangladesh.

An Aerodrome Operator is expected to comply with the Regulations of the ANO-14 Vol-I. There may be circumstances where compliance of requirements by the Aerodrome Operator becomes difficult because of constraints of trained manpower, training facilities and/or other administrative formalities. These situations require CAAB to establish subject specific guidance manuals.

As per para 9.3.1, a plan for the removal of an aircraft disabled on, or adjacent to, the movement area shall be established for an aerodrome, and a coordinator designated to implement the plan, when necessary.

As per para 2.10.2, information concerning the capability to remove an aircraft disabled on or adjacent to the movement area shall be made available.

This GM has been derived from the CA Act 2017, ANO-14, VOL-I, AAIC-BD Rules and Doc 9137 (Part-5). It provides guidance to the aerodrome operators in developing a removal plan for removal of an aircraft disabled on, or adjacent to the movement area.

It is expected that the concerned Aerodrome Operator will take this GM as a reference/guidance material in order to comply with the required regulations for the development of a plan for removal of an aircraft disabled on, or adjacent to the movement area.

This Guidance Manual is issued under the authority of the Chairman of Civil Aviation Authority, Bangladesh and will become effective on the date mentioned in the document and also will supersede the Aerodrome Advisory Circular (AC (AD) No-15) issued on August 2016 on the same subject.

Air Vice Marshal M Mafidur Rahman

BBP, BSP, BUP, ndu, afwc, psc

Chairman

Civil Aviation Authority of Bangladesh

Disabled Aircraft Removal Plan

1. Purpose:

1.1 This GM provides the guidance to demonstrate compliance with, and information related to the establishment of a plan for the removal of an aircraft that is disabled and is located on or adjacent to the movement area in the aerodrome

1.2 The main purpose of this Removal Plan is to provide supplementary guidance to aerodrome operators in formulating the disabled aircraft removal plan. This Plan provides guidance on what is acceptable to demonstrate compliance with the regulatory requirements in ANO-14 Vol-I Section 9.3.

1.3 This Plan recommends and explains elements of removal of a disabled aircraft, in particular, planning, response and responsibilities of the relevant parties.

1.4 The Appendices provide guidance to aerodrome operators in establishing an effective disabled aircraft removal plan for their respective aerodromes. **Appendix A** presents an outline of a disabled aircraft removal plan and **Appendix B** offers a general review and guide to assist in the aircraft removal process.

2. Applicability

2.1 The Plan applies to all aerodrome operators certified/Licensed. However, not all items addressed in this Plan will be applicable at every aerodrome. Aerodrome operators should examine each item carefully, by considering the size, complexity and scope of operations at the aerodrome to determine what applies.

3. Introduction

3.1 An aircraft accident can occur at any time and in any weather conditions with varying degrees of magnitude and the aircraft involved may likely require assistance to remove it from the site. The aircraft removal event can range from minor debugging to major events including damaged or missing landing gear.

3.2 Disabled aircraft will affect many parties. The travelling public, other aircraft operators, the aerodrome operator and the operator of the incident aircraft will be affected to varying degrees. The resultant runway and taxiway closures can substantially reduce the number of arrivals and departures and restrict movement around the aerodrome. Therefore, disabled aircraft that interfere with the normal activity of an aerodrome should be removed expeditiously. The recovery process may take from a few hours to many days depending on the severity. While recovery incidents cannot be predicted, they can be anticipated and prepared for.

4. Objective

The objective of a disabled aircraft removal plan is to specify the roles and responsibilities of all parties involved so as to aid the appropriate management in ensuring that the removal of aircraft is executed as speedily as is consistent with the safety of personnel concerned and with the avoidance of further damage to the

aircraft.

5. Legislation

Following are the legislative reference for removal of Disabled aircraft:-

- a) CA Act 2017 ; Sections 14 and 19;
- b) AAICBD Rules
- c) ANO-14 Vol-I.Para 2.10 & 9.3;
- d) Doc 9137 (Part-5);
- e) Doc 9859-ICAO Safety Management Manual.

6. Responsibilities for Protection of evidence, custody and removal of aircraft:

- 6.1 When an accident or serious incident or incident in the territory of Bangladesh to any aircraft either registered in Bangladesh or any other State, the Chairman being the authority of State of occurrence shall take all responsible measures to protect the evidence and to maintain safe custody of the aircraft and its contents for such a period as may be necessary for the purpose of an investigation.
- 6.2 Safe custody shall include protection against further damage, access by unauthorized persons, pilfering and deterioration and shall be deemed to be in the custody of the Chairman. The aircraft shall not be removed or otherwise interfered without the permission of the AAIC BD.
- 6.3 If a request is received from the State of registry, the State of operator, the State of design or the State of manufacture that the aircraft, its contents and any other evidence remain undisturbed pending inspection by an accredited representative of the requesting State, the AAICBD shall take all necessary steps to comply with such request, so far this is reasonably practicable and compatible with the proper conduct of investigation, provided that the aircraft may be moved to the extent necessary to extricate persons, animal, mails and valuables, to prevent destruction by fire or other causes, or to eliminate other dangers or obstruction to air navigation, to other transport, work to the public, and provided that it does not result in undue delay in returning the aircraft to service where this is practicable.
- 6.4 The removal of aircraft and its contents to a place of safety when the aircraft is wrecked in water should be carried out in co-ordination of AAIC BD.
- 6.5 The removal of goods or baggage is to be done under the supervision of a police officer, but in the case of an aircraft, which has come from outside Bangladesh, the goods or baggage shall not be removed from the vicinity of an aircraft except on a clearance by or with the consent of a custom officer or under the supervision of an officer of Civil

Aviation Authority nominated by the Chairman.

6.6 The removal of mails should be done under the supervision of an officer of the police department or an officer of the postal department or an official of the Civil Aviation Authority, nominated by the Chairman.

6.7 Request for an Aircraft of foreign State to remain undisturbed will be dealt with by the AAICBD.

6.8 Release of aircraft etc., from custody.-

When the retention of an aircraft, any parts or the contents thereof is no longer necessary for the purpose of an investigation or an inquiry, the AAICBD shall in writing, release from its custody the aircraft, parts or contents, as the case may be, to the owner of the aircraft, or in the case of aircraft other than a Bangladesh aircraft, to the persons duly authorized by the State of registration.

7. Disabled aircraft removal planning

7.1 ANO-14 VOL-I Section 9.3 requires each aerodrome to establish a comprehensive plan for the removal of a disabled aircraft on or adjacent to, the movement area and a coordinator designated to implement the plan, where necessary.

7.2 The disabled aircraft removal plan (Appendix A) should be based on the characteristics of the aircraft that may normally be expected to operate at the aerodrome, and include among other things:

7.2.1 a list of equipment available on or in the vicinity of the aerodrome;

7.2.2 a list of additional equipment available from other aerodromes on request;

7.2.3 arrangements for the rapid receipt of aircraft recovery equipment kits available from other aerodromes;

7.2.4 a list of nominated agents acting on behalf of each operator at the aerodrome;

7.2.5 a statement of the airlines arrangements for the use of pooled specialist equipment; and

7.2.6 a list of local contractors (with names and telephone numbers) able to supply heavy removal equipment on agreement basis.

7.3 Information regarding the capability to remove a disabled aircraft should be expressed in terms of the largest type of aircraft which the aerodrome is equipped to remove.

7.4 This capability should be based on the equipment available at the aerodrome and on equipment which can be available at short notice. Should the disabled aircraft removal plan take into account an airline pooling arrangement, the determination of the capability to remove a disabled aircraft should also take into consideration the specialized aircraft recovery kits available from the aerodromes.

7.5 Para 2.10 of ANO 14 Vol-I requires that each aerodrome nominates an Aerodrome Co-ordinator of operation for the removal of an aircraft disabled on or adjacent to the movement area whose **telephone/ fax number(s)**

shall be made available in Aerodrome Manual and AIP and shall also be made available to the aircraft operators operating at the airport concerned.

8. Response

The removal of disabled aircraft can be complex and involve a number of specific procedures including multipart leveling and lifting actions. These procedures can be dangerous and safety precautions must take precedence over all other constraints. Prevention of secondary damage must also be a priority. In some cases, the removal process may not be able to commence until investigation by the Accident Investigation Committee has been completed and the aircraft is formally released. Because of these issues, it is not always possible for the aerodrome to be cleared as quickly as hoped/expected for by the aerodrome operator.

9. Responsibilities

9.1 For an aircraft removal operation to complete as quickly as possible, all parties should be expeditiously facilitated and already have the proper procedures in place. An efficient removal operation requires sufficient planning and readily accessible recovery equipment.

9.2 Aerodrome operator

9.2.1 Where the aircraft accident or serious incident occurs on or adjacent to the aerodrome, the aerodrome operator shall notify, among others the Member(FSR), ASD, CAAB and AAIC, BD as soon as reasonably practicable.

9.2.2 The aerodrome operator should have;

- an officer designated to coordinate the aircraft recovery operation;
- a disable aircraft removal plan available; and
- a copy of aircraft operators' removal plan on file, for every regular user of the aerodrome.

9.2.3 The aircraft should be removed in a timely and efficient manner. The aerodrome operator would take over the responsibility and contract the removal to a third party in the event that the aircraft operator is unable to recover the aircraft or could not proceed in timely manner.

9.2.4 The aerodrome operator should hold regular tabletop exercises with the aircraft operators to anticipate and prepare for various aircraft removal scenarios and their projected outcomes.

- 9.2.5 Aircraft recovery operations may be conducted while an aerodrome is still in operation. However, recovery devices such as mobile cranes may penetrate the obstacle limitation surfaces or interfere with radio navigational aids. Therefore, risks associated with the recovery operations should be assessed and mitigated to ensure aerodrome operational safety.

9.3 Aircraft operator

- 9.3.1 It is crucial that the relevant person of the aircraft operator notifies as soon as practicable after he/she becomes aware of the accident or serious incident.
- 9.3.2 It is the responsibility of the registered owner or aircraft operator to remove the disabled aircraft. The aircraft operator's insurance representative should also be notified of the accident or incident.
- 9.3.3 The aircraft operator should have an aircraft recovery process document available for review. The document should include information which the aircraft operator will use to remove the aircraft and all relevant contact numbers. A copy of the document should be provided to the aerodrome operator.
- 9.3.4 Expenditures incurred in the aircraft recovery process are to be borne by the Aircraft Owner or Operator as agreed upon between them.

9.4 Designated Co-ordinator

9.4.1 The designated coordinator should carry out the following for purposes of implementing the disabled aircraft removal plan:

- (a) discuss the most appropriate removal operation with the aircraft operator representative, AAIC, BD investigators, representatives of resident oil companies, heavy equipment contractors and other parties as may be necessary, and establish the following points to be detailed in the plan:
 - (i) escort routes between the aircraft operator's area and the occurrence site;
 - (ii) defueling to lighten the mass of the aircraft;
 - (iii) requirements and availability of equipment for the removal of the aircraft;
 - (iv) use of aerodrome and aircraft operator's equipment;
 - (v) dispatch of aircraft operator ancillary support devices to the scene;
 - (vi) weather conditions, particularly when crane lifting or pneumatic lifting bag operation is necessary;
 - (vii) lighting of the site; and
 - (viii) contingency plan, should difficulties develop in the initial plan;
- (b) arrange for rescue and fire fighting services, when necessary;

- (c) supervise aerodrome personnel and equipment assigned to the removal operation;
- (d) report further penetrations of obstacle limitation surfaces due to the manoeuvring of cranes or other equipment during the lifting of the aircraft;
- (e) monitor weather forecasts;
- (f) maintain a chronological summary of the removal operation;
- (g) have photographs of the removal operation taken where possible;
- (h) where excavations are necessary, check with the appropriate aerodrome maintenance services for underground utilities;
- (i) keep CAAB and other aircraft operators informed of the progress of the aircraft removal operations;
- (j) arrange for removal of mail, baggage and cargo, it being understood that authority to remove these items must be secured from AAIC, BD ; and
- (k) participate in the removal operation debriefing.

9.4.2 The designated coordinator should ensure that the registered owner or aircraft operator's designated representative carry out the following actions:

- (l) implement the aircraft operator's removal plan for such an emergency;
- (m) meet with AAIC, BD investigator and other relevant parties, as necessary, to detail the actions needed for the removal of aircraft;
- (n) consult with aircraft airframe and engine manufacturers, or other aircraft operator representatives experienced in such accidents, as necessary; and
- (o) participate in the removal operation debriefing.

9.5 Insurance underwriter

The aircraft operator is ultimately responsible for its aircraft, which includes its removal after an accident or a serious incident. The insurance underwriter may be involved in the aircraft removal process through a representative. The aircraft operator, with the assistance of the underwriter

will arrange for the removal of the aircraft and, in the case where the aircraft operator possesses the necessary expertise, the operator will perform the aircraft removal. Every effort should be made during the recovery operation to avoid further damage to the aircraft as well as the accident site.

10. Conclusion

- 10.1 An established command structure and clear lines of communication between various parties is essential to the efficient removal of disabled aircraft. While tabletop exercises can help to anticipate and prepare for various aircraft removal scenarios, a post mortem of an actual disabled aircraft removal event should be conducted to examine areas where improvements can be made.
- 10.2 Periodic review of the disabled aircraft removal plan should be conducted by the aerodrome operator to ensure that the plan is in line with the aerodrome operator's own safety policy and in compliance with the requirements of ANO -14 Vol-I and in tuned to the latest technology, where possible.

11 Queries:

If there are any queries with regard to this Aircraft Recovery plan please Address them to:

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APPENDIX A

Outline of a disabled aircraft removal plan

An outline of a disabled aircraft removal plan is given below. It is intended as a guide on basic matters to be covered in the plan as well as action to be taken by main responsible parties for the overall aircraft removal operation. In general, the disabled aircraft removal plan should be structured to take into account the principal functions shown in **Appendix B**.

1. Responsibilities

1.1 Removal of a disabled aircraft or parts thereof.

- Identify person or agency (usually the aircraft owner or operator) responsible for the removal of the aircraft, and define procedures in the event of failure to comply with such directions.

1.2 Notification of the aircraft accident or serious incident to MFSR, ASD,CAAB and AAIC BD.

- Identify person or agency (usually the aircraft owner or operator or the aerodrome operator) responsible for notifying MFSR, ASD,CAAB and AAIC BD.

List the details to be notified, such as aircraft operator, time, passengers and extent of damage.

1.3 Preservation of aircraft, mail, cargo and records.

- Identify person or agency (normally the aircraft owner or operator) responsible for preserving, the aircraft and parts thereof, cargo, mail, and all records. Define procedures to be followed when it is necessary to disturb or move the aircraft or parts thereof (i.e. photographs, marks on the ground and diagram of the accident site). All these to be in co-ordination of AAIC BD.

2. Action required by main responsible parties

2.1 Aerodrome operator should, among other things:

- (a) Issue required NOTAM as may be appropriate;
- (b) Coordinate all aerodrome operations with the Air Traffic Service Units for continuation of aircraft operations, when possible;

- (c) Determine if the serious incident or accident created any obstacles and, as a result, consider whether any section of the movement area should be closed;
- (d) Provide for security of the accident site and co-ordinate with AAIC BD on measures to be taken before the aircraft removal operation is initiated;
- (e) Provide advance vehicles and personnel to escort airline equipment to the site;
- (f) Establish a removal command post at the site, if necessary;
- (g) Inspect all areas prior to resumption of normal aircraft operations;
- (h) Convene a removal operation debriefing of all interested parties. The debriefing may include a review of Accident Investigation Committee's requirements, the coordinator's chronological report, and a discussion of the procedures and equipment during the recovery operation;
- (i) Amend the disabled aircraft removal plan to overcome problems identified under (h); and
- (j) Participate in the removal operation debriefing.

2.2 Aerodrome coordinator of disabled aircraft removal operations should, amongst other things:

- (a) Convene a meeting with the aircraft operator representative, accident investigators, representatives of resident oil companies, heavy equipment contractors and other parties necessary, to discuss the most appropriate removal operation and agree upon a broad plan of action. This should cover the following points:
 - 1) Escort routes to the event site;
 - 2) Defueling to lighten the mass of the aircraft;
 - 3) Requirements availability of equipment for the removal of the aircraft;
 - 4) Use of aerodrome and aircraft operator's equipment;
 - 5) Dispatch of aircraft operator ancillary support devices to the scene;
 - 6) Weather conditions, particularly when crane lifting or pneumatic lifting bag operation is necessary;
 - 7) Lighting of the site; and
 - 8) Contingency plan, should difficulties develop in the initial plan;

- (b) Provide for rescue and fire fighting vehicles, when necessary;
- (c) Supervise aerodrome personnel and equipment assigned to the removal operation;
- (d) Report further penetrations of obstacle limitation surfaces due to the manoeuvring of cranes or other equipment during the lifting of the aircraft;
- (e) Monitor weather forecasts;
- (f) Maintain a chronological summary of the removal operation;
- (g) Have photographs of the removal operation taken where possible;
- (h) Where excavations are necessary, check with the appropriate aerodrome maintenance services for underground utilities;
- (i) Keep CAAB and other aircraft operators informed of the progress of the aircraft removal operations;
- (j) Arrange for removal of mail, baggage and cargo, it being understood that authority to remove these items must be secured from accident investigators; and
- (k) Participate in the removal operation debriefing.

2.3 Aircraft operator's representative should, amongst other things:

- (a) Implement the aircraft operator's removal plan for such an emergency;
- (b) Meet with aerodrome coordinator, accident investigators and other relevant parties to develop a comprehensive plan for the removal of aircraft;
- (c) Decide on the need for consultation with aircraft airframe engine manufacturers, or other aircraft operator representatives experienced in such accidents; and
- (d) Participate in the removal operation debriefing.

3. Information on equipment, personnel and facilities for removal of a Disabled Aircraft

3.1 Equipment and personnel available.

- 3.1.1 List of equipment and personnel on or in the vicinity of the airport that would be available for the removal operation. The list of equipment should include information on the type and location of heavy equipment or special units needed, and the average time it will take to get them to the aerodrome.
- 3.1.2 The list of personnel should also contain information on the availability of human resources for road making and other duties. Names, addresses and telephone numbers of personnel and equipment representatives should be given.

3.2 Access routes.

- 3.2.1 Include information on access routes to any part of the airport. A grid map referred to in ANO (AD) A.1 will be useful for this purpose.

3.3 Security.

3.3.1 Define means of maintaining security for the aircraft removal operation.

3.4 Aircraft removal equipment kits.

3.4.1 Describe arrangements for the rapid receipt of aircraft removal equipment kits available from other airports. This should be coordinated with the airlines operating at the aerodrome.

3.5 Aircraft data.

3.5.1 Describe arrangements to make available, at the aerodrome, manufacturer's data pertaining to aircraft removal for the various types of aircraft which normally use the aerodrome.

3.6 Aircraft defueling.

3.6.1 Describe arrangements with the resident oil companies to ensure that the defueling, storage and disposal of the aircraft fuel, including contaminated fuel, can be done at short notice.

3.7 Responsible representatives.

3.7.1 List names, addresses and telephone numbers of responsible representatives of each aircraft operator, as well as of the nearest representatives of aircraft and engine manufacturers.

APPENDIX B**Planning chart**

The attached chart is intended as a general guide to assist in the aircraft removal process. It is

Basic Recovery Steps				
1 Survey	2 Plan	3 Prepare	4 Recover	5 Report
Aircraft condition: -Recover or salvage -Altitude -Landing gear -Structure -Damaged components -Missing components -Unserviceable components -Cargo and fuel Site: -Terrain -Soil -Access routes Weather: -Current -Forecast	Rapid recovery: -Important -Not important Weight and balance: -Calculate weight of fuel and cargo -Calculate centre of gravity Weight reduction: -Unload cargo -Defuel -Remove major components Recovery: -Reduce weight -Prepare site -Level	Monitor and record: -Loads -Actions performed Assemble equipment and manpower: -Confirm arrival dates Weight reduction: -Unload cargo -Defuel -Remove major components Prepare site: -Clear -Excavate -Fill -Stabilize	Monitor and record: -Loads -Actions performed Stabilize: -Tether -Ground anchors -Jacks -Shoring Level/Lift: -Jacks -Airbags -Cranes -New technology equipment Debogging; -Cofirm a lifting	Report: Include in aircraft technical history. -recovery details -repair details -record of loads

not anticipated to be used as step-by-step instructions in dealing with a removal event.

	-Lift		method	
Equipment availability:	-Stabilize	Roadway:		
-Preparation	-Move	-Clear	Move:	
-Levelling		-Excavate	-Tow on gear	
-Lifting	Schedule equipment manpower required:	-Fill	-Move on suitable trailer	
-Moving	-Confirm delivery plan	-Stabilize		
-Stabilizing		-Manufactured temporary roadway		
Manpower availability:	Secondary damage:			
-Number	-Prevent or			
-Skills	-Accept to reduce recovery time			
Environmental issues:				
-Fluid spills				
-Hazardous materials				