



PROCESS & APPLICATION: TRANSPORTATION OF DANGEROUS GOODS BY AIR

SECTION 1 GENERAL

1.1 PURPOSE

This Advisory Circular (AC) provides specific guidance to organizations preparing for and completion of the GCAA certification process for the transport of dangerous goods by air.

1.2 STATUS OF THIS ADVISORY CIRCULAR

This is an original issuance of this AC.

1.3 BACKGROUND

- A. ICAO Standards in Annex 18, Safe Transportation of Dangerous Goods by Air, require that Ghana must complete an assessment of an individual, organization or entity before issuing an authorization allowing these entities to engage in the process of transportation of dangerous goods by air.
- B. In support of its international safety oversight obligations, Ghana has safety legislation and guidance regarding the requirements that apply to the safe transportation of dangerous goods, including—
 - 1) GCADs Part 18; and
 - 2) Dangerous goods advisory circulars
- C. Ghana has established a certification process to ensure the completeness and standardization for the issuance of authorizations to transport dangerous goods by air.

1.4 APPLICABILITY

This AC is applicable to all operators and organizations involved in the process of transportation of dangerous goods by air in aircraft of Ghana registry and/or as the holder of an Air Operator or Aerial Work Certificate.

1.5 RELATED DIRECTIVES

The following directives are directly applicable to the guidance contained in this advisory circular—

- Part 18, Carriage of Dangerous Goods by Air

- Advisory Circulars are intended to provide advice and guidance to illustrate a means, but not necessarily the only means, of complying with the directives, or to explain certain regulatory requirements by providing informative, interpretative and explanatory material.
- Where a directive contains the words “prescribed by the Authority,” the AC may consider to “prescribe” a viable method of compliance, but status of that “prescription” is always “guidance” (never a directive).

1.6 RELATED PUBLICATIONS

For further information on this topic, individuals, organizations and other entities are invited to consult the following publications—

- 1) Ghana Civil Aviation Authority (GCAA)
 - ◆ AC 18-002, Guidance for Development of Dangerous Goods Manuals. Copies may be obtained from the GCAA Safety Directives Department.
 - ◆ AC 18-003, Guidance for Development of Dangerous Goods Training Programs.
- 2) International Air Transport Association (IATA)
 - ◆ Dangerous Goods Directives
- 3) International Civil Aviation Organization (ICAO)
 - ◆ Annex 18, Safe Transportation of Dangerous Goods by Air Copies may be obtained from Document Sales Unit, ICAO, 999 University Street, Montreal, Quebec, Canada H3C 5H7.
 - ◆ Technical Instructions (TI)

1.7 DEFINITIONS & ACRONYMS

1.7.1 DEFINITIONS

A. The following definitions are used in this advisory circular—

- 1) **Dangerous goods.** Articles or substances which are capable of posing a risk to health, safety, property or the environment when transported by air and which are classified according to the International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air.
- 2) **Dangerous goods accident.** An occurrence associated with and related to the transport of dangerous goods by air which results in fatal or serious injury to a person or major property damage.
- 3) **Dangerous goods incident.** An occurrence, other than a dangerous goods accident, associated with and related to the transport of dangerous goods by air, not necessarily occurring on board an aircraft, which results in injury to a person, property damage, fire, breakage, spillage, leakage of fluid or radiation or other evidence that the integrity of the packaging has not been maintained. Any occurrence relating to the transport of dangerous goods which seriously jeopardizes the aircraft or its occupants is also deemed to constitute a dangerous goods incident.
- 1) **Hazardous chemical** – Any chemical which has properties that present either physical or health hazards. Hazardous chemicals include both physical and health hazards.
- 2) **Hazardous materials** – A substance or material which is capable of posing an unreasonable risk to health, safety and property when transported. (See also the definition of “dangerous goods.”)
- 3) **Hazardous Occurrence:** accident or other occurrence arising in the course of or in connection with the employee’s work that has caused or is likely to cause injury to that employee or to any other person
- 4) **Hazardous waste** – A discarded substance that because of its quantity, concentration, physical, chemical or infectious characteristics may cause or contribute to a serious illness or pose a substantial or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of.

1.7.2 ACRONYMS

The following acronyms are used in this manual—

- 5) **AOC** – Air Operator Certificate
- 6) **COMAT** – Company Materials
- 7) **DG** – Dangerous Goods
- 8) **DGC** – Dangerous Goods Coordinator
- 9) **DGR** – IATA Dangerous Goods Directives
- 10) **IAEA** – International Atomic Energy Agency.
- 11) **IATA** – International Air Transport Association
- 12) **ICAO** – International Civil Aviation Organization
- 13) **ICAO-TI's** – International Civil Aviation Organization Technical Instruction for the Safe Transport of Dangerous Goods by Air.
- 14) **NOTOC** – Notification to the Captain

SECTION 2 OPERATIONAL CERTIFICATION

2.1 PHASE ONE: PRE-APPLICATION

2.1.1 DECLARATION OF INTENT

- A. The organization or individual intending to transport dangerous goods by air should officially advise the GCAA that they intend to apply for authorization to transport dangerous goods by air.
- B. This is normally accomplished by the submission of a formal letter of intent.

2.1.2 PRE-APPLICATION MEETING

- A. The operator is entitled to a pre-application meeting to provide more specific guidance regarding the submission of a complete formal application.
- B. The operator may, however, choose to submit their application without attending the meeting.

2.1.3 PRE-APPLICATION MEETING CONTENTS

This meeting will normally contain a discussion of the—

- 1) Provision of the application in paper copies and digital files.
- 2) Process and actions that will be followed to complete the certification include—
 - (a) Initial application review
 - (b) Document conformance evaluations
 - (c) Inspections and demonstrations; and
 - (d) Final certification actions by GCAA
- 3) Formal application checklist;
- 4) Part 18 Conformance Checklist;
- 5) Dangerous Goods Manual;
- 6) Dangerous Goods Training Program

- 7) Revisions to the Flight Operations manual;
- 8) Revision to the Cabin Crew Member manual, if applicable;
- 9) Revision to the Station manual;
- 10) Proposed service providers

2.2 PHASE TWO: INITIAL APPLICATION REVIEW

2.2.1 HANDLING OF THE FORMAL APPLICATION

- A. The submission of the formal application will not be treated by the GCAA as formal event.
- B. The organization may have meeting to present the application, but the GCAA will not comment on the quality of the application at that time.

2.2.2 INITIAL APPLICATION REVIEW MEETING

The GCAA will hold an internal meeting at a later day to determine if the contents of the application are acceptable for processing. The standard used will be that the application—

- Is complete (all required documents); and
- Complies with the general requirements for such applications.

2.2.3 FORMAL REJECTION OR ACCEPTANCE

- A. Shortly after the GCAA's internal meeting, they will schedule a formal meeting to officially—
 - 1) Reject the application, or
 - 2) Accept the application package for processing through the document conformance phase.
- B. If the initial review and meeting are found to be acceptable, the GCAA will then accept the documents for processing.

2.3 PHASE THREE: DOCUMENT CONFORMANCE

2.3.1 USE ALL AVAILABLE REFERENCES

The applicant should use the following documents during the development of its formal application submission—

These references will be used by the GCAA to cross-compare with the documentation submitted by the applicant.

- 1) Part 18 of the GCADs;
- 2) GCAA Dangerous Goods Advisory Circulars
- 3) ICAO Technical Instructions;
- 4) IATA Dangerous Goods Directives; and
- 5) Other relevant published international safety practices.

2.3.2 CONFORMANCE CHECKLIST

- A. The most accurate indicator of the completeness of the dangerous goods certification is the Part 18 conformance checklist in its final form.

B. Usually the initial conformance checklist submitted by an operator is very inaccurate with respect to the manual references and comments regarding the conformance of the company manuals to the applicable directives.

- This conformance checklist must be accurate before the certification can be completed.
- The operator should make every effort to have it acceptable at the time of submission of the application.

C. This checklist will be continually updated during this process to reflect the accurate or revised manual procedures.

Obtain a template copy of the Part 18 Conformance Checklist from the GCAA.

D. The final conformance checklist will be inserted in the Completed Certification Report binder as one of the primary “proofs” that, at the time of certification, the applicant was in conformance with the minimum standards of the applicable directive.

2.3.3 ORGANIZATION

- A. Evaluation of the applicant’s organization and key personnel associated with the proposed dangerous goods will occur early in this phase.
- B. If the GCAA has any objections or reservations regarding the proposed organization or key personnel, these will be shared with the applicant as soon as possible.
- C. This urgency will also apply to the any service providers proposed for use in the dangerous goods process. The contractual arrangements with these personnel and the assigned responsibilities must be understandable to the GCAA.

2.3.4 MANUALS

A. The GCAA will evaluate the DG Operations Manual through comparisons of the proposed information, policy and procedure with the—

Refer the GCAA Advisory Circular AC 18-002 for more specific guidance for this documentation.

- 1) Submitted conformance checklist;
- 2) ICAO Technical Instructions; and
- 3) Advisory circulars and other relevant manuals.

B. If the applicant has included accurate DG legislation references in the text of the manual this comparison process can be accelerated.

C. The GCAA will also evaluate the applicant’s arrangements for ensuring that all persons involved in DG preparation or acceptance have direct and immediate access to the DG reference manuals.

2.3.5 TRANSPORT POLICIES

A. The applicant must have very specific policies regarding the classes and quantities of dangerous goods that will be transported or forbidden.

- These policies should be evaluated with respect to the ICAO-TI and the applicant’s apparent capabilities

B. The applicant should have specific guidance to the flight crews regarding their transport of articles that may be considered to be dangerous goods.

C. This is also true in passenger handling situations, the persons who perform ticketing, gate and cabin duties must be knowledgeable of articles that may or may not be carried on board the aircraft.

DG guidance should be included in the DG Operations manual and as a chapter in the specific primary user manuals.

2.3.6 PREPARATION & ACCEPTANCE

- A. The persons involved in the preparation or acceptance of dangerous goods for transport by air are the most critical performers in this process.
- B. The instructions and guidance that are provided to them must be very complete and accurate.

2.3.7 STORAGE, HANDLING & SEGREGATION

- A. The storage, handling and segregation of the dangerous goods will be performed at almost every juncture in the transport process.
- B. Depending on the classes, divisions and subsidiary risks of the dangerous goods proposed to be transported, these procedures can be critical. They must adhere closely to the ICAO-TI requirements.

2.3.8 INCIDENT PROCEDURES

- A. All goods involved in transportation are subject to damage depending on the manner in which they are handled.
- B. Damage and possible leakage in the transportation of some dangerous goods can have catastrophic consequences.
- C. Proper reporting of these incidents is a GCAD requirement.

- There must be adequate guidance for handling and containing damage and leakage incidents.
- The reporting procedures should be sufficient to provide a good starting point for the investigation.

2.3.9 LOADING & TRANSPORT

- A. The actual loading of the aircraft is also a critical point in the transport of dangerous goods by air. The location, segregation and securing of these articles, containers or overpacks must be done by knowledgeable persons using good procedures.
- B. The provision of the information regarding the dangerous goods classes and locations will ensure that the flight crews are prepared to make correct decisions if incident occurs in flight. This document is also made available to ground personnel including responders. It is critical to safety.

2.3.10 FORMS & RECORDS

- A. The applicant will be using forms, records and other documents to ensure conformance with the applicable requirements.
- B. These documents must be easy to understand and use.

2.3.11 EMERGENCY PROVISIONS

- A. Emergency procedures that provide clear instructions to the participants in the process contribute to effective handling of incidents before they become emergencies.
- B. The emergency procedures will be carefully checked using the reference and aircraft-specific documents.

2.3.12 TRAINING

- A. Dangerous goods training is stressed as the most effective factor in safe transport by air.
- B. The requirements provided in the ICAO-TI will provide for a comprehensive training program.

- Refer the GCAA Advisory Circular AC 18-003 for more specific guidance for this documentation.

- C. The submitted training program and curriculums include all required training subjects and exercises will be thoroughly reviewed to meet the training objectives.

2.3.13 QUALITY ASSURANCE

- A. Most applicants do not perform all aspects of the dangerous goods process using company personnel.
- B. This is an area where the set-up of good quality audits by the operator will be vital to the continued conformance to the minimum standards for safe transport of dangerous goods.

2.4 PHASE FOUR: INSPECTION & DEMONSTRATION

In practice, the applicant will experience four identifiable groupings of inspections in this phase—

- 1) Training;
- 2) Preparatory;
- 3) Shipments; and
- 4) Operational Demonstration.

- This phase will sometimes overlap with the completion of the Document Conformance Phase due to corrections necessary to documents.
- This will be especially true if additional document revisions result from inspection findings.

2.4.1 TRAINING INSPECTIONS

- A. The participants will need to receive the qualifying training early in the process.
- B. This may be done in a centralized class or will be done in several non-concurrent locations depending on the work functions of the participants.
- C. The GCAA will conduct inspections the training as necessary to validate the completeness and quality of the training related to the specific curriculum and objectives.
- D. The performance of the instructors used in the DG training must be satisfactory.

The GCAA will review the training records of all participants to ensure documented qualification before conducting the inspections included in the shipping and operational groupings.

2.4.2 PREPARATORY INSPECTIONS

- A. The GCAA will conduct inspections at the facilities of the operator and service providers to ensure that the necessary infrastructure exists.
- B. These inspections will include—
- 1) Facilities, including signage and equipment necessary for movement of DG;
 - 2) Correct and sufficient copies of manuals necessary to the DG process;
 - 3) Adequacy of the supplies necessary to the DG process; and
 - 4) Adequacy for handling and storage of the classes of DG to be shipped.

The GCAA will not conduct the shipping and operational inspections until these preparatory inspections have been conducted for all identified entities.

2.4.3 SHIPPING INSPECTIONS

The GCAA personnel will be present to monitor the actual—

- 1) Preparation and packaging of the first dangerous goods to be shipped as cargo on the required validation flight.

- 2) Acceptance of the dangerous goods packages by the operator or agent;
- 3) Completion of the shipping papers that accompany the dangerous goods package; and
- 4) Performance of the personnel at these critical steps in the dangerous goods process.

The GCAA will not authorize a validation flight unless all issues identified in the training, preparatory and shipping inspections have been resolved.

2.4.4 CARRY VALIDATION FLIGHT AUTHORIZATION

- A. When the previously identified issues are resolved, the GCAA will issue a letter authorizing the operator to conduct a validation first flight carrying dangerous goods under the supervision of the GCAA.
- B. The applicant must carry a copy of this letter in the aircraft flight deck, located with the draft aircraft display AOC and operations specifications, during the flight.

2.4.5 OPERATIONAL INSPECTIONS

The GCAA personnel will be present to monitor the actual—

- 1) Loading (and subsequent unloading) of the aircraft;
- 2) Completion of the loading documents related to transport of DG by air, including the NOTOC;
- 3) Flight crew procedures relative to the presence of dangerous goods, understanding of the NOTOC, possible dangers and emergency procedures.

The applicant should expect that one or more of the GCAA personnel will be on the validation flight.

2.4.6 VALIDATION FLIGHT RESULTS

If the results were—

- Acceptable, the GCAA will proceed to the completion of the necessary operational authorizations.
- Not acceptable, the GCAA will ensure the correction of the issues before authorizing another validation flight.

2.5 PHASE FIVE: FINAL CERTIFICATION ACTIONS

2.5.1 ISSUANCE OF OPERATIONAL APPROVALS

- A. All documents previously granted interim approval during the certification will now be granted operational approval by the GCAA.
- B. At a minimum, these approvals will be given to DG—
 - 1) Operations manuals and/or supplements to other manuals;
 - 2) Training programs and/or curriculums; and
 - 3) Documents, such as forms, records.

2.5.2 AMENDMENT OF MASTER OPERATIONS SPECIFICATIONS

- A. For AOC holders, the master operations specifications will be amended to show the authorization for transportation of dangerous goods by air.
- B. A print-out of that amended operations specifications shall be circulated for GCAD and operator signatures.

● 1160D: Issue Revised Ops Specs Page

2.5.3 AMENDMENT OF AIRCRAFT DISPLAY OPERATIONS SPECIFICATIONS

An amended aircraft display operations specifications shall be issued for each aircraft make, model and series that the operator may use for transport of dangerous goods.

SECTION 3 CONTENTS OF FORMAL APPLICATION PACKAGE

3.1 GENERAL REQUIREMENTS

The following documents will be considered individually—

- 1) Formal Application Checklist;
- 2) Part 18 Conformance Checklist;
- 3) Dangerous Goods Manual(s);
- 4) Dangerous Goods Training Program with applicable curriculums
- 5) Revisions to the Flight Operations manual;
- 6) Revision to the Cabin Crew Member manual, if applicable;
- 7) Revision to the Station manual;
- 8) List of proposed services providers
- 9) Subscription to ICAO Technical Instructions in sufficient quantities for use by personnel
- 10) Subscription to ICTA Dangerous Goods Directives in sufficient quantities for use by personnel
- 11) Copies of all forms proposed to be used by company personnel and service providers, if applicable.

- GCAA inspectors shall have unobstructed ability to refer to these documents.
- If this criteria is not met, copies of these manuals will be required to be submitted to the GCAA offices as a part of the application..

3.2 AVAILABLE FOR CONSULTATION

The following documents must be available at the applicant's facilities for consultation—

- 1) ICAO Technical Instructions;
- 2) IATA Dangerous Goods Directives

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