澳門特別行政區
REGIÃO ADMINISTRATIVA ESPECIAL DE MACAU

民航局
AUTORIDADE DE AVIAÇÃO CIVIL
CIVIL AVIATION AUTHORITY

AERONAUTICAL CIRCULAR
CIVIL AVIATION AUTHORITY – MACAO, CHINA

SUBJECT:

Dangerous Goods Training Programme

EFFECTIVE DATE:

01 January 2025

CANCELLATION:

NIL

GENERAL:

The President of Civil Aviation Authority – Macao, China, in exercise of his power under Paragraph 89 of the Air Navigation Regulation of Macao (ANRM) and Article 35 of the Statutes of Civil Aviation Authority, approved by the Decree-Law 10/91/M, established this Aeronautical Circular (AC).

1   Introduction

1.1   Pursuant to paragraph 15(2) and (6) of Twentieth Schedule of the ANRM, aircraft operator, shipper, freight forwarder and security service provider shall ensure that personnel identified in the ICAO Technical Instructions must be trained or training must be verified prior to the person performing any duty in accordance with the ICAO Technical Instructions. An operator shall ensure that his handling agent's staff are trained in accordance with the applicable requirements above.

1.2   Pursuant to paragraph 15(1) of Twentieth Schedule of the ANRM, aircraft operator, whether or not approved to transport dangerous goods, shall establish and maintain a dangerous goods training programme that meets the requirements of ICAO Annex 18, the applicable requirements of the ICAO Technical Instructions and the provisions of the ANRM, as appropriate.

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Page 1 of 38

1.3   Pursuant to paragraph 178 (4) of the ANRM, a shipper and freight forwarder shall establish and maintain initial and recurrent dangerous goods training programmes that meet the requirements of ICAO Annex 18, the ICAO Technical Instructions and the provisions of the ANRM.

1.4   In accordance with the paragraph 5.12 of the AC/OPS/036, the ground handling agent holding the dangerous goods handling permit shall establish and maintain a dangerous goods training programme that meets the provisions of ICAO Annex 18, the ICAO Technical Instructions and the provisions cited in the ANRM and related Macao Aeronautical Circulars, as appropriate.

1.5   While the ICAO Technical Instructions requires the employer of personnel that perform functions aimed at ensuring that dangerous goods are transported in accordance with the Technical Instructions to establish and maintain a dangerous goods training programme, the employer must also ensure that personnel are competent to perform any function for which they are responsible prior to performing any of these functions. This must be achieved through training and assessment commensurate with the functions for which they are responsible.

1.6   This AC is issued to promulgate pertinent requirements and guidance with regard to the establishment of dangerous goods training programme and procedures for obtaining the acceptance / approval of the training programme from the AACM.

2   Applicability

This AC is applicable to:

(a) The aircraft operator whether or not approved for the carriage of dangerous goods by air;
(b) The shippers and freight forwarders consigning dangerous goods for carriage by air;
(c) The ground handling agent involved in the transport of cargo/mail, passengers and baggage by air.
(d) The security service provider responsible for the screening of passengers and crew and their baggage, cargo and mail.
(e) The training provider in Macao who intends to provide dangerous goods training and assessment for the above entities.

For the purpose of this AC, the term "Employer(s)" hereinafter represents the shippers, freight forwarders, aircraft operator, ground handling agent and security service provider respectively.

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Page 2 of 38

3   General Requirements

3.1   The employers shall conduct training needs analysis and ensure their personnel have completed the AACM accepted or approved dangerous goods training programmes that are appropriate to their functions, prior to carrying out relevant job functions and responsibilities. The dangerous goods training programmes shall be accepted or approved by the AACM according to paragraphs 4 and 5 of this AC.

Note: Guidance to assist in conducting training needs analysis are contained in Annex 1 to this AC.

3.2   The employers shall conduct their own dangerous goods training and assessment or utilize outsourced dangerous goods training and assessment offered by third party training providers. In both cases, employers shall ensure dangerous goods training programmes and associated instructors meet the latest requirements of ICAO Annex 18, the ICAO Technical Instructions, the provisions of the ANRM and the requirements in this AC.

3.3   The employers who utilize outsourced dangerous goods training and assessment offered by third party training providers shall ensure the training providers' dangerous goods training programmes are compatible with their results of the training needs analysis.

Notes:
- *The employers should communicate with the AACM in advance for the outsourced dangerous goods training and assessment arrangement.*
- *For the avoidance of doubt, if the role of an employee has changed such that previous training is no longer suitable for the new job functions and responsibilities, an initial training and assessment under the Competency-based Approach to Dangerous Goods Training and Assessment (CBTA) framework that commensurate with their new job functions and responsibilities have to be undertaken.*

3.4   The employers shall ensure their personnel have received recurrent dangerous goods training and assessment within 24 months of previous training and assessment to ensure that competency has been maintained.

Note: If recurrent training and assessment is completed within the final three months of validity of the previous training and assessment, the period of validity may extend from the month on which the recurrent training and assessment was completed until 24 months from the expiry month of that previous training and assessment.

3.5   The employers shall maintain all records of dangerous goods training and assessment for their personnel for a minimum period of 36 months from the most recent training and assessment completion month and shall be made available to the AACM upon request.

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Page 3 of 38

Note: Example of a training and assessment record are contained in Appendix 5 to this AC.

3.6   The dangerous goods training provider in Macao shall ensure its dangerous goods training programmes are accepted by the AACM according to paragraphs 4 and 5 of this AC.

3.7   The dangerous goods training provider in Macao shall ensure its dangerous goods training programmes and associated instructors meet the latest requirements of ICAO Annex 18, the ICAO Technical Instructions, the provisions of the ANRM and the requirements in this AC.

3.8   The dangerous goods training provider in Macao shall maintain all records of dangerous goods training and assessment they issued for a minimum period of 36 months and shall be made available to the AACM upon request.

3.9   The dangerous goods training provider in Macao shall submit training report in prescribed format to the AACM every 6 months.

   Note: Example of a biannual training report is contained in Appendix 6 to this AC.

4   Dangerous Goods Training Programme

4.1   Dangerous goods training programmes of aircraft operator and security service provider shall be approved by the AACM, while dangerous goods training programmes of ground handling agent, shippers, freight forwarders, and dangerous goods training provider in Macao shall be accepted by the AACM. All aforementioned dangerous goods training programmes shall be subject to inspections by the AACM.

4.2   The employers and dangerous goods training provider shall make such amendments or additions to the dangerous goods training programmes as well as to incorporate any such mandatory material as the AACM may require for the purpose of ensuring safety.

4.3   Dangerous goods training programmes shall include elements such as initial and recurrent training and assessment, instructor qualifications and competencies, training records and evaluation of the effectiveness of training.

   Note: Guidance on establishment of dangerous goods training programme is contained in Annex 1 of this AC.

4.4   The instructors of dangerous goods training programmes shall be competent in instruction and the functions they will instruct prior to delivering any dangerous goods training programme.

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Page 4 of 38

4.5 To maintain instructor eligibility, the instructors delivering dangerous goods training shall deliver such courses at least every 24 months, or in the absence of this, attend recurrent training.

5.   Application for Dangerous Goods Training Programme Approval/Acceptance

5.1   For Aircraft Operator and Security Service Provider

5.1.1 The employers shall submit an application for dangerous goods training programme approval with prescribed form and supporting documents required therein to the AACM at least 30 working days prior to the start date of dangerous goods training.

5.1.2 The dangerous goods training programme shall be documented in the employer's operations manual. If the employer utilizes outsourced dangerous goods training and assessment offered by third party training providers, the training programme shall contain at least the name(s) of third party training provider(s), training syllabus and administration of training and assessment records.

5.2   For Ground Handling Agent

5.2.1 The employers shall submit an application for dangerous goods training programme acceptance with prescribed form and supporting documents required therein to the AACM at least 30 working days prior to the start date of dangerous goods training.

5.2.2 The dangerous goods training programme shall be documented in the employer's operations manual. If the employer utilizes outsourced dangerous goods training and assessment offered by third party training providers, the training programme shall contain at least the name(s) of third party training provider(s), training syllabus and administration of training and assessment records.

5.3   For Shipper and Freight Forwarder

5.3.1 The employers who establish and maintain their own dangerous goods training programme for their personnel shall submit an application for dangerous goods training programme acceptance with prescribed form and supporting documents required therein to the AACM at least 30 working days prior to the start date of dangerous goods training.

5.3.2 Upon satisfactory result obtained from the technical evaluation, a letter of acceptance for the dangerous goods training programme will be issued by the AACM for a period not exceeding two years.

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Page 5 of 38

5.3.3 An application for the renewal of dangerous goods training programme acceptance shall be submitted to the AACM, with prescribed form and supporting documents required therein, at least 30 working days prior to the expiry date of current acceptance.

5.3.4 If the employers utilize outsourced dangerous goods training and assessment offered by third party training provider, the employers shall file a notification to the AACM with prescribed form and supporting documents required therein for the acceptance to utilize an accepted dangerous goods training programme.

5.3.5 The notification with required documents mentioned in 5.3.4 shall be filed to the AACM at an interval of not more than every 24 months, and whenever there is a change in the notified training arrangements (such as change of accepted training provider).

5.4   For Dangerous Goods Training Provider

5.4.1 Dangerous goods training provider in Macao shall submit an application for dangerous goods training programme acceptance with prescribed form and supporting documents required therein to the AACM at least 30 working days prior to the start date of dangerous goods training.

5.4.2 Upon satisfactory result obtained from the technical evaluation, a certificate for the dangerous goods training programme acceptance will be issued by the AACM for a period not exceeding two years.

5.4.3 An application for the renewal of dangerous goods training programme acceptance shall be submitted to the AACM, with prescribed form and supporting documents required therein, at least 30 working days prior to the expiry date of current acceptance.

Note: Aforementioned application and notification forms are available on the AACM website at www.aacm.gov.mo

6   Transitional Arrangement

6.1   In order to enable smooth transition of dangerous goods training and assessment from categorization approach to competency-based approach, employers shall adopt the competency-based approach to dangerous goods training and assessment in accordance with this AC and shall submit the revised dangerous goods training programmes to the AACM for acceptance and approval on or before 1 January 2026.

6.2   The employers shall ensure their personnel have completed the AACM accepted or approved competency-based approach dangerous goods training programmes from 1 January 2026.

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Page 6 of 38

Note: The employers are encouraged to carry out the accepted or approved competency-based approach dangerous goods training and assessment to their personnel as early as possible on or before 1 January 2026.

As a transitional arrangement, dangerous goods training and assessment completed and certificates that are issued before 1 January 2026 and have a validity period beyond 1 January 2026 will continue to be valid until they expire.

- END -

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Page 7 of 38

Annex 1 - Guidance on establishment of dangerous goods training programme

1. According to the current edition of the Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI) published by the International Civil Aviation Organization (ICAO), dangerous goods (DG) training requirements for personnel of shippers, freight forwarders, aircraft operators, etc. have been revised from the categorization approach to a competency-based approach.

2. The ensuing paragraphs contain information to assist applicants in adopting a competency-based approach to DG training and assessment (CBTA) in their DG training programmes intended for consideration and approval/acceptance by the AACM. This guidance information is adapted from the ICAO Document – Guidance on a Competency-based Approach to Dangerous Goods Training and Assessment (ICAO Doc 10147).

3. This guidance will go into the details of the preparation, design and development of CBTA (i.e. mainly workflows/phases 1-3 from ICAO Doc 10147) and will involve technical details relevant to the training provisions set out in the ICAO TI. It is therefore intended to be read by qualified DG training instructors who will establish and maintain a DG training programme by themselves or on behalf of their employers.

4. A training programme includes elements such as initial and recurrent training and assessment, instructor qualifications and competencies, training and assessment records and evaluation of its effectiveness.

5. According to ICAO Doc 10147 or the Dangerous Goods Regulations (DGR) published by the International Air Transport Association (IATA), the establishment of a DG training programme can be divided into five workflows, or phases, namely:

    (i)   Analyse training need;
    (ii)   Design local competency-based training;
    (iii)   Develop the training and assessment materials;
    (iv)   Implement – conduct the course; and
    (v)   Evaluate the course.

6. A competency is a dimension of human performance that is used to reliably predict successful performance on the job. It is manifested and observed through behaviours that mobilize/make use of the relevant knowledge, skills and attitudes to carry out activities or tasks under specified conditions.

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Page 8 of 38

> ➢ **Workflow/Phase 1 – Analysing Training Needs**

7. Before a training programme is developed, the training needs of the intended trainees have to be analysed. This is generally applicable to the organizer of a DG training programme, be it the employers or as a third party training provider.

8. The AACM has adapted the well-defined roles in the aviation industry with reference to ICAO Doc 10147 who typically perform the seven categories of tasks in paragraph 9, and thus have a role to play in the transport of cargo, passengers and baggage by air:

Shippers and staff members of freight forwarders

a) Personnel responsible for preparation of DG consignments;
b) Personnel responsible for processing or accepting goods presented as general cargo;
c) Personnel responsible for processing or accepting DG consignments;
d) Personnel responsible for handling cargo in a warehouse, and loading and unloading unit load devices;

Staff members of aircraft operators, ground handling agents and security agents

e) Personnel responsible for processing or accepting goods presented as general cargo;
f) Personnel responsible for processing or accepting DG consignments;
g) Personnel responsible for handling cargo in a warehouse, loading and unloading unit load devices and loading and unloading aircraft cargo compartments;
h) Personnel responsible for accepting passenger and crew baggage, managing aircraft boarding areas and other tasks involving direct passenger contact at an airport;
i) Personnel responsible for the planning of aircraft loading;
j) Flight crew;
k) Flight operations officers and flight dispatchers;
l) Cabin crew; and
m) Personnel responsible for the screening of passengers and crew and their baggage, cargo and mail.

9. A list of tasks typically performed by personnel in the air cargo supply chain as well as aircraft operators has been compiled by ICAO. The tasks are divided into seven broad categories, which are further broken down into smaller sub tasks:

   1. Classifying DG;
   2. Preparing DG shipment;
   3. Processing/accepting cargo;
   4. Managing cargo pre-loading;
   5. Accepting passenger and crew baggage;
   6. Transporting cargo/baggage; and
   7. Collecting safety data.

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Page 9 of 38

10. In this workflow/phase, a review should be conducted on the roles and responsibilities of the intended trainees, upon which the tasks involving the transport of cargo, passengers and baggage by air are identified. A sample template to assist employers in formulating training needs analysis for their employees can be found in Appendix 4.

> • ***Expected documents to be submitted:***
>
> - Brief description of the type of personnel to be trained, and the list of relevant tasks intended to be addressed by the DG training programme.
>
> *Note: For AACM assessment purpose, this item can be combined into a summary of design output of the expected documents to be submitted from Workflow/Phase 2*

➢ **Workflow/Phase 2 – Designing and Planning for the training programme**

11. The second workflow/phase in the CBTA framework is the design and plan, by taking into account the training needs analysis from Workflow/Phase 1.

12. The intended outcome from this workflow/phase will produce the components of a competency based training and assessment, which include:

a) Establishing a competency model that addresses the list of tasks identified in Workflow/Phase 1;
b) Designing an assessment plan that will be used to assess the competence of trainees; and
c) Designing a training plan that will enable the development and delivery of the training course.

Adapting a competency model

13. A competency model for a role may vary depending on the needs and operating environment of an organization, and should include the following elements:

a) The list of competencies/capabilities required for the role

   i) The list of competencies/capabilities may be developed using the task list that was identified from Workflow/Phase 1. For example, a competency may be defined as demonstrating the ability to perform one of the tasks under the seven broad categories of tasks identified.

b) Performance criteria for assessing each competency/capability

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Page 10 of 38

    i)   Each competency/capability is associated with a list of observable behaviours, and each observable behavior is measured against a competency standard, which may be similar to Key Performance Indicators.

    ii)   Successfully meeting the defined standards for the list of observable behaviours will contribute to achieving a competency/capability.

    iii)   An example of an observable behavior may require a candidate to successfully perform a smaller sub-task within a group of tasks.

14. With reference to ICAO Doc 10147 and Dangerous Goods Regulations (DGR) published by the International Air Transport Association (IATA), the AACM has adapted a table (Appendix 1) that maps the tasks typically performed by the well-defined roles. An example of an adapted competency model is demonstrated in Appendix 2.

Designing an assessment plan

15. A trainee's assessment may be completed using a variety of tools including observation of job performance, tests, or other practical exercises. Assessment tools must be valid and reliable in terms of being an appropriate measure of the competency/capability being assessed and of obtaining consistent results when administered by different assessors.

16. Details of an assessment plan may include:

a) The list of assessments required for each of the competencies/capabilities defined;
b) When assessments should take place;
c) The tools to be used to collect evidence during practical assessment (where applicable);
d) The pass marks for projects, examinations, or oral assessments; and
e) The number of observations required to assess performance for the competency standards

Designing a training plan

17. The training plan will be used by the training designers to create the training and assessment materials. The list of tasks from Workflow/Phase 1 should be referred when preparing the training plan.

18. The purpose of the training plan is to detail:

a) The composition and structure of the course;
b) Modules, training events and their delivery format and sequence;
c) Syllabus;
d) Milestones (if required); and
e) Course schedule.

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Page 11 of 38

- *Expected documents to be submitted:*

  - A summary of design output (for AACM assessment purpose) i.e. List of tasks to be addressed, and for each task make reference to the corresponding parts of training and assessment materials (See Appendix 3 for example templates), and

  - Training course outline (e.g. delivery format, tools to be used, assessment methods and duration).

➢ **Workflow/Phase 3 – Developing the training and assessment materials**

19. Development of training and assessment materials is based on the resulting adapted competency model and the assessment and training plans from Workflow/Phase 2. It is important to validate development against the analysis and design workflows/phases and it must suitably address the list of tasks identified from the training needs analysis.

20. Examples of such materials may include training notes, exercise briefings, practical exercises, case studies, presentations, video clips, self-test quizzes, examinations, assessments and assessment tools.

- *Expected documents to be submitted:*

  - Training materials (e.g. presentations, exercises, photos of training tools (where applicable)), and

  - Assessment materials (e.g. quizzes, examinations, illustration/description of how assessment tools are used) with answers where applicable.

Course evaluation

21. It is important that CBTA incorporates a mechanism to enable feedback so that the organizers of the training can ensure their programmes remain effective and relevant to the competencies intended to be achieved. At a minimum, a source of feedback should come from the trainees at the end of the course, and should include questions seeking feedback on the suitability of the course to the training needs of their job functions.

- *Expected documents to be submitted:*

  - Course evaluation form

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Page 12 of 38

Training and assessment records (Certificates)

22. In accordance with ICAO TI, the record of training and assessment must include:
    a) The name of the trainee;
    b) The month of completion of the training and assessment;
    c) A description, a copy or reference to training and assessment materials used to meet the training and assessment requirements;
    d) The name and address of the organization providing the training and assessment; and
    e) Evidence which shows that the personnel have been assessed as competent.

23. In this connection, when a sample certificate is submitted by the applicant, it is recommended that the description of the DG training programme for the applicable type of personnel is clearly stated on the certificate and in a way that is easy to reference. This is especially significant for practical implications when a DG training programme has been designed to meet the needs of more than one type of personnel.

- *Expected documents to be submitted:*

  - Sample certificate (training and assessment records) (See Appendix 7 for example template**)**

List of instructors and their qualifications

24. Pertinent requirement for DG instructors is laid down in paragraphs 4.4 and 4.5 of this AC.

- *Expected documents to be submitted:*

  - List of DG training instructor(s)

  - For each instructor
    ▪ Evidence that shows instructor's competence in instruction and the function(s) they will instruct,
    ▪ Record of delivering such DG training courses at least every 24 months, or in the absence of this, record of attending recurrent training.

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Page 13 of 38

Appendix 1: Adapted DG task list by well-defined roles

Tasks — Well-defined roles for the transport of DG by air with reference to ICAO TI / IATA DGR	Shipper	Freight forwarder			Aircraft operator and ground handling agent								Security agent
	a	b	c	d	e	f	g	h	i	j	k	l	m
0. General awareness and Safety training													
0.1 Understand the definition of DG, the scope and applicability for air transport in Macao	x	x	x	x	x	x	x	x	x	x	x	x	x
0.2 Understand the roles and responsibilities of stakeholders	x	x	x	x	x	x	x	x	x	x	x	x	x
0.3 Understand the basics of DG Classification, Labels, Marks, Packaging and Documentation	x	x	x	x	x	x	x	x	x	x	x	x	x
0.4 Understand the general limitations (including forbidden DG, potentially undeclared DG, and provisions concerning passengers and crew)	x	x	x	x	x	x	x	x	x	x	x	x	x
0.5 Safety training (including emergency response)	x	x	x	x	x	x	x	x	x	x	x	x	x
1. Classifying DG													
1.1 Evaluate substance or article against classification criteria													
1.1.1 Determine if it is dangerous goods	x												
1.1.2 Determine if it is forbidden under any circumstances	x												
1.2 Determine DG description													
1.2.1 Determine class or division	x												
1.2.2 Determine packing group	x												
1.2.3 Determine proper shipping name and UN number	x												
1.2.4 Determine if it is forbidden unless approval or exemption is granted	x												
1.3 Review special provisions													
1.3.1 Assess if special provision(s) is applicable	x												
1.3.2 Apply special provision(s)	x												
2. Preparing DG shipment													
2.1 Assess packing options including quantity limitations													
2.1.1 Consider limitations (de minimis quantities, excepted quantities, limited quantities, passenger aircraft, cargo aircraft only, special provisions, dangerous goods in the mail)	x												
2.1.2 Consider State and operator variations	x												
2.1.3 Determine if all-packed-in-one can be used	x												
2.1.4 Select how dangerous goods will be shipped based on limitations and variations	x												
2.2 Apply packing requirements													
2.2.1 Consider constraints of packing instructions	x												
2.2.2 Identify and follow the instructions provided by the packaging manufacturer when UN specification packaging is used	x												
2.2.3 Select appropriate packaging materials (absorbent, cushioning, etc.)	x												
2.2.4 Assemble package	x												
2.3 Apply marks and labels													
2.3.1 Determine applicable marks	x												
2.3.2 Apply marks	x												
2.3.3 Determine applicable labels	x												
2.3.4 Apply labels	x												
2.4 Assess use of overpack													
2.4.1 Determine if overpack can be used	x												
2.4.2 Apply marks if necessary	x												
2.4.3 Apply labels if necessary	x												
2.5 Prepare documentation													
2.5.1 Complete the dangerous goods transport document (DGD)	x												
2.5.2 Complete other transport documents (e.g. air waybill)	x												
2.5.3 Include other required documentation (approvals/exemptions, etc.)	x												
2.5.4 Retain copies of documents as required	x												

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Page 14 of 38

Tasks	Well-defined roles for the transport of DG by air with reference to ICAO TI / IATA DGR	Shipper	Freight forwarder			Aircraft operator and ground handling agent							Security agent
		a	b	c	d	e	f	g	h	i	j	k	l	m
3. Processing/accepting cargo														
3.1 Review documentation														
3.1.1 Verify dangerous goods transport document (DGD)				x			x							
3.1.2 Verify other transport documents (e.g. air waybill)				x			x							
3.1.3 Verify other documents (exemptions, approvals, etc.)				x			x							
3.1.4 Verify State/operator variations				x			x							
3.2 Review packaging, marks & labels														
3.2.1 Verify marks				x			x							
3.2.2 Verify labels				x			x							
3.2.3 Verify packaging type				x			x							
3.2.4 Verify package conditions				x			x							
3.2.5 Verify State/operator variations				x			x							
3.3 Complete acceptance procedures														
3.3.1 Complete acceptance checklist				x			x							
3.3.2 Provide shipment information for load planning				x			x							
3.3.3 Retain documents as required				x			x							
3.4 Process/accept cargo other than DG														
3.4.1 Check documentation for indications of undeclared dangerous goods			x			x								x
3.4.2 Check packages for indications of undeclared dangerous goods			x			x								x
4. Managing cargo pre-loading														
4.1 Plan loading														
4.1.1 Determine stowage requirements					x			x		x				
4.1.2 Determine segregation, separation, aircraft/compartment limitations					x			x		x				
4.2 Prepare load for aircraft														
4.2.1 Check packages for indications of undeclared dangerous goods					x			x						
4.2.2 Check for damage and/or leakage					x			x						
4.2.3 Apply stowage requirements (e.g. segregation, separation, orientation)					x			x						
4.2.4 Apply ULD tags when applicable					x			x						
4.3 Issue NOTOC														
4.3.1 Enter required information										x				
4.3.2 Verify conformance with load plan										x				
4.3.3 Transmit to loading personnel										x				
5. Accepting passenger and crew baggage														
5.1 Process baggage														
5.1.1 Identify forbidden dangerous goods								x						x
5.1.2 Apply approval requirements								x						x
5.2 Accept baggage														
5.2.1 Apply operator requirements								x					x	
5.2.2 Verify passenger baggage requirements								x					x	
5.2.3 Advise pilot-in-command								x						

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Page 15 of 38

Tasks	Well-defined roles for the transport of DG by air with reference to ICAO TI / IATA DGR	Shipper	Freight forwarder			Aircraft operator and ground handling agent								Security agent
		a	b	c	d	e	f	g	h	i	j	k	l	m
6. Transporting cargo/baggage														
6.1 Load aircraft								▨						
6.1.1 Transport cargo/baggage to aircraft								x						
6.1.2 Check packages for indications of undeclared dangerous goods								x						
6.1.3 Check for damage and/or leakage								x						
6.1.4 Apply stowage requirements (e.g. segregation, separation, orientation, securing and protecting from damage)								x						
6.1.5 Verify that NOTOC reflects against aircraft load								x						
6.2 Manage DG pre- and during flight											▨	▨	▨	
6.2.1 Detect presence of dangerous goods not permitted in baggage											x	x	x	
6.2.2 Interpret NOTOC											x	x		
6.2.3 Apply procedures in the event of an emergency											x	x	x	
6.2.4 Inform flight operations officer/flight dispatcher/air traffic control in the event of an emergency											x	x		
6.2.5 Inform emergency services of the dangerous goods on board in the event of an emergency											x	x		
6.3 Unload aircraft								▨						
6.3.1 Apply specific unloading considerations								x						
6.3.2 Check packages for indications of undeclared dangerous goods								x						
6.3.3 Check for damage and/or leakage								x						
6.3.4 Transport cargo/baggage to facility/terminal								x						
7. Collecting safety data														
7.1 Report DG accidents			x	x	x	x	x	x	x	x	x		x	x
7.2 Report DG incidents			x	x	x	x	x	x	x	x	x		x	x
7.3 Report undeclared/misdeclared DG			x	x	x	x	x	x	x	x	x		x	x
7.4 Report DG occurrences			x	x	x	x	x	x	x	x	x		x	

Legends

Cells marked with 'X' denote DG tasks relevant to the respective well-defined roles

Well-defined roles for the transport of DG by air with reference to ICAO TI / IATA DGR

Shippers and freight forwarders

a - Personnel responsible for preparation of DG consignments

b - Personnel responsible for processing or accepting goods presented as general cargo

c - Personnel responsible for processing or accepting DG consignments

d - Personnel responsible for handling cargo in a warehouse and loading and unloading unit load devices

Aircraft operators, ground handling agents and security agents

e - Personnel responsible for processing or accepting goods presented as general cargo

f - Personnel responsible for processing or accepting DG consignments

g - Personnel responsible for handling cargo in a warehouse, loading and unloading unit load devices and loading and unloading aircraft cargo compartments

h - Personnel responsible for accepting passenger and crew baggage, managing aircraft boarding areas and other tasks involving direct passenger contact at an airport

i - Personnel responsible for the planning of aircraft loading

j - Flight crew

k - Flight operations officers and flight dispatchers

l - Cabin crew

m - Personnel responsible for the screening of passengers and crew and their baggage, cargo and mail

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Page 16 of 38

Appendix 2: Example of an adapted competency model

Example of competency model adapted for **Personnel responsible for preparation of dangerous goods consignments**

Competency	Description	Performance criteria		
		Observable behavior (OB)	Competency assessment	
			Final competency standard	Conditions
C0: General awareness and safety training (including emergency response procedures)	Demonstrate understanding to the basics of dangerous goods procedures and emergency response procedures	OB1: Correctly understand the definition of dangerous goods, the scope and applicability for air transport in Macao	The level of performance to be achieved as defined by the training programme organizer, e.g. the pass mark for a specific part of assessment set at 80%	e.g. The training modules / topics that a trainee has to attend
		OB2: Correctly identify the roles and responsibilities of stakeholders		
		OB3: Ability to demonstrate basic understanding on dangerous goods Classification, the application of Labels, Marks, Packaging, and Documentation		
		OB4: Demonstrate understanding to general limitations (including forbidden DG, potentially undeclared DG, and provisions concerning passengers and crew)		
		OB5: Correctly identify appropriate emergency response in case of dangerous goods accident/incident		
C1: Evaluate substance or article against classification criteria	Demonstrate ability to correctly determine the classification of a particular substance or article	OB1: Correctly determine if it is dangerous goods		
		OB2: Correctly determine if it is forbidden under any circumstances		
C2: Determine DG description	Demonstrate ability to correctly determine the technical details of dangerous goods shipments	OB1: Correctly determine class or division		
		OB2: Correctly determine packing group		
		OB3: Correctly determine proper shipping name and UN number		
		OB4: Correctly determine if it is forbidden unless approval or exemption is granted		
C3: Review special provisions	Demonstrate ability to correctly determine the nature and applicability of special provisions	OB1: Correctly assess if special provision(s) is applicable		
		OB2: Correctly apply special provision(s)		
C4: Assess packing options including quantity limitations	Demonstrate ability to correctly evaluate the packing options of dangerous goods shipments	OB1: Correctly consider limitations (de minimis quantities, excepted quantities, limited quantities, passenger aircraft, cargo aircraft only, special provisions, dangerous goods in the mail)		
		OB2: Correctly include state and operator variations into consideration		
		OB3: Correctly determine if all-packed-in-one can be used		
		OB4: Correctly select how dangerous goods will be shipped based on limitations and variations		
C5: Apply packing requirements	Demonstrate ability to correctly comply with the packing requirements on dangerous goods shipments	OB1: Correctly include constraints of packing instructions into consideration		
		OB2: Correctly identify and follow the instructions provided by the packaging manufacturer when UN specification packaging is used		
		OB3: Correctly select appropriate packaging materials (absorbent, cushioning, etc.)		
		OB4: Correctly assemble package		
C6: Apply marks and labels	Demonstrate ability to correctly apply marks and labels on dangerous goods shipments	OB1: Correctly determine and apply applicable marks		
		OB2: Correctly determine and apply applicable labels		

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Page 17 of 38

Competency	Description	Performance criteria		
		Observable behavior (OB)	Competency assessment	
			Final competency standard	Conditions
C7: Assess use of overpack	Demonstrate ability to correctly evaluate the use of overpack on dangerous goods shipments	OB1: Correctly determine if overpack can be used	The level of performance to be achieved as defined by the training programme organizer, e.g. the pass mark for a specific part of assessment set at 80%	e.g. The training modules / topics that a trainee has to attend
		OB2: Correctly apply marks if necessary		
		OB3: Correctly apply labels if necessary		
C8: Prepare documentation	Demonstrate ability to correctly prepare documentations for dangerous goods shipments	OB1: Correctly complete the dangerous goods transport document (DGD)		
		OB2: Correctly complete other transport documents (e.g. air waybill)		
		OB3: Correctly include other required documentation (approvals/exemptions, etc.)		
		OB4: Understand and follow procedures for document retention		

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Page 18 of 38

Appendix 3: Summary of design Output

1. Template – Summary of design output for **(a) Personnel responsible for preparation of dangerous goods consignments**

Competency	Description	Summary of design output (for submission to AACM)		
		Observable behavior (OB)	Relevant parts of submitted materials	
			Assessment	Training
C0: General awareness and safety training (including emergency response procedures)	Demonstrate understanding to the basics of dangerous goods procedures and emergency response procedures	OB1: Correctly understand the definition of dangerous goods, the scope and applicability for air transport in Macao		
		OB2: Correctly identify the roles and responsibilities of stakeholders		
		OB3: Ability to demonstrate basic understanding on dangerous goods Classification, the application of Labels, Marks, Packaging, and Documentation		
		OB4: Demonstrate understanding to general limitations (including forbidden DG, potentially undeclared DG, and provisions concerning passengers and crew)		
		OB5: Correctly identify appropriate emergency response in case of dangerous goods accident/incident		
C1: Evaluate substance or article against classification criteria	Demonstrate ability to correctly determine the classification of a particular substance or article	OB1: Correctly determine if it is dangerous goods		
		OB2: Correctly determine if it is forbidden under any circumstances		
C2: Determine DG description	Demonstrate ability to correctly determine the technical details of dangerous goods shipments	OB1: Correctly determine class or division		
		OB2: Correctly determine packing group		
		OB3: Correctly determine proper shipping name and UN number		
		OB4: Correctly determine if it is forbidden unless approval or exemption is granted		
C3: Review special provisions	Demonstrate ability to correctly determine the nature and applicability of special provisions	OB1: Correctly assess if special provision is applicable		
		OB2: Correctly apply special provision(s)		
C4: Assess packing options including quantity limitations	Demonstrate ability to correctly evaluate the packing options of dangerous goods shipments	OB1: Correctly consider limitations (de minimis quantities, excepted quantities, limited quantities, passenger aircraft, cargo aircraft only, special provisions, dangerous goods in the mail)		
		OB2: Correctly include state and operator variations into consideration		
		OB3: Correctly determine if all-packed-in-one can be used		
		OB4: Correctly select how dangerous goods will be shipped based on limitations and variations		
C5: Apply packing requirements	Demonstrate ability to correctly comply with the packing requirements on dangerous goods shipments	OB1: Correctly include constraints of packing instructions into consideration		
		OB2: Correctly identify and follow the instructions provided by the packaging manufacturer when UN specification packaging is used		
		OB3: Correctly select appropriate packaging materials (absorbent, cushioning, etc.)		
		OB4: Correctly assemble package		

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Page 19 of 38

Competency	Description	Summary of design output (for submission to AACM)		
		Observable behavior (OB)	Relevant parts of submitted materials	
			Assessment	Training
C6: Apply marks and labels	Demonstrate ability to correctly apply marks and labels on dangerous goods shipments	OB1: Correctly determine and apply applicable marks		
		OB2: Correctly determine and apply applicable labels		
C7: Assess use of overpack	Demonstrate ability to correctly evaluate the use of overpack on dangerous goods shipments	OB1: Correctly determine if overpack can be used		
		OB2: Correctly apply marks if necessary		
		OB3: Correctly apply labels if necessary		
C8: Prepare documentation	Demonstrate ability to correctly prepare documentations for dangerous goods shipments	OB1: Correctly complete the dangerous goods transport document (DGD)		
		OB2: Correctly complete other transport documents (e.g. air waybill)		
		OB3: Correctly include other required documentation (approvals/exemptions, etc.)		
		OB4: Understand and follow procedures for document retention		

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Page 20 of 38

2. Template – Summary of design output for **(b & e) Personnel responsible for processing or accepting goods presented as general cargo**

Competency	Description	Summary of design output (for submission to AACM)		
		Observable behavior (OB)	Relevant parts of submitted materials	
			Assessment	Training
C0: General awareness and safety training (including emergency response procedures)	Demonstrate understanding to the basics of dangerous goods procedures and emergency response procedures	OB1: Correctly understand the definition of dangerous goods, the scope and applicability for air transport in Macao		
		OB2: Correctly identify the roles and responsibilities of stakeholders		
		OB3: Ability to demonstrate basic understanding on dangerous goods Classification, the application of Labels, Marks, Packaging, and Documentation		
		OB4: Demonstrate understanding to general limitations (including forbidden DG, potentially undeclared DG, and provisions concerning passengers and crew)		
		OB5: Correctly identify appropriate emergency response in case of dangerous goods accident/incident		
C1: Process/accept cargo other than DG	Demonstrate ability to correctly complete the processing and acceptance of general cargo shipments	OB1: Correctly check documentation for indications of undeclared dangerous goods		
		OB2: Correctly identify indications of undeclared dangerous goods from shipment package		
C2: Collect safety data	Demonstrate ability and correct attitude when dangerous goods accidents/ incidents/ occurrences are identified	OB1: Understand the differences between dangerous goods accidents / incidents / occurrences		
		OB2: Understand the correct emergency responses in case of dangerous goods accidents / incidents		
		OB3: Apply the correct reporting procedures when dangerous goods accidents / incidents occur and when undeclared/ misdeclared dangerous goods are discovered		

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Page 21 of 38

3. Template – Summary of design output for **(c & f) Personnel responsible for processing or accepting dangerous goods consignments**

Competency	Description	Summary of design output (for submission to AACM)		
		Observable behavior (OB)	Relevant parts of submitted materials	
			Assessment	Training
C0: General awareness and safety training (including emergency response procedures)	Demonstrate understanding to the basics of dangerous goods procedures and emergency response procedures	OB1: Correctly understand the definition of dangerous goods, the scope and applicability for air transport in Macao		
		OB2: Correctly identify the roles and responsibilities of stakeholders		
		OB3: Ability to demonstrate basic understanding on dangerous goods Classification, the application of Labels, Marks, Packaging, and Documentation		
		OB4: Demonstrate understanding to general limitations (including forbidden DG, potentially undeclared DG, and provisions concerning passengers and crew)		
		OB5: Correctly identify appropriate emergency response in case of dangerous goods accident/incident		
C1: Review documentation	Demonstrate ability to correctly verify documents for dangerous goods shipments	OB1: Correctly verify dangerous goods transport document (DGD)		
		OB2: Correctly verify other transport documents (e.g. air waybill)		
		OB3: Understand how to verify other documents such as exemptions, approvals, etc.		
		OB4: Correctly verify the applicable state/operator variations		
C2: Review packaging, marks & labels	Demonstrate ability to correctly verify packaging, marks and labels for dangerous goods shipments	OB1: Correctly identify and verify marks on shipment package		
		OB2: Correctly identify and verify labels on shipment package		
		OB3: Correctly verify the required type of packaging		
		OB4: Understand the process of verifying package conditions		
		OB5: Correctly verify the applicable state/operator variations		
C3: Complete acceptance procedure	Demonstrate ability to correctly apply procedures to complete dangerous goods acceptance	OB1: Correctly apply and complete dangerous goods acceptance checklist		
		OB2: Correctly prepare and provide shipment information for load planning		
		OB3: Understand and follow procedures for document retention		
C4: Collect safety data	Demonstrate ability and correct attitude when dangerous goods accidents/ incidents/ occurrences are identified	OB1: Understand the differences between dangerous goods accidents / incidents / occurrences		
		OB2: Understand the correct emergency responses in case of dangerous goods accidents / incidents		
		OB3: Apply the correct reporting procedures when dangerous goods accidents / incidents occur and when undeclared/ misdeclared dangerous goods are discovered		

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Page 22 of 38

4. Template – Summary of design output for **(d) Personnel responsible for handling cargo in a warehouse and loading and unloading unit load devices**

Competency	Description	Summary of design output (for submission to AACM)		
		Observable behavior (OB)	Relevant parts of submitted materials	
			Assessment	Training
C0: General awareness and safety training (including emergency response procedures)	Demonstrate understanding to the basics of dangerous goods procedures and emergency response procedures	OB1: Correctly understand the definition of dangerous goods, the scope and applicability for air transport in Macao		
		OB2: Correctly identify the roles and responsibilities of stakeholders		
		OB3: Ability to demonstrate basic understanding on dangerous goods Classification, the application of Labels, Marks, Packaging, and Documentation		
		OB4: Demonstrate understanding to general limitations (including forbidden DG, potentially undeclared DG, and provisions concerning passengers and crew)		
		OB5: Correctly identify appropriate emergency response in case of dangerous goods accident/incident		
C1: Plan loading	Demonstrate ability in planning the loading of cargo shipments in accordance with the requirements	OB1: Correctly determine stowage requirements		
		OB2: Correctly determine segregation, separation, aircraft/compartment limitations		
C2: Prepare load for aircraft	Demonstrate ability to correctly prepare cargo shipments to be loaded on an aircraft	OB1: Correctly check packages for indications of undeclared dangerous goods		
		OB2: Understand the requirement to check for damage and/or leakage		
		OB3: Correctly apply stowage requirements (e.g. segregation, separation, orientation)		
		OB4: Correctly apply ULD tags when applicable		
C3: Collect safety data	Demonstrate ability and correct attitude when dangerous goods accidents/ incidents/ occurrences are identified	OB1: Understand the differences between dangerous goods accidents / incidents / occurrences		
		OB2: Understand the correct emergency responses in case of dangerous goods accidents / incidents		
		OB3: Apply the correct reporting procedures when dangerous goods accidents / incidents occur and when undeclared/ misdeclared dangerous goods are discovered		

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Page 23 of 38

5. Template – Summary of design output for **(g) Personnel responsible for handling cargo in a warehouse, loading and unloading unit load devices and loading and unloading aircraft cargo compartments**

Competency	Description	Summary of design output (for submission to AACM)		
		Observable behavior (OB)	Relevant parts of submitted materials	
			Assessment	Training
C0: General awareness and safety training (including emergency response procedures)	Demonstrate understanding to the basics of dangerous goods procedures and emergency response procedures	OB1: Correctly understand the definition of dangerous goods, the scope and applicability for air transport in Macao		
		OB2: Correctly identify the roles and responsibilities of stakeholders		
		OB3: Ability to demonstrate basic understanding on dangerous goods Classification, the application of Labels, Marks, Packaging, and Documentation		
		OB4: Demonstrate understanding to general limitations (including forbidden DG, potentially undeclared DG, and provisions concerning passengers and crew)		
		OB5: Correctly identify appropriate emergency response in case of dangerous goods accident/incident		
C1: Plan loading	Demonstrate ability in planning the loading of cargo shipments in accordance with the requirements	OB1: Correctly determine stowage requirements		
		OB2: Correctly determine segregation, separation, aircraft/compartment limitations		
C2: Prepare load for aircraft	Demonstrate ability to correctly prepare cargo shipments to be loaded on an aircraft	OB1: Correctly check packages for indications of undeclared dangerous goods		
		OB2: Understand the requirements to check for damage and/or leakage		
		OB3: Correctly apply stowage requirements (e.g. segregation, separation, orientation)		
		OB4: Correctly apply ULD tags when applicable		
C3: Load aircraft	Demonstrate ability to correctly load cargo shipments on an aircraft	OB1: Understand how cargo/baggage should be transported to aircraft		
		OB2: Correctly check packages for indications of undeclared dangerous goods		
		OB3: Correctly check for damage and/or leakage before loading into aircraft		
		OB4: Correctly apply and verify stowage requirements (e.g. segregation, separation, orientation, securing and protecting from damage)		
		OB5: Correctly verify that NOTOC reflects against DG loaded		
C4 Unload aircraft	Demonstrate ability to correctly unload cargo shipments from an aircraft	OB1: Correctly apply specific unloading considerations		
		OB2: Correctly check packages for indications of undeclared dangerous goods		
		OB3: Correctly check for damage and/or leakage upon unloading from aircraft		
		OB4: Understand how cargo/baggage is transported from aircraft to facility/terminal		
C5: Collect safety data	Demonstrate ability and correct attitude when dangerous goods accidents/ incidents/ occurrences are identified	OB1: Understand the differences between dangerous goods accidents / incidents / occurrences		
		OB2: Understand the correct emergency responses in case of dangerous goods accidents / incidents		
		OB3: Apply the correct reporting procedures when dangerous goods accidents / incidents occur, undeclared/ misdeclared dangerous goods are discovered and other dangerous goods occurrences are identified		

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Page 24 of 38

6. Template – Summary of design output for **(h) Personnel responsible for accepting passenger and crew baggage, managing aircraft boarding areas and other tasks involving direct passenger contact at an airport**

Competency	Description	Summary of design output (for submission to AACM)		
		Observable behavior (OB)	Relevant parts of submitted materials	
			Assessment	Training
C0: General awareness and safety training (including emergency response procedures)	Demonstrate understanding to the basics of dangerous goods procedures and emergency response procedures	OB1: Correctly understand the definition of dangerous goods, the scope and applicability for air transport in Macao		
		OB2: Correctly identify the roles and responsibilities of stakeholders		
		OB3: Ability to demonstrate basic understanding on dangerous goods Classification, the application of Labels, Marks, Packaging, and Documentation		
		OB4: Demonstrate understanding to general limitations (including forbidden DG, potentially undeclared DG, and provisions concerning passengers and crew)		
		OB5: Correctly identify appropriate emergency response in case of dangerous goods accident/incident		
C1: Process baggage	Demonstrate ability in the identification of forbidden dangerous goods and the application of approval requirements in baggage processing	OB1: Correctly identify forbidden dangerous goods		
		OB2: Correctly apply approval requirements		
C2: Accept baggage	Demonstrate ability to correctly accept baggage	OB1: Correctly apply operator requirements		
		OB2: Correctly verify passenger baggage requirements		
		OB3: Understand the information to be communicated to pilot-in-command		
C3: Collect safety data	Demonstrate ability and correct attitude when dangerous goods accidents/ incidents/ occurrences are identified	OB1: Understand the differences between dangerous goods accidents / incidents / occurrences		
		OB2: Understand the correct emergency responses in case of dangerous goods accidents / incidents		
		OB3: Apply the correct reporting procedures when dangerous goods accidents / incidents occur, undeclared/ misdeclared dangerous goods are discovered and other dangerous goods occurrences are identified		

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Page 25 of 38

7. Template – Summary of design output for **(i) Personnel responsible for the planning of aircraft loading**

Competency	Description	Summary of design output (for submission to AACM)		
		Observable behavior (OB)	**Relevant parts of submitted materials**	
			Assessment	**Training**
C0: General awareness and safety training (including emergency response procedures)	Demonstrate understanding to the basics of dangerous goods procedures and emergency response procedures	OB1: Correctly understand the definition of dangerous goods, the scope and applicability for air transport in Macao		
		OB2: Correctly identify the roles and responsibilities of stakeholders		
		OB3: Ability to demonstrate basic understanding on dangerous goods Classification, the application of Labels, Marks, Packaging, and Documentation		
		OB4: Demonstrate understanding to general limitations (including forbidden DG, potentially undeclared DG, and provisions concerning passengers and crew)		
		OB5: Correctly identify appropriate emergency response in case of dangerous goods accident/incident		
C1: Plan loading	Demonstrate ability in planning the loading of cargo shipments in accordance with the requirements	OB1: Correctly determine stowage requirements		
		OB2: Correctly determine segregation, separation, aircraft /compartment limitations		
C2: Issue NOTOC	Demonstrate ability to correctly complete the filing of NOTOC and transmit it to loading personnel	OB1: Correctly enter required information		
		OB2: Correctly verify conformance with load plan		
		OB3: Correctly transmit to loading personnel		
C3: Collect safety data	Demonstrate ability and correct attitude when dangerous goods accidents/ incidents/ occurrences are identified	OB1: Understand the differences between dangerous goods accidents / incidents / occurrences		
		OB2: Understand the correct emergency responses in case of dangerous goods accidents / incidents		
		OB3: Apply the correct reporting procedures when dangerous goods accidents / incidents occur, undeclared/ misdeclared dangerous goods are discovered and other dangerous goods occurrences are identified		

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Page 26 of 38

8. Template – Summary of design output for **(j) Flight crew**

Competency	Description	Summary of design output (for submission to AACM)		
		Observable behavior (OB)	Relevant parts of submitted materials	
			Assessment	Training
C0: General awareness and safety training (including emergency response procedures)	Demonstrate understanding to the basics of dangerous goods procedures and emergency response procedures	OB1: Correctly understand the definition of dangerous goods, the scope and applicability for air transport in Macao		
		OB2: Correctly identify the roles and responsibilities of stakeholders		
		OB3: Ability to demonstrate basic understanding on dangerous goods Classification, the application of Labels, Marks, Packaging, and Documentation		
		OB4: Demonstrate understanding to general limitations (including forbidden DG, potentially undeclared DG, and provisions concerning passengers and crew)		
		OB5: Correctly identify appropriate emergency response in case of dangerous goods accident/incident		
C1: Manage DG pre- and during flight	Demonstrate ability to correctly manage dangerous goods before and during flight, and apply appropriate procedures in emergency situations	OB1: Correctly detect presence of dangerous goods, which are not permitted in baggage		
		OB2: Correctly interpret NOTOC		
		OB3: Correctly apply procedures in the event of an emergency		
		OB4: Understand the information to be communicated to flight operations officer / flight dispatcher / air traffic control in the event of an emergency		
		OB5: Understand the information to be communicated to emergency services of the dangerous goods on board in the event of an emergency		
C2: Collect safety data	Demonstrate ability and correct attitude when dangerous goods accidents/ incidents/ occurrences are identified	OB1: Understand the differences between dangerous goods accidents / incidents / occurrences		
		OB2: Understand the correct emergency responses in case of dangerous goods accidents / incidents		
		OB3: Apply the correct reporting procedures when dangerous goods accidents / incidents occur, undeclared/ misdeclared dangerous goods are discovered and other dangerous goods occurrences are identified		

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Page 27 of 38

9. Template – Summary of design output for **(k) Flight operations officers and flight dispatchers**

Competency	Description	Summary of design output (for submission to AACM)		
		Observable behavior (OB)	Relevant parts of submitted materials	
			Assessment	Training
C0: General awareness and safety training (including emergency response procedures)	Demonstrate understanding to the basics of dangerous goods procedures and emergency response procedures	OB1: Correctly understand the definition of dangerous goods, the scope and applicability for air transport in Macao		
		OB2: Correctly identify the roles and responsibilities of stakeholders		
		OB3: Ability to demonstrate basic understanding on dangerous goods Classification, the application of Labels, Marks, Packaging, and Documentation		
		OB4: Demonstrate understanding to general limitations (including forbidden DG, potentially undeclared DG, and provisions concerning passengers and crew)		
		OB5: Correctly identify appropriate emergency response in case of dangerous goods accident/incident		
C1: Manage DG pre- and during flight	Demonstrate ability to correctly manage dangerous goods before and during flight, and apply appropriate procedures in emergency situations	OB1: Correctly detect presence of dangerous goods, which are not permitted in baggage		
		OB2: Correctly interpret NOTOC		
		OB3: Correctly apply procedures in the event of an emergency		
		OB4: Understand the information to be communicated to flight operations officer / flight dispatcher / air traffic control in the event of an emergency		
		OB5: Understand the information to be communicated to emergency services of the dangerous goods on board in the event of an emergency		

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Page 28 of 38

10. Template – Summary of design output for **(l) Cabin crew**

Competency	Description	Summary of design output (for submission to AACM)		
		Observable behavior (OB)	Relevant parts of submitted materials	
			Assessment	Training
C0: General awareness and safety training (including emergency response procedures)	Demonstrate understanding to the basics of dangerous goods procedures and emergency response procedures	OB1: Correctly understand the definition of dangerous goods, the scope and applicability for air transport in Macao		
		OB2: Correctly identify the roles and responsibilities of stakeholders		
		OB3: Ability to demonstrate basic understanding on dangerous goods Classification, the application of Labels, Marks, Packaging, and Documentation		
		OB4: Demonstrate understanding to general limitations (including forbidden DG, potentially undeclared DG, and provisions concerning passengers and crew)		
		OB5: Correctly identify appropriate emergency response in case of dangerous goods accident/incident		
C1: Accept baggage	Demonstrate ability to correctly accept baggage	OB1: Correctly apply operator requirements		
		OB2: Correctly verify passenger baggage requirements		
C2: Manage DG pre- and during flight	Demonstrate ability to correctly manage dangerous goods before and during flight, and apply appropriate procedures during emergency situations	OB1: Correctly detect presence of dangerous goods, which are not permitted in baggage		
		OB2: Correctly apply procedures in the event of an emergency		
C3: Collect safety data	Demonstrate ability and correct attitude when dangerous goods accidents/ incidents/ occurrences are identified	OB1: Understand the differences between dangerous goods accidents / incidents / occurrences		
		OB2: Understand the correct emergency responses in case of dangerous goods accidents / incidents		
		OB3: Apply the correct reporting procedures when dangerous goods accidents / incidents occur, undeclared/ misdeclared dangerous goods are discovered and other dangerous goods occurrences are identified		

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Page 29 of 38

11. Template – Summary of design output for **(m) Personnel responsible for the screening of passengers and crew and their baggage, cargo and mail**

Competency	Description	Summary of design output (for submission to AACM)		
		Observable behavior (OB)	Relevant parts of submitted materials	
			Assessment	Training
C0: General awareness and safety training (including emergency response procedures)	Demonstrate understanding to the basics of dangerous goods procedures and emergency response procedures	OB1: Correctly understand the definition of dangerous goods, the scope and applicability for air transport in Macao		
		OB2: Correctly identify the roles and responsibilities of stakeholders		
		OB3: Ability to demonstrate basic understanding on dangerous goods Classification, the application of Labels, Marks, Packaging, and Documentation		
		OB4: Demonstrate understanding to general limitations (including forbidden DG, potentially undeclared DG, and provisions concerning passengers and crew)		
		OB5: Correctly identify appropriate emergency response in case of dangerous goods accident/incident		
C1: Process / accept cargo other than dangerous goods	Demonstrate ability to identify hidden dangerous goods when screening cargo shipments	OB1: Correctly check documentation for indications of undeclared dangerous goods		
		OB2: Correctly identify indications of undeclared dangerous goods from shipment package		
C2: Process baggage	Demonstrate ability to identify forbidden dangerous goods when screening baggage	OB1: Correctly identify forbidden dangerous goods		
		OB2: Correctly apply approval requirements		
C3: Collect safety data	Demonstrate ability and correct attitude when dangerous goods accidents/ incidents/ occurrences are identified	OB1: Understand the differences between dangerous goods accidents / incidents / occurrences		
		OB2: Understand the correct emergency responses in case of dangerous goods accidents / incidents		
		OB3: Apply the correct reporting procedures when dangerous goods accidents / incidents occur and when undeclared/ misdeclared dangerous goods are discovered		

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Page 30 of 38

Appendix 4A: **Dangerous Goods (DG) Training Needs Analysis Form for Staff Members of Shippers, Freight Forwarders**

Training Needs Analysis Record (Please fill in this part)

Notes:
1. Each employee may be responsible for a mixture of tasks or be responsible for more than one role (if applicable) shown in Table 1 on the next page.

2. Employers may substitute a training needs analysis record for each employee with an internal training policy manual (as appropriate), describing the training needs for certain job functions.

	Name of Employee	Role of Employee (see Table 1)		Name of Employee	Role of Employee (see Table 1)
1.	e.g. Chan Tai Man	c	11.		
2.	e.g. Wong Ka Man	b, d	12.		
3.			13.		
4.			14.		
5.			15.		
6.			16.		
7.			17.		
8.			18.		
9.			19.		
10.			20.		

Roles (see Table 1 for the Task List)

a ⸺ Personnel responsible for preparation of DG consignments

b ⸺ Personnel responsible for processing or accepting goods presented as general cargo

c ⸺ Personnel responsible for processing or accepting DG consignments

d ⸺ Personnel responsible for handling cargo in a warehouse and loading and unloading unit load devices

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Page 31 of 38

This table aims to assist employers in conducting Training Needs Analysis for employees. It is for reference only, not required to be filled.

Table 1

Training Needs Analysis Template (well-defined roles with reference to the International Civil Aviation Organization)

Select the most appropriate role(s) for each employee based on the task list below:

Tasks	Roles*			
	a	**b**	**c**	**d**
0. General awareness and safety training (including scope, applicability, limitations, recognition of undeclared DG and emergency response procedures, etc.)	Y	Y	Y	Y
1. Classifying dangerous goods				
1.1 Evaluate substance or article against classification criteria (check if it is DG, and whether forbidden under any circumstances)	Y	-	-	-
1.2 Determine DG description (determine class/division, packing group, UN number, etc.)	Y	-	-	-
1.3 Review special provisions	Y	-	-	-
2. Preparing dangerous goods shipments				
2.1 Assess packing options including quantity limitations (consider limitations, state and operator variations, etc.)	Y	-	-	-
2.2 Apply packing requirements (consider constraints of packing instructions, select appropriate packaging materials, etc.)	Y	-	-	-
2.3 Determine and apply marks and labels	Y	-	-	-
2.4 Assess use of overpacks	Y	-	-	-
2.5 Prepare documentation	Y	-	-	-
3. Processing/accepting cargo				
3.1 Review documentation(i.e. Shipper's Declaration for DG)	-	-	Y	-
3.2 Review packaging, marks & labels	-	-	Y	-
3.3 Conduct and complete DG acceptance procedures	-	-	Y	-
3.4 Process/accept cargo other than DG (check documentation and packages for indications of undeclared DG)	-	Y	-	-
4. Managing cargo pre-loading				
4.1 Plan loading DG cargo (determine segregation, separation, etc. requirements)	-	-	-	Y
4.2 Prepare DG cargo load for aircraft (check packages for indications of undeclared DG, check for damage/leakage, apply ULD tags when applicable, etc.)	-	-	-	Y
7. Collecting safety data (report DG accidents, incidents, undeclared/misdeclared DG & other occurrences)	-	Y	Y	Y

* Roles
a - Personnel responsible for preparation of DG consignments
b - Personnel responsible for processing or accepting goods presented as general cargo
c - Personnel responsible for processing or accepting DG consignments
d - Personnel responsible for handling cargo in a warehouse and loading and unloading unit load devices

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Page 32 of 38

Appendix 4B: Dangerous Goods (DG) Training Needs Analysis Form for Staff members of Aircraft operators, ground handling agents and security agents

Training Needs Analysis Record (Please fill in this part)

Notes:
1. Each employee may be responsible for a mixture of tasks or be responsible for more than one role (if applicable) shown in Table 1 on the next page.

2. Employers may substitute a training needs analysis record for each employee with an internal training policy manual (as appropriate), describing the training needs for certain job functions.

	Name of Employee	Role of Employee (see Table 1)		Name of Employee	Role of Employee (see Table 1)
1.	e.g. Chan Tai Man	e	11.		
2.	e.g. Wong Ka Man	f, g	12.		
3.			13.		
4.			14.		
5.			15.		
6.			16.		
7.			17.		
8.			18.		
9.			19.		
10.			20.		

Roles (see Table 1 for the Task List)

e - Personnel responsible for processing or accepting goods presented as general cargo

f - Personnel responsible for processing or accepting DG consignments

g - Personnel responsible for handling cargo in a warehouse, loading and unloading unit load devices and loading and unloading aircraft cargo compartments

h - Personnel responsible for accepting passenger and crew baggage, managing aircraft boarding areas and other tasks involving direct passenger contact at an airport

i - Personnel responsible for the planning of aircraft loading

j - Flight crew

k - Flight operations officers and flight dispatchers

l - Cabin crew

m - Personnel responsible for the screening of passengers and crew and their baggage, cargo and mail

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Page 33 of 38

This table aims to assist employers in conducting Training Needs Analysis for employees. It is for reference only, not required to be filled.

Table 1

Training Needs Analysis Template (well-defined roles with reference to the International Civil Aviation Organization)

Select the most appropriate role(s) for each employee based on the task list below：

Tasks	Roles*								
	e	f	g	h	i	j	k	l	m
0. General awareness and safety training (including scope, applicability, limitations, recognition of undeclared DG and emergency response procedures, etc.)	Y	Y	Y	Y	Y	Y	Y	Y	Y
3. Processing/accepting cargo									
3.1 Review documentation (i.e. Shipper's Declaration for DG)	-	Y	-	-	-	-	-	-	-
3.2 Review packaging, marks & labels	-	Y	-	-	-	-	-	-	-
3.3 Conduct and complete DG acceptance procedures	-	Y	-	-	-	-	-	-	-
3.4 Process/accept cargo other than DG (check documentation and packages for indications of undeclared DG)	Y	-	-	-	-	-	-	-	Y
4. Managing cargo pre-loading									
4.1 Plan loading DG cargo (determine segregation, separation, etc. requirements)	-	-	Y	-	Y	-	-	-	-
4.2 Prepare DG cargo load for aircraft (check packages for indications of undeclared DG, check for damage/leakage, apply ULD tags when applicable, etc.)	-	-	Y	-	-	-	-	-	-
4.3 Issue NOTOC	-	-	-	-	Y	-	-	-	-
5. Accepting passenger and crew baggage									
5.1 Process passenger or crew baggage (identify forbidden DG, etc.)	-	-	-	Y	-	-	-	-	Y
5.2 Accept passenger or crew baggage (verify passenger baggage requirements, notify pilot-in-command, etc.)	-	-	-	Y	-	-	-	Y	-
6. Transporting cargo/baggage									
6.1 Load aircraft (check for damage and/or leakage, apply segregation and separation requirements, etc.)	-	-	Y	-	-	-	-	-	-
6.2 Manage DG pre- and during flight (apply procedures in the event of an emergency)	-	-	-	-	-	Y	Y	Y	-
6.3 Unload aircraft (check for damage and/or leakage, etc.)	-	-	Y	-	-	-	-	-	-
7. Collecting safety data (report DG accidents, incidents, undeclared/misdeclared DG & other occurrences)	Y	Y	Y	Y	Y	Y	-	Y	Y

* Roles

e - Personnel responsible for processing or accepting goods presented as general cargo

f - Personnel responsible for processing or accepting DG consignments

g - Personnel responsible for handling cargo in a warehouse, loading and unloading unit load devices and loading and unloading aircraft cargo compartments

h - Personnel responsible for accepting passenger and crew baggage, managing aircraft boarding areas and other tasks involving direct passenger contact at an airport

i - Personnel responsible for the planning of aircraft loading

j - Flight crew

k - Flight operations officers and flight dispatchers

l - Cabin crew

m - Personnel responsible for the screening of passengers and crew and their baggage, cargo and mail

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Page 34 of 38

Appendix 5: <u>Dangerous Goods (DG) Training and Assessment Record</u>

| Section 1 | Training Record |

- Employers must ensure that employees are provided with DG training commensurate with their job functions and have been approved / accepted by the AACM, and they shall receive recurrent training every 24 months.

- Training and assessment record must be retained by the employer for each employee engaged in job functions relevant to the air transport cargo, passengers and baggage (including those responsible for identifying forbidden or undeclared dangerous goods, etc.) for a minimum period of 36 months.

- When third party training providers are engaged, employers shall retain a photocopy of the relevant DG training certificate(s) together with this record form.

- Employers may substitute this training and assessment record form with a different design in paper or electronic format. The form must contain at a minimum the information required in Section 2 below.

| Section 2 | Assessment Record |

	Name of Employee	Month/Year of completion (MM/YY)	Month/Year of expiry (MM/YY)[1]	Role(s) of employee[2]	Assessed by (company internal assessor or third party training provider) [3]
1.	e.g. Chan Tai Man	01/23	01/25	a	XXX Training Institute
2.	e.g. Wong Ka Man	02/23	02/25	b, d	1. XXX Training Institute 2. Company supervisor
3.					
4.					
5.					

Notes:

1. Recurrent DG training and assessment must be conducted within 24 months of the previous one to ensure the training is effective and employees are competent to perform their assigned job function.

2. Please refer to Table 1 in the relevant Dangerous Goods Training Needs Analysis Form template (Appendix 4), or the company's internal training policy manual.

3. Employers may delegate the conduct of employee assessments to a company internal assessor or third party training provider (or both), as applicable.

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Page 35 of 38

Appendix 6: <u>Report on Dangerous Goods Training Programme</u>

Instructions:

According to paragraph 3.9 of this AC, the dangerous goods training provider in Macao shall submit training report in prescribed format provided below to the AACM every 6 months. Please submit to the AACM via email flightstandards@aacm.gov.mo **by first week of January and July**.

The information provided in the report will be used for record and inspection purpose only.

1	DG training provider's particulars	
Name of organization (in full):		
Training venue:		
List of instructor(s):		

2. DG training programme conducted in the past 6 months						
Course start date	Course end date	Type of Training Programme	Description of the course conducted **(only fill in Roles a - m, or if others: full description)**	No. of students	Passing rate (%)	Instructor name
e.g. 1/10/2025	01/10/2025	e.g. Initial	e.g. Role b	10	100%	name
e.g. 2/10/2025	06/10/2025	e.g. Recurrent	e.g. Role a,c	10	100%	name

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Page 36 of 38

3.	Upcoming schedules of DG training programme for the next 6 months			
Course start date	Course end date	Type of Training Programme	Description of the course conducted **(only fill in Roles a - d, or if others: full description)**	Available capacity (No. of seats)
e.g. 02/10/2025	06/10/2025	e.g. Initial	e.g. Role a,c	10
e.g. 01/10/2025	01/10/2025	e.g. Recurrent	e.g. Role b	10

Well-defined roles for the transport of DG by air with reference to ICAO TI / IATA DGR

Shippers and freight forwarders

a - Personnel responsible for preparation of DG consignments
b - Personnel responsible for processing or accepting goods presented as general cargo
c - Personnel responsible for processing or accepting DG consignments
d - Personnel responsible for handling cargo in a warehouse and loading and unloading unit load devices

Aircraft operators, ground handling agents and security agents

e - Personnel responsible for processing or accepting goods presented as general cargo
f - Personnel responsible for processing or accepting DG consignments
g - Personnel responsible for handling cargo in a warehouse, loading and unloading unit load devices and loading and unloading aircraft cargo compartments
h - Personnel responsible for accepting passenger and crew baggage, managing aircraft boarding areas and other tasks involving direct passenger contact at an airport
i - Personnel responsible for the planning of aircraft loading
j - Flight crew
k - Flight operations officers and flight dispatchers
l - Cabin crew
m - Personnel responsible for the screening of passengers and crew and their baggage, cargo and mail

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Page 37 of 38

Appendix 7: <u>Dangerous Goods Training Certificate</u>

Training organization

This is to certify that

Chan Tai Man

has successfully completed

Dangerous Goods Training Course

for personnel responsible for
processing or accepting goods presented as general cargo

in the month of July 2025
(Expiring in July2027)

(Signed)

_____

Accountable person