

International Fire Aviation Working Group – Practice Guide

Cooperative Arrangements

CO 7.1 - International Deployment Procedures

This voluntary Practice Guide forms part of a series in the International Fire Aviation Guidelines.

1. Purpose

- 1.1. To provide guidance to countries, Fire Agencies and Aircraft Operators regarding planning for inter-jurisdictional deployment of aircraft resources and related support resources; and to provide recommended principles and procedures surrounding International Deployment in particular.

2. Application

- 2.1. Jurisdictions that may supply aircraft or related resources for deployment to another jurisdiction.
- 2.2. Jurisdictions that may host aircraft or related resources deployed from another jurisdiction.
- 2.3. Aircraft Operators who may provide aircraft under bi-lateral or multi-lateral resource sharing agreements.

3. Introduction

- 3.1. This Guide aims to establish a set of principles and recommended procedures surrounding the inter-jurisdictional deployment, and in particular International Deployment (ID), of aerial resources for firefighting.
- 3.2. These principles and procedures are recommendations only and their purpose is to provide guidance for the development of minimum standards and for good practice in ID.
- 3.3. The minimum standards or principles are intended as a base level of quality in ID procedures. Each country should aim to obtain, maintain and ultimately exceed the minimum standards. It is intended that the minimum standards will serve as models for generating policies and initiatives across countries for the effective implementation of ID procedures by each country's competent national or state authorities. It is hoped that each country will use the minimum standards to assist them in developing and implementing ID procedures.
- 3.4. The principles for International Deployment are divided into different phases, in chronological order:
 - Establishment of agreements

- Requesting international aerial resources
- Pre-alert of the aerial resources available
- Deployment of the resources
- Operations
- End of mission.

4. Establishment of Agreements

- 4.1. It is recommended that countries consider entering into bilateral or multilateral agreements with nearby countries, where all the aspects related to ID are negotiated and agreed prior to the deployment. The principles and recommended standards described in this Guide should be considered when preparing ID agreements.
- 4.2. Where practical, it is generally preferable to incorporate specific aspects regarding fire aviation into broader bi-lateral and multi-lateral agreements rather than have specific agreements for aviation resources. This is to help ensure that deployment of aviation resources is properly integrated with other related fire management or emergency management activities.
- 4.3. Overarching agreements should be reviewed and updated at least every five years.
- 4.4. Agreements should include Annual Operating Plans, reviewed and updated annually.
- 4.5. To administer and support multilateral agreements it may be useful for countries to develop an international or regional support mechanism, such as the European Community Mechanism for Civil Protection, where all information on the current wildfire situation can be made available and where monitoring of the ID can be undertaken.
- 4.6. A checklist to assist with the preparation of bilateral or multilateral agreements is provided in Practice Guide 7.2.

5. Requesting International Aerial Resources

- 5.1. The ID procedure commences with a formal request for aerial resources from a country (the host country) that is affected by fire and is having difficulty managing the fire with its own resources.
- 5.2. A request for resources from a host country can be made in either of two forms:
 - Firstly, a request can be made bilaterally - directly to the country providing the resources (the sending nation), using existing and established bilateral agreements.
 - Secondly a request can be made multilaterally, through established mechanisms. In this second form the international community involved in any collaboration mechanisms will determine the resources available.
- 5.3. It is recommended that countries consider developing standard request forms which incorporate the information required to support any request for resources.

5.4. Once a request has been made by a host country, the sending country or countries should analyse and determine the type and number of aerial resources and support resources (if support resources are requested) available for deployment. The parameters to be considered include:

5.5. Nature of the fire

- The objectives that are to be achieved by the aircraft are a most important consideration in determining the selection of resources for ID. The following information is useful in determining the most appropriate type of resource to be deployed:
- the work that the host country requires to be performed (for example: initial attack, asset protection, etc)
- the type of vegetation;
- population levels in the vicinity of the fire;
- housing and infrastructure in the vicinity of the fire
- infrastructure likely to be affected.

5.6. The current and anticipated fire situation in the sending country. This parameter is an important influence on the final decision as the resources sent on an ID will not be available in the sending country for the period of deployment and any subsequent period of maintenance.

a. The current and forecast weather in transit to and at the host country.

The current and forecast weather conditions will assist in determining the most appropriate resources to send to the host country and will also identify any limitations in the application of those resources.

If weather forecasts are favourable and will assist the host country in managing the fire risk then this will affect the viability of sending resources over long distances between countries.

b. Ferry distance

This parameter will determine the type of resources appropriate to be sent to the host country, particularly if there are significant distances between the host country and sending country.

For example, if the distances between the countries are great, then a rotary-wing aircraft may not be the best option due to the number of transit stops required for refuelling.

However, if the distances are relatively short and can be covered within a day or so, then the cost effectiveness and the number of available resources will be greater.

c. Orography in transit to the host country and on the fire ground.

The operational limitations and capabilities of the resources available need to be assessed against the orography of the host country and of the area that the resources will traversing as they transit between the sending country and the host country.

Orography is also an important consideration in terms of safety of the aircraft and its crew under the ID.

The operational success of the aerial resource, particularly in relation to the suppression results will also depend directly on the Density Altitude at which the aircraft is required to operate.

Density Altitude will significantly affect asset capability and will be an important factor in selecting the most appropriate type of aircraft to employ. Similarly the nature of the terrain in the area of the firefighting operation, and the ability of particular aircraft assets to operate safely and effectively in that terrain will be important factors.

d. Operating base to fire distance

The distance between the operating base (eg helibase or retardant/suppressant supply base or refueling base) and the fire itself will also influence the selection of the most appropriate type of aircraft to deploy.

e. Water/suppressant/retardant resources available.

The availability of suppressant or retardant supply facilities in the host country is also an important consideration in aircraft selection.

If water is to be used, close consideration will need to be given to the nature of the water supply and the suitability of different types of aircraft to utilise the supply.

If the host country has requested a specific type of resource, then it is assumed that the water sources available at the fire will be compatible with the characteristics of the resource.

If the type of resource requested is not specified, then the sending country will need to analyse the availability of compatible water sources when considering which resource to deploy.

f. Compatibility between aircraft asset and chemical.

Before making a decision on what type of resource will be sent on ID it is important to check that the fire suppressants and retardants to be used are compatible with the resource to be deployed.

g. Fuel supply

Fuel compatibility and availability in the host country and enroute must also be considered.

h. Language used at the fire.

This parameter will affect selection of the crew members of the aircraft. Normally, English should be the common language for all aerial operations at a fire.

i. Suitability

For a resource to be classified as suitable for an ID, the sending country (including any relevant agency of the sending country or the relevant Aircraft Operator) should be recognised as complying with the required Standards of the IFAWG Manual of Common Rules (IMCR).

6. Pre Alert

- 6.1. Once appropriate resources have been identified, the prealert phase consists of preparing for the deployment. The time required for this phase will depend on the internal procedures of the sending country and on the timely provision of the information from the host country.
- 6.2. The following information should be provided to the sending country by the host country:
 - a. The rules governing the utilisation of aerial resources in the host country.
 - b. A list of relevant airports to allow for navigational databases and approach charts to be updated at the commencement of operations.
 - c. Flight and duty time limitations in use in the host country in order to arrange working shifts. The flight and duty time limitations in use will normally be those operating in the host country. Where there are significant differences between flight and duty time limitations between the host country and the sending country or the Aircraft Operator's limitations, an agreed resolution must be documented in the ID Agreement.
 - d. Details of all logistics including: the presence of liaison officers at any necessary transit stops, operating bases and at the fire; and details of any accommodation at transit stops, operating bases and at the fire.
 - e. Details of fuel availability, to ensure that the fuel used by the selected resource is compatible with the fuel available at any necessary transit stops and at the fire.
 - f. Details of retardant/suppressant chemical type and availability: to ensure that the selected resource is able to use that type of chemical and to allow the host country to consider the best type of suppression to be used at the fire.
 - g. Area of operations data: so that the crew of the deployed resource can study obstacles, water sources and prepare a first operational risk evaluation.
 - h. In order to plan for the deployment, the hosted country of the selected resource will also require information, including but not limited to:
 - navigation charts;
 - meteorology;
 - aviation restrictions; and
 - length of transit flights.

7. Deployment

- 7.1. The logistics arrangements for the deployment will remain the responsibility of the sending country, unless or until otherwise specifically agreed.
- 7.2. The host country will collaborate with the sending country in relation to the issuing of diplomatic clearances and visas for all crew of the aircraft.
- 7.3. The sending country will be responsible for each aircraft having on board copies of the Air Aircraft Operators Certificates (AOC) and any other documentation that may be required for transit of other countries.

- 7.4. Whenever there is a transit stop scheduled, the aircraft crew will inform the relevant government/agency/organisation of the sending country of their location so as to allow for the transmission of any relevant information or updates regarding the deployment.
- 7.5. It is recommended that each host country develop a Welcome Guide for hosted crews. The information in the Welcome Guide will include, but not be limited to details such as:
- a. description of the national civil protection system and organisations;
 - b. the firefighting system (eg details of the entities with responsibilities for the fire; the command chain for fire operations; the information command chain; general firefighting strategies);
 - c. the operation of aerial resources in firefighting (dispatch and engagement procedures; aeronautical frequencies; call signs; availability of water/retardant/suppressant/scooping points; safety and coordination procedures; specific procedures for management of scooping operations etc);
- list of airbases available;
 - list of relevant contacts (institutions and individuals);
 - other useful information (national emergency number; national meteorological information).

8. Operations

- 8.1. To ensure greater effectiveness, it is normally preferable for resources to be utilised in fires where ground resources are also working.
- 8.2. On the first day of operations the host country will conduct a briefing with the hosted aircraft crews to explain particulars of the operation, including but not limited to:
- national rules and procedures for aerial firefighting;
 - operational peculiarities of specific airports;
 - low level obstacles (relevant to navigation, drops and scooping);
 - communications at the fire – details as to the communication plan for aerial resources and the communication plan between aerial resources and ground operations;
 - dispatch procedures including illustrations of typical flight orders;
 - water points for filling, eg. dip points, scooping points and areas;
 - fuel availability;
 - national rules for the use of chemicals, including procedures for emergency chemical drops.
- 8.3. On a daily basis the aircraft crews will receive a briefing on the current fire situation and the flight orders from the relevant host country government/agency/organisation.
- 8.4. Tasks should be communicated to the aircraft crew through written orders, such as a flight order. The flight order is a written document which will be delivered to crews through a liaison officer. A copy of the flight orders is to be retained by each

party for at least six months. A suggested standard format for a flight order is provided at Practice Guide.

- 8.5. After each flight the crew will complete a post flight written report. A copy of each post flight report will be retained by each party at least for six months. . A suggested standard format for a post flight report is provided at Practice Guide 7.1.1.

9. Communications

- 9.1. For the performance of a safe and effective mission it is essential that good communications are established, and that the language to be used at the fire is defined. This is particularly important in regard to the aerial resources.
- 9.2. It is strongly recommended that, unless the normal aviation language of the host and sending country is the same, English is used for all conversations at the fire when an aircraft has been deployed from another country; as:
- a. English is recognised world-wide as the agreed primary language of aviation;
 - b. it will not always be possible for an interpreter to be on board an aircraft;
 - c. the aircraft to be deployed may not have enough space to carry an interpreter as an additional passenger;
 - d. the host country may refuse to authorise anyone other than the crew to travel in the aircraft;
 - e. interpreters do not make literal translations, which means there is a risk that some of the information regarding the fire will not be translated;
 - f. if the interpreter is assigned to another aircraft and that aircraft has a mechanical failure, the crew reaches their fatigue limits, or the aircraft needs to refuel then the interpreter will be unavailable.
 - g. If any aircraft from the sending country is relying on the interpreter then it will also be forced to cease operation.
- 9.3. The recommended level of English is the Aviation Operational Level 4. Every crew member participating in a deployment must demonstrate that at a minimum they can speak and comprehend English at Aviation Operational Level 4.
- 9.4. The person in charge of the coordination of aerial resources at the fire must also be certified as speaking and comprehending English at Aviation Operational Level 4 (or equivalent).
- 9.5. When a resource is deployed to a host country, the following logistics will need to be considered:
- a. location and accessibility of crew accommodation;
 - b. practical support and ancillary services;
 - c. internet access for crew when on the ground;
 - d. airport access;

- e. readily available and current maps and aviation charts;
 - f. interpreter, if required.
- 9.6. If a resource is to be deployed, the host country must appoint a Ground Liaison Officer (GLO). The GLO must be a person with the authority and capability to manage and resolve any logistics requirements of the hosted crew.
- 9.7. It is recommended that the host country assign a GLO to each hosted crew (i.e. one for each different sending country). The contact information for the GLO should be provided by the host country to the sending country prior to the deployment.
- 9.8. The Ground Liaison Officer (GLO) will also be responsible for arranging the aircraft and crew technical requirements. The GLO may delegate this task to a specialised officer as required. The GLO will ensure that:
- a. the crew have a technical room available which is easily accessible and positioned at a suitable location;
 - b. there is storage for spare parts and aircraft equipment;
 - c. ground equipment is readily availability (including, but not limited to, ground power unit, lighting support, aircraft cleaning units, etc)
 - d. an emergency response plan and rescue equipment is readily available for both land and water;
 - e. if the aircraft is required to load salt water or chemical suppressants or retardants, that there is a fresh water system available for cleaning the outer part of the aircraft so as to avoid corrosion.

10. End of Mission

- 10.1. Once the mission has ended the host country must:
- formally release the resources in accordance with the relevant ID Agreement;
 - assist the hosted crew as required in planning the demobilisation and return flights;
 - obtain all required information from the hosted crew to enable the completion of all the documents regarding the hosted resource's involvement the fire operations; and
 - provide the hosted crew with all documentation regarding the resource's involvement in the fire operations.
- 10.2. Once the mission has ended the hosted crews will:
- make all necessary preparations for demobilisation and return flights;
 - provide information and fill in all documentation as requested by the host country regarding its involvement in the fire operations;
 - retain all documents provided by the host country which set out the resources involvement in the fire operations.
 - Distribution of responsibilities

10.3. In any deployment it is necessary to clarify the distribution of responsibilities between the host and the sending countries. Countries sending or receiving assistance need to understand that certain responsibilities are inherent in these deployments. The following paragraphs identify some key responsibilities of all countries, agencies, or organisations involved. There are certainly more issues than those listed below but this information attempts to identify some of the main elements involved in these types of deployments.

10.4. Sending countries.

It is important to note that with international assistance the success or failure of the mission rests just as much on the personal conduct of the representatives of the sending country as it does on the effectiveness of their fire management capabilities. It is critical to always send the country's most appropriate and qualified personnel - individuals who are selected on their skill and capability to undertake the mission and not on rank or seniority. Of particular importance is cultural sensitivity towards the host country. Personnel being sent will be seen as ambassadors for their country and qualities appropriate to such a role should be included in the selection criteria.

10.5. Host country.

The host country must also accept the responsibilities involved in hosting personnel from other countries. The host country must be prepared to brief hosted country teams and representatives on fire issues such as:

- fuels;
- weather;
- topography;
- safety;
- management structure on the fires;
- fire fighting techniques and equipment;
- types and lengths of assignments
- communications.

10.6. Of particular importance is briefing on legal issues within fire management as well as political and social sensitivities within the wider community.

10.7. The host country must also be prepared to provide logistical and operational support including welfare support as required.

10.8. International Deployment agreements must clearly specify responsibilities for liabilities and claims.

10.9. Countries developing agreements should seek specific legal advice regarding liabilities and claims measures that are appropriate to the legal systems of host countries and sending countries.

10.10. Legal advice must also consider the implications of provisions regarding liabilities, claims and compensation in any wider bi-lateral or multi-lateral arrangement or civil protection mechanisms or agreements.

10.11. The following sample provisions are provided only to illustrate some possible considerations in drafting international deployment agreements:

a. Third parties

Any damage to a third party, caused as a consequence of the deployment, will be covered by the host country, even in the event of a false manoeuvre or technical error by the hosted resource. The sending country will only be responsible in the case of negligence or illegal act of its personnel during the course of deployment activities.

10.12. Death or injury

If the hosted crews are injured or lose their life during the deployment, the compensation for their temporary or permanent loss of labour, or for their dependents in the case of death will be paid by the social security agencies of the country in which the injured or deceased personnel reside, in the manner provided for by the laws and regulations of that country.

In the case of an accident or fatality during the deployment, the initial responsibility for the care and welfare of personnel will rest with the host country, until such time as the responsibility can be formally transferred to the sending country

In the case of an accident or fatality during the deployment in the host country, the responsibility will be in hands of the host country. Neither the sending country or the hosted crews will have any liability related to the accident or fatality

10.13. International Deployment agreements must clearly specify responsibilities for costs associated with deployments.

10.14. In developing agreements, the provisions regarding costs and compensation in any wider bi-lateral or multi-lateral arrangement or civil protection mechanisms or agreements must be considered.

a. The following sample provision is provided only to illustrate some possible considerations in drafting international deployment agreements:

10.15. The host country will compensate the sending country for all costs related to the deployment. The cost of materials, equipment and fuel consumed, damaged or destroyed during the deployment will be calculated at the international market price. The payment procedure for these costs will be negotiated by the heads of the authorities of both countries in accordance with specific procedures set down in the ID Agreement.

11. References and related information

EU Host Nation Support Guidelines - European Commission Staff Working Document; Brussels (2012) Available online at:

http://ec.europa.eu/echo/files/about/COMM_PDF_SWD%2020120169_F_EN_.pdf

12. Checklist

- 12.1. The objective of this Guide is to provide a checklist of subjects that should be considered for incorporation into bi-lateral or multi-lateral agreements that provide for inter-jurisdictional deployment of aviation resources; and to provide a possible format for such agreements in order to ultimately achieve consistency between agreements.
- 12.2. The checklist may be utilised for agreements that are specific to aviation resources, or where aviation resources are covered by wider resource sharing agreements or other international cooperation arrangements.
- 12.3. The checklist should be used in conjunction with Practice Guide 7.1 International Deployment Procedures.
- 12.4. This checklist was originally adapted from the FAO Fire Management Voluntary Guidelines (see References).
- 12.5. The checklist assumes that the agreement is structured as an over-arching master agreement (with a term of up five years, for example) plus a more detailed operating plan that is reviewed annually.

Item Number	Item
1.	Recital
1.1.	Parties
1.2.	Agreement Recital
2.	Term of agreement
2.1.	Term
2.2.	Operative date
2.3.	Options to extend and method of extension
2.4.	Entry into force of agreement
3.	Definitions and glossary
3.1.	Terms, definitions, abbreviations, acronyms
3.2.	References to external glossaries (eg ERFOINET, GFMC)
4.	Purpose
4.1.	Background and context
4.2.	Objectives
5.	Interpretation of agreement
5.1.	Governing law and Jurisdiction, applicable legislation
5.2.	References to persons and entities, gender
5.3.	Operation of document clauses and headings
5.4.	Interpretation of business day
a.	Operation across different time zones
5.5.	Operation of counterparts
5.6.	Application of joint and / or several obligations
6.	Scope of Agreement
6.1.	Scope of cooperation
6.2.	Forms of cooperation
6.3.	Resources that may be exchanged
6.4.	Limitations

	<ul style="list-style-type: none"> a. provides understandings and interpretations for countries and organisations concerning the circumstances and limitations under which each party is entering into the agreement;
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	<ul style="list-style-type: none"> 7. Operation of agreement <ul style="list-style-type: none"> 7.1. Organisational responsibilities 7.2. Exchange of information <ul style="list-style-type: none"> a. protocols and methods for coordinating and exchanging information b. types amount and timing of information exchange c. notification procedures for emergencies or for other significant events 7.3. Coordination <ul style="list-style-type: none"> a. methods of coordination and under what organisational structure the work will take place 7.4. Operating Plan <ul style="list-style-type: none"> a. description of operating plan b. authority for plan c. procedures for review approval of annual plan
	<ul style="list-style-type: none"> 8. Expenses, costs and payments <ul style="list-style-type: none"> 8.1. Responsibilities for meeting costs <ul style="list-style-type: none"> a. criteria for reimbursement of costs, where applicable (for example, some agreements especially for mutual support in border areas, may not require reimbursement); 8.2. Personnel costs 8.3. Aircraft and equipment use costs 8.4. Liability for taxes 8.5. Liability for airways and air traffic control charges 8.6. Currency 8.7. Invoices and payment <ul style="list-style-type: none"> a. procedures for invoicing and reimbursement
	<ul style="list-style-type: none"> 9. Liabilities, claims and compensation <ul style="list-style-type: none"> 9.1. Liability and remediation for third-party damage; 9.2. Cross-waivers and exemptions

	<ul style="list-style-type: none"> a. how and when are used 9.3. Protocols and procedures for medical assistance and possible evacuation of injured personnel 9.4. Compensation for injury or death <ul style="list-style-type: none"> a. responsibilities timing, levels and limitations 9.5. Privileges and immunities of the assisting personnel 9.6. Indemnities 9.7. Insurance <ul style="list-style-type: none"> a. requirements for parties to hold insurance or to require insurance of others (eg to require Aircraft Operations to hold insurance)
	<ul style="list-style-type: none"> 10. Border crossings <ul style="list-style-type: none"> b. protocols and procedures for border-crossing, immigration and customs procedures
	<ul style="list-style-type: none"> 11. General provisions of agreement <ul style="list-style-type: none"> 11.1. Withdrawal from agreement 11.2. Termination of agreement 11.3. Breaches 11.4. Amendments and review 11.5. Confidentiality 11.6. Intellectual property 11.7. Publicity 11.8. Legal costs and expenses 11.9. Survival of indemnities 11.10. Enforcement of indemnities
	<ul style="list-style-type: none"> 12. Notices <ul style="list-style-type: none"> 12.1. Service of Notice 12.2. Particulars for Service of Notices
	<ul style="list-style-type: none"> 13. Dispute resolution <ul style="list-style-type: none"> 13.1. Notification of dispute 13.2. Resolution process 13.3. Continuation of obligations

	<p>14. Links</p> <p>a. for example, to emergency or disaster management plans for the host country</p>
	<p>15. Execution</p> <p>a. Signatures or seals of participating countries / agencies / organisations</p> <p>b. Date of execution</p>
	<ul style="list-style-type: none"> • SCHEDULES a. (if required, for example a list of aircraft resources that may be made available under the agreement)
	<ul style="list-style-type: none"> • ANNEX a. Operating Plan <ul style="list-style-type: none"> i. process for review of operating plan ii. procedures for activation and deployment of resources iii. operational guidelines iv. standard operational procedures v. requirement for conformance with Fire Aviation Guidelines and Standards vi. pre alert procedures vii. language requirements

References and related information

EUFOINET *European Glossary for Wildfires and Forest Fires* (2012). Available online at: <http://www.northumberland.gov.uk/Default.aspx?page=4604> and at: <http://www.fire.uni-freiburg.de/literature/glossary.htm>

FAO *Fire management: voluntary guidelines. Principles and strategic actions*. Fire Management Working Paper 17. Rome (2006). Available on line at: <http://www.fao.org/forestry/site/35853/en>

Global Fire Monitoring Center *International Multi-Lingual Fire Management Terminology* GFMC, Freiburg (2010) Available online at: <http://www.fire.uni-freiburg.de/literature/glossary.htm>