

Revision 2

Aerodrome Certification Exposition

30 January 2013

General

Civil Aviation Authority (CAA) Advisory Circulars (ACs) contain information about standards, practices, and procedures that the Director has found to be an **acceptable means of compliance** with the associated rule.

Consideration will be given to other methods of compliance that may be presented to the Director. When new standards, practices, or procedures are found to be acceptable they will be added to the appropriate AC.

Purpose

The AC describes an acceptable means of compliance with the Aerodrome Certification Exposition (ACE) requirements in Part 139 of the Civil Aviation Rules (CAR).

Related Rules

This AC relates specifically to rule 139.77 Aerodrome Certification Exposition (ACE).

Change Notice

Revision 2 includes guidance material regarding new security training requirements introduced in the 16 Jan 2013 amendment to Part 139.

Published by
Civil Aviation Authority
PO Box 3555
Wellington 6140

Authorised by
Manager Policy & Regulatory Strategy

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CHAPTER 1 – FUNCTION AND FORM

1.1 Function and authority of the Aerodrome Certification Exposition (ACE)

1.1.1 If there is a single important point to appreciate about the ACE, it is that it is an extension of the Rules. Because Part 139 is written in terms broad enough for all aerodromes covered by the Rule, it cannot be specific to each individual aerodrome. The ACE provides the bridge between the requirements of the Rule and their specific application for each aerodrome, considering the aerodrome size, activity and configuration.

1.1.2 Be Comprehensive. Include in the ACE all of the Part 139 requirements that apply to your aerodrome. It is intended that the ACE provide, to personnel concerned with operating the aerodrome, the information needed to comply with the Rules.

1.1.3 Be Conservative. Refrain from elaboration and detail beyond that necessary to show how regulatory compliance is to be achieved at your aerodrome. Be watchful of the line between; essential statements of responsibility, authority, and procedure; and excessive levels of detail which can restrict flexibility to meet unforeseen circumstances, or even create unnecessary commitments under the Rule.

1.2 Preparation

The Rule requires the ACE to have, besides the technical content, certain physical features of organisation and design. These are discussed in the following paragraphs. You may prepare your ACE yourself or have someone else to do it. As you continue into this AC you will see that a fundamental knowledge of all aspects of the aerodrome operation will be required to produce a satisfactory ACE. Accurate, concise, statements which speak directly to Part 139 requirements are preferable to glossy essays. Remember that no matter who prepares it, it becomes your document when an Aerodrome Operating Certificate is granted by the Authority.

1.3 Organisation

1.3.1 There are three aspects of the ACE organisation that you will want to consider. One is concerned with the physical dimensions and layout of the document. Another is the mechanics of the assembly of the document. The third is the combination and sequencing of the material you are placing into the document.

1.3.2 Physical Layout Design. Since the ACE is to be a working document that reflects current aerodrome realities, it should be easy to maintain and revise. A systematic page identification system is highly recommended. Each page should carry enough identification to easily determine the document it belongs to, and its exact location in the document. The document should have an amendment page and a checklist as an inventory of the current pages. This can simply be a sheet with columns of page numbers with space for a date alongside. That is a very useful device to verify the currency of a page in question without leafing through the entire document. It is also a checklist for maintenance of the ACE, tracking pages for revision, inserting pages, and such like.

1.3.3 Assembly. The ACE should be typewritten and this includes other printing methods which produce a comparable result. A loose leaf, standard size, black and white page assembly in a three ring binder is suggested. Consider the potential problems with the reproduction, insertion, filing, and mailing of odd-size or multi-colour media, and comb or spiral bindings. Also, one side printing is recommended. While it does add bulk, it makes revision easier and lends itself to the display of pages extracted for ready-reference.

1.4 Organisation of Content

Your expositions use as a reference guide by aerodrome personnel should be encouraged. With this in mind, consider the functional assignments within your aerodrome organisation. This may influence the way you want to sectionalise the instructions in your ACE so that it lends itself to parcelling out discrete portions to your personnel for their guidance. Generally, the subject sequencing of the Rule itself provides a satisfactory outline for the ACE. This is particularly true for the review and updating processes which flow more easily with the order of the elements as they are found in the Rule.

1.5 Dissemination

The Rule requires that you furnish applicable portions of your ACE to the aerodrome personnel who are responsible for their implementation. It is not intended that the portion of the ACE provide the total instructions on how to do a job. If the ACE is well prepared, however, it will provide information on how the job should be performed to maintain compliance with the Rule.

CHAPTER 2 – ACE OVERVIEW

2.1 Contents for compliance

As a general Rule the ACE should contain operating procedures, equipment descriptions, responsibility assignments, and other information needed by aerodrome personnel to comply with the Rule.

2.2 Special elements of compliance

The material for procedures, equipment responsibilities and so on, will vary from aerodrome to aerodrome. The Rule also lists certain elements that shall be in all ACE for compliance. These mandatory elements can be regarded as the minimum detail required. Most of the provisions will need more explanation than these elements specify and can conveniently fit as they come up. A few may lend themselves better to a separate illustration (figure, table, chart, map or diagram) which can then be referenced in the discussion of the individual provisions. For example, it may be simpler to draw up an organisation chart and a table of the lines of succession and use them as references rather than repeat the information many times through the exposition.

2.3 Guidelines for specificity

2.3.1 The central theme and purpose of the ACE is embodied in the language of Part 139. It is to be a useful working document to assist aerodrome personnel in maintaining compliance with the Rule. This is where the two cardinal principles, mentioned in paragraph 1.1, come into play. The ideal ACE provides enough direction to achieve compliance with the Rule but stops short of smothering detail. Approach the subject as if you, the aerodrome operator, are leaving instructions for someone to carry on in your absence. When you are writing your instructions you may be concerned with **WHO** is going to perform the tasks, **WHAT** the tasks consist of, any particular advice on **HOW** it is to be performed, and the timetable for performance to ensure that things happen **WHEN** you want them to. These points are discussed below.

2.3.2 WHO. There are two aspects of **WHO** that deserve discussion. There is the **WHO** that normally operates away from your presence on a relatively autonomous basis - not outside your authority but at some distance, either physically or functionally. We shall call this **WHO** "independent" for convenience. The key element is that this **WHO** may have to make decisions that takes action to deal with abruptly changing situations without first checking with you, even if you are somewhere on the aerodrome. The other **WHO** - the "substitute" - is one who must step in and perform tasks for compliance with the Rule when the usual chain of responsibility and authority has been temporarily interrupted. This **WHO** is essentially a substitute in a function and may or may not be completely familiar with the normal routine. The ACE should provide sufficient guidance for performing the function and, of course, instructions for calling for assistance if problems arise.

2.3.3 The Independent WHO. As stated earlier, this **WHO** is probably not totally independent in authority or action - the key point is that certain significant actions may have to be taken without the opportunity for a routine request and approval process occurring between you. Therefore you, as aerodrome operator, want to feel confident that this **WHO** knows what is required from a regulatory standpoint; and can apply this knowledge to new situations, as they arise, as well as the daily routine. This can be accomplished with firm, clear instructions in the ACE. The Rescue and Firefighting function provides an illustration. Events can occur at the fire station that require the urgent initiation of actions that could have consequences somewhere else. For example if a piece of fire equipment becomes inoperative, some management action may have to be taken with respect to limiting air transport operations, or at least initiating notification to air transport operators using the aerodrome. If an emergency call is received a decision is often required about

initiating all or part of the aerodrome emergency plan. Do the rescue and firefighting personnel who are faced with these choices have clear, concise, and available information that will put action on the right track? Finally, it must be clear which **WHO** is the one to be responsible for carrying out the instructions.

2.3.4 The Substitute WHO. Keep in mind which **WHO** may have to step forward to accomplish tasks if you or your regular designated representative is absent. You would probably want to select in advance the individual most qualified to do the job. Lets use the aerodrome inspection programme as an example. Assuming that the individual is knowledgeable about aerodrome operations, if not the fine points of Part 139, you would probably not have to start your instructions totally from scratch. However, the individual may not normally perform (or directly oversee) that particular function. Therefore, the ACE should be specific about critical aspects of the job, such as the routes to be driven on the aerodrome. Then again, since you are not there, there may be yet another person doing that chore, instead of the **WHO** you had planned for. If your electrician who usually checks the aerodrome lighting is out that day, will the substitute know what to look for? Will the substitute know where the switches are to turn on the lights in the first place? In other words, an instruction in the ACE that says “field lighting will be checked for compliance with applicable requirements” is simply inadequate.

2.3.5 WHAT and HOW. The **WHAT and HOW** of ACE instructions refers to the tasks assigned to various individuals or departments who are charged with achieving compliance with the Rule. Unless all the personnel assigned to the task are familiar with the regulatory requirement, the ACE should be structured to produce the desired result by providing guidance appropriate to the training and experience of the personnel. For example, it would be questionable value to write instructions in the ACE that the ground maintenance crew is to “Maintain all safety areas in accordance with the Rule” unless the crew knows what Part 139 says about the surface of safety areas and the dimensional standards that apply to each safety area. A better approach would be to identify the physical boundaries of the safety areas and state graphically what sort of surface conditions are to be maintained.

2.3.6 WHEN. The best instructions will not produce satisfactory results if they are not put into action. Is the instruction “The rescue and firefighting unit will inspect the fuelling areas each day” specific enough? Is there going to be a lapse in accomplishment because the first shift thought the second was going to do it, and the second shift thought that the first one surely had done it? The **WHEN** may also be triggered by circumstances, such as produced by adverse weather conditions. Can the individual who must take some action read a clear and precise **WHEN** in the ACE, or is there some nebulous statement like “When adverse weather conditions dictate”? A **WHO** question can arise here, as well as a **WHAT and HOW**, if certain procedures or equipment must be specified for use. In fact, it should be obvious now that **WHO, WHAT, and WHEN**, are usually going to be closely intertwined, and that most instructions will have to satisfy the needs of them all.

CHAPTER 3 – CONTENT OF THE ACE

3.1 Purpose of this listing

All of the provisions of Part 139 apply to aerodromes with a certificate. Those aerodromes prepare and maintain an ACE that reflects the manner in which the aerodrome complies with the requirements of Part 139. All of the Rule headings are listed below with amplifying remarks or examples. The order of presentation follows the sequence found in the Rules.

3.2 About this listing

Except for the requirements of a purely administrative nature, all of the items should be written to satisfy the questions **WHO, WHAT, HOW, and WHEN** as discussed in paragraph 2.3 of this AC. There are also the Elements of Compliance to be considered - refer to paragraph 2.2. The discussions and examples presented in this listing cannot cover all possible aerodrome situations. Omission of some aspect of Part 139 does not mean it is not required or is of lesser importance. Any questions you may have concerning the application of these discussions or examples to your own aerodrome should be resolved with the Authority.

3.3 Rules of Part 139

3.3.1 *Rule 139.13 Safety Inspections Audit*

This should be mentioned in your ACE so that whoever is in charge of the aerodrome in your absence is aware that a person duly authorised by the Director has authority to inspect and audit the aerodrome, documents and records to determine that you are in compliance with the requirements of Part 139.

3.3.2 *Rule 139.15 Exemptions*

An exemption, if you have one, occupies its own niche in the compliance picture of your aerodrome. It is important to understand what an exemption is and what it does, and how you may fit it in your ACE.

3.3.3 *Rule 139.17 Deviations*

This provision must not be confused with a violation of the Rules. In essence the provision is for you to respond to an emergency situation. A precise definition of a deviation is difficult and the following examples may help you:

- giving permission to an air transport aircraft with an in-flight emergency to land at your aerodrome, though the size of the aircraft is beyond your aerodrome rescue and firefighting category, or that a required visual aid is not serviceable, is a deviation.
- you send your rescue firefighting capability to assist in an emergency off the aerodrome not related to aviation and permit normal operations by aeroplanes requiring that capability. That is a violation not a deviation!

3.3.4 *Rule 139.53 Aerodrome Limitations*

Any limitations that you establish for the safety of aircraft operations at your aerodrome must be copied in your ACE and given prominence so that each of your employees are aware of it along with any instruction they might need for compliance.

3.3.5 *Rule 139.55 Personnel Requirements*

Except for those areas where the Rule requires specific training or performance documentation, the Authority normally assumes that a function well performed indicates sufficient qualified personnel. Remember that this requirement includes aerodrome management and supervisory

personnel as well. In this regard a chart or table showing the lines of succession of aerodrome responsibility would be helpful to demonstrate accountability under this Rule.

The organisation is required to nominate a person to be identified as the Chief Executive. This person must have the overall authority within the organisation, including financial authority, to ensure that all the necessary resources are available to operate and maintain the aerodrome and its facilities in compliance with Part 139 and to ensure compliance with the procedures in its exposition.

The person or persons nominated in the exposition must represent the management structure of the aerodrome operator and are required by Section 9 of the Civil Aviation Act 1990 to meet the criteria in Section 10 of the Act in respect of being fit and proper persons.

You may choose to appoint managers for all or any combination of these areas of responsibility however it must be clear to whom the responsibilities devolve. It is necessary in any case that these manager(s) report to and are ultimately responsible to the chief executive.

The person(s) so nominated are to be identified on Form CAA 24139/01 and credentials supplied with the application. To be accepted such nominated persons should have adequate knowledge and satisfactory experience in the civil aviation system associated with the operation of aerodromes.

The titles, responsibilities, and numbers of the nominated persons will vary dependent on the size and scope of the aerodrome organisation.

Irrespective of the titles which may be used or the number of persons nominated the following areas of responsibility you are expected to address those that are applicable to your aerodrome activities.

Aerodrome inspection

Responsibility for ensuring that all regularly scheduled and periodic inspections are conducted and reported on in accordance with the standards and procedures specified in the organisation exposition.

Aerodrome maintenance

Responsibility for ensuring the conduct of preventive maintenance and the timely correction of any reported defects.

Aircraft rescue and firefighting

Responsibility for ensuring that the aircraft rescue and firefighting equipment and agents are available and at the correct level for the aerodrome category. That there are sufficient detailed and available trained personnel to ride the vehicles and operate the equipment to its maximum capacity.

Internal Quality Assurance

Responsibility for quality assurance procedures to assure compliance with the aerodrome certification exposition and with Part 139. Responsibilities include ensuring the adequacy of the exposition and associated procedures in meeting the requirements of Part 139 and in reflecting the scope of services and facilities provided and ensuring that corrective actions in respect of any deficiencies are fully implemented.

3.3.6 Rule 139.57 Aerodrome Emergency Plan (Aep)

You are referred to the ICAO Doc 9137-AN/898 Airport Services Manual Part 7 Airport Emergency Planning which provides detailed guidance on the many facets of the AEP which are acceptable for compliance with this Rule. The AEP is a mandatory part of your ACE and the guidelines for specific statements in paragraph 2.3 regarding responsibility and function apply when you write about the AEP.

3.3.7 Rules 139.59 Rescue And Firefighting — Category Determination

State what your aerodrome category is and explain what it means in terms of the aircraft operating at your aerodrome. It would be a good idea to name the largest type of aircraft that your category can serve because sooner or later the question is bound to arise.

3.3.8 Rule 139.61 Rescue And Firefighting — Extinguishing Agents

State the minimum usable amount of extinguishing agents that you are required to have for your aerodrome category and do not forget to address the reserve supply and replenishment. AC 139-4 Aerodrome Rescue and Firefighting provides further information on extinguishing agents which you might want to include in your ACE.

3.3.9 Rule 139.63 Rescue And Firefighting — Vehicles

State the minimum number of vehicles that you require for your aerodrome category and this a good time to equate the vehicle or vehicles with the requirements for extinguishing agents and the equipment to be carried.

3.3.10 Rule 139.65 Rescue And Firefighting — Personnel Requirements

The personnel requirements are the vital element for an effective rescue and firefighting service. AC 139.04 Rescue and Firefighting provides you with detailed guidance regarding personnel, the required protective clothing, and the rescue and firefighting equipment. Your ACE should contain a description of the alarm system for rescue and firefighting response and a requirement for a daily test. The air traffic service role in the alarm system, and the test, should also be included.

3.3.11 Rule 139.67 Rescue And Firefighting — Response Capability

Having provided the necessary elements of rescue and firefighting for the category of your aerodrome, this is now the vital area where you need clear instructions about the disposition of the rescue and firefighting elements to achieve the response capability. In particular, you should establish a daily check system of the serviceability of the vehicles, and confirmation of the availability of the rescue and firefighting personnel. You must also be aware that this capability is the first step of your aerodrome emergency plan.

One aspect of your response capability which must be covered in your ACE is the requirement for coverage during operations by aeroplanes having a certified seating capacity of more than 30 passengers that are engaged in regular air transport operations. Your rescue and firefighting unit should be instructed to maintain a response capability at least 15 minutes before an arrival and 15 minutes after the departure of each aeroplane movement requiring coverage. It would be advantageous to impress on the air transport operators the importance of keeping you apprised of any changes to their flight schedules and to provide instructions in your ACE for contacting those operators for information on any flight delays or schedule changes.

3.3.12 Rule 139.69 Public Protection

The requirements of Part 139 pertaining to this subject are oriented toward inadvertent entry into an area containing hazards for the unwary trespasser who in turn could be hazardous to aircraft operations. The prevention of intentional infiltration of aerodrome security areas is within the

scope of Subpart D of this Part and should not be confused with this requirement. The coverage of your ACE should describe the measures taken to prevent inadvertent entry by persons, vehicles or animals. Fencing is an obvious method, and conspicuous signing is another. Neither one is much good if the gates are left invitingly open or the signs are faded or otherwise obscured. The ACE should provide for continuing surveillance of all of the safeguards on your aerodrome for compliance with this provision of Part 139.

3.3.13 Rule 139.71 Wildlife Hazard Management

In addressing wildlife hazards at your aerodrome, one of three types of entries are needed in your ACE: a statement of negative activity; a brief statement of activity not considered hazardous; or an environmental management programme to minimise or eliminate hazardous activities.

If there is no wildlife activity at your aerodrome, or at least no activity that you considered needed a programme, a statement in your ACE to that effect is needed.

If wildlife activity at your aerodrome triggered an environmental programme study, and it was subsequently determined that a programme is not required, your ACE should contain a brief statement that identifies the type and extent of the activity that triggered the study. This will serve as an approximate gauge for comparison with subsequent wildlife observations for reevaluation of the situation. In this case you can probably draw on the study to include some specifics on the type of wildlife activity likely to be observed, and some helpful guidance on when the activity may be approaching the limit of acceptability.

If it has been determined that your aerodrome must have an environmental management programme, it becomes a permanent part of your ACE unless a subsequent determination removes that requirement. You should follow the guidance in paragraph 2.3 of this AC to assure the appropriate level of specific instruction and guidance for aerodrome personnel.

3.3.14 Rule 139.73 Notification Of Aerodrome Data And Information

The users of your aerodrome use the data and information promulgated in the New Zealand Aeronautical Information Publication to assess the suitability of the aerodrome for the aeroplane types they operate. It is essential that you provide accurate and timely data and information to the aircraft operators through the medium of the Aeronautical Information Service (AIS) and that you maintain its currency. You should discuss this requirement with the Aeronautical Information Service to establish procedures for providing the aerodrome data and information. In particular make arrangements for the rapid advice of any changes of aerodrome conditions which require the issue of a NOTAM. You should pay particular attention to the **WHO, WHAT, HOW, and WHEN** to ensure that your procedures for this vital safety function is effective and reliable. AC 139.09, Aerodrome data and information, provides you with details of the information and data that you are required to provide to AIS.

3.3.15 Rule 139.75 Aerodrome Internal Quality Assurance

The aerodrome inspection programme and other checking requirements prescribed in the Rules, addressed later in this AC, are an essential element of a quality control system.

Your quality control system is an independent internal control system aimed at ensuring that any deviation from a performance standard will be detected and appropriate corrective action taken before the deviation becomes a hazard to the operations of aeroplanes at the aerodrome. Your quality control system should conduct ongoing reviews of the aerodrome operator's documentation, procedures and performance of the aerodrome elements on a regular basis. These reviews will ensure that all relevant requirements, standards, and procedures are adequately defined, documented, continue to be appropriate for the operation of the aerodrome,

and are being complied with. Your quality control system should have procedures for investigating the cause of any non-compliance with standards and for analysing the performance of any element of aerodrome operation. It will also show when reviews are due, when they are completed, and provide a system of reports that can be seen by the Authority on request.

Your internal quality control system should establish a means by which any deficiencies observed during the internal reviews can be corrected. These means will ultimately lead to the Chief Executive.

Quality assurance is an independent function and should be under the control of a senior person. The way in which it is established and the procedures used will vary with the size and scope of the aerodrome operation. It is a management tool to ensure that the quality system is effective and therefore the aerodrome operators policy, objectives, and procedures for, and commitment to quality assurance needs to be defined and documented.

You may, particularly if you have a small organisation, wish to make arrangements for an independent qualified person on a contractual or other basis to carry out the quality assurance reviews.

Your quality assurance document should contain —

- a clear definition of the level of quality the aerodrome operator intends to achieve
- a procedure that sets out the level and frequency of the internal reviews
- a procedure to record the findings of the quality reviews and communicate them to management
- a list of responsible persons
- procedures by which other “quality indicators” such as facility malfunction reports, incidents, complaints, defects are brought into the quality assurance system
- a procedure for management analysis and overview
- a procedure for rectifying any deficiencies which may be found
- procedures for documenting the complete review process from the inspection to the satisfactory management review so that this is available to the Authority during a safety audit

Measures should be taken to ensure that the quality system policy is understood, implemented, and complied with at all levels.

A quality system complying with the appropriate Rules of NZS 9001 (ISO 9001) “Quality Systems Model for Quality Assurance in Design/Development, Production, Installation and Servicing”, would be an acceptable means of compliance with Rule 139.75 Aerodrome internal quality assurance.

NZS 9004 Parts 1 & 2 (ISO 9004) “Quality Management and Quality System Elements Guidelines”, also provides guidance information for establishing quality systems.

3.3.16 Rule 139.103 Aerodrome Maintenance

This and other extensive maintenance type requirements will have similar patterns in your ACE. Refer to paragraph 2.3 of this AC and cover those areas of **WHO, WHAT, HOW, and WHEN**. The

aerodrome inspection programme will normally identify deficiencies and thus initiate a requirement for maintenance work. This portion of your ACE should prescribe the procedures needed by your maintenance personnel for the conduct of corrective maintenance.

The Rule also requires a preventive maintenance programme designed to alleviate the deterioration of any element of the aerodrome to a state where it might be a hazard to aircraft operations.

This requirement should be addressed with schedules and procedures established for your maintenance personnel.

Items you might want to pay particular attention to in this area are possible surface contaminants, providing specific instructions on the notification of aerodrome users of such a condition, and the authority to initiate removal operations. It is in your interest to avoid disruption to aeroplane operations due to the accumulation of contaminants and it is suggested that you anticipate these conditions and devise a programme for detection and removal which will minimise any disruption to the users.

3.3.17 Rule 139.105 Visual Aids For Navigation — Maintenance And Checking

The maintenance task is to fix or replace the broken or missing item in kind. However there are a few additional points to be considered. If the light is burned out it should be a simple matter to replace the bulb. But if the light has been smashed out of recognisable existence or missing, you need to be sure that whoever replaces it knows what kind of fixture to use. Similar information is required regarding markings. Well written instructions supplemented by an aerodrome diagram are valuable insurance against incorrect replacement of an item.

You should also include clear instructions on just how many, and in what sequence, lights may be out before the system is considered inoperative as prescribed in AC 139.06, Aerodrome Design Aeroplanes above 5700 kg MCTOW. This is an appropriate place to describe your runway and taxiway system of identification. Beyond the system description it is recommended that a runway and taxiway diagram be provided, especially if your identification system varies from the norm or is otherwise complicated. You should also know who is responsible for the aerodrome lighting and include the means of contacting them.

The location of marked or lighted (or both) obstructions that fall within your aerodrome's authority and responsibility should be included. The narrative description should be enhanced by locating the objects on a map or chart keying them to the description.

An aerodrome can be a confusing array of obstruction lights with different parties responsible for their maintenance. Be specific in your ACE identifying which ones are your maintenance responsibilities and which ones are the responsibilities of others. You should also include explanation of who is to contact them in case of an outage and how they do it.

The Rule also requires each visual aid for navigation to provide accurate guidance to the user. AC 139-3, Aerodrome Inspection, provides guidance regarding the ground and flight checking of visual aids which you can translate into your exposition.

Ensure that the procedures for inspection also include the procedures to instigate the correction of any defect found.

3.3.18 Rule 139.107 Works on Aerodromes

The important aspect is your control of works on aerodromes and the procedures established to ensure that any works conducted will not endanger aircraft operations. Further guidance is given

to you in AC 139-5 Works on Aerodromes which you can translate into procedures and instructions in your ACE.

3.3.19 Rule 139.109 Aerodrome Emergency Plan — Maintenance

Hopefully, an emergency situation at your aerodrome will be a rare occurrence and it is therefore important to periodically test and review your aerodrome emergency plan to maintain its potential effectiveness. Again the key element is to address the **WHO, WHAT, HOW and WHEN** in determining the procedures in your ACE.

3.3.20 Rule 139.111 Rescue And Firefighting — Operational Requirements

This is one of the most critical areas to write in your ACE. The basic ingredients are still the same - the familiar **WHO, WHAT, HOW, and WHEN** still highlight the requirements. This is an area where you have the independent **WHO** to deal with and a few problems unique to the rescue and firefighting situation.

Do you have full control over the operation of the rescue and firefighting unit that provides your service? How much latitude does it have before it must request your approval? Can the vehicles be dispatched off airport, or conduct some other task, without your permission? Are you reliably informed whenever an element of your rescue and firefighting unit becomes inoperative or unavailable for any reason? These are basic questions you should have answers to before you can write a useful rescue and firefighting procedure in your ACE. If you have full and firm control your task is made a lot easier. You will want to give your rescue and firefighting unit as much flexibility as possible within the scope of their mission, but you will want to build into your ACE procedures a fast and reliable information system so that you know when you are at a decision point concerning air transport operations.

The air traffic service unit, should you have one at your aerodrome, can be of great assistance to your rescue and firefighting operation. You should give priority to discuss with the unit the role of the unit in emergency operations and the particulars of its interface with the rescue firefighting unit and the aerodrome management. Write this in your ACE. Include in your instructions the limits beyond which the rescue and firefighting unit is not able to operate to avoid misunderstandings and ineffective actions during an actual emergency. It might be mutually beneficial to enter into a letter of agreement with the air traffic services unit to cover their participation in an emergency condition at your aerodrome. If this is done, copy the agreement in your ACE.

The Rule permits a temporary reduction in rescue and firefighting during periods by aeroplanes which require a lesser level or no level of rescue and firefighting. Certain conditions must be met which you must address in you ACE. The person, or persons, with the authority to implement the reduction must be identified in your ACE along with the procedures to be followed. There must be a system in place for the recall of the full required complement of rescue and firefighting personnel and equipment and this is a mandatory item in your ACE. There is a requirement for the notification to the Aeronautical Information Service prior to implementation of the procedure with appropriate responsibilities and authorities to be detailed in the ACE.

Place instructions for even the simplest communication systems in your ACE. If your rescue and firefighting unit is required to deal with additional channels for communication with other agencies, the opportunities for communication errors increases dramatically, especially in the heat of an emergency.

The inoperative vehicle potential needs careful attention in your ACE. To begin with there should be an explanation of what “inoperative” means in the context of the Rule. Inoperative means that the vehicle is unable to perform all the functions required of it. It does not mean that the vehicle

for example has been sent off the aerodrome and therefore not available for aerodrome emergencies. There should be clear instructions for the procedures to be followed, and who is to accomplish them, when a required item of rescue and firefighting equipment becomes inoperative. This is one of those areas where you, as the aerodrome operator, must have prompt and accurate knowledge of the status of your rescue and firefighting readiness so that you are able to discharge your responsibilities for notification and limitations on air transport aircraft operations.

3.3.21 Rule 139.115 Apron Management Service

You should appreciate that the apron is not part of the aerodrome manoeuvring area with established safety related Rules and procedures for the movement of aeroplanes and any essential ground vehicles. As suggested by the Rule you should first assess the volume of traffic, aeroplanes and ground vehicles, which use the apron to determine if you need to regulate their use of the apron. The objective of this service would be to prevent collisions between aeroplanes, between aeroplanes and obstacles or ground vehicles.

If you do determine that a service is required you must then determine who is going to be the service then issue appropriate procedures and instructions to personnel and to the apron users.

3.3.22 Rule 139.117 Aerodrome Inspection Programme (Aip)

This activity is very important because it impacts so many other areas of compliance with the Rules. The AIP function enables you to monitor aerodrome conditions to assist you with compliance with other requirements of the Rules.

AC 139-3 Aerodrome Inspection will help you structure a comprehensive programme for the aerodrome. The guidelines of paragraph 2.3 of this AC should be applied so that all of the elements of an effective inspection programme are accomplished.

Note that daily inspections are not absolutely required as there may be periods of no aeroplane movements at your aerodrome, but be wary of a long interval between inspections. In any event the schedule of inspections and the concomitant responsibilities should be included in your ACE.

3.3.23 Rule 139.119 Ground Vehicles

Tight control of ground vehicles can forestall many problems on your aerodrome movement areas, and clear precise procedures in your ACE can help ensure that control.

If your aerodrome has an air traffic service, your ACE should also contain any procedures or Rules that you have jointly agreed to including radio or other communication requirements. You are reminded that the operation of any radio equipment in the aeronautical mobile frequency band must be in accordance with the applicable requirements of Part 171 of the Rules.

If your aerodrome has no air traffic service, or for those periods when the air traffic service is not in attendance, your ACE should contain the procedures to control ground vehicles on the movement areas through prearranged signs or signals.

If you have special written agreements with your tenants concerning vehicle discipline in compliance with this Rule and there should be an appendix in your ACE for guidance of aerodrome personnel tasked with their enforcement.

3.3.24 Rule 130.121 Protection of Navigation Aids

This is another area where the ACE should reflect the assignment of a person or position to be alert to activity that may derogate the guidance from a navigation aid. Depending on the

placement of the navigation aids, there may also be a need to write procedures and assignments in the ACE for security patrols, fence maintenance, and so on.

3.3.25 Rule 139.123 Aerodrome Condition Notification

The Rule requires you to advise aircraft operators, as soon as practical, of any condition on the aerodrome which may affect the safe operations of aircraft at your aerodrome. AC 139.03 Aerodrome Inspection contains information for you to address this requirement in your exposition.

3.3.26 Rule 139.125 Noncomplying Conditions

A way to avoid noncomplying conditions is to build into your ACE, from the very beginning, the mechanisms to provide you, the aerodrome operator, with the timely and accurate information you need to take action to comply with each Rule of the Part. Your personnel need to be provided with clear instructions so that you are informed of any circumstances that require your timely action to maintain compliance with the Rule. If you delegate responsibility to others, or if tasks may fall on someone else in your absence, your best friend will be an ACE that provides the information and guidance needed by your aerodrome personnel to maintain safe aerodrome operations in compliance with the provisions of Part

Should some element of Part 139 not be met, to the extent that an uncorrected unsafe condition exists on your aerodrome, aircraft activity on that area must be halted. Your ACE should carry this message clearly to all aerodrome personnel: if someone discovers such a condition they will know that, at the very least, that the information must be passed to a specific level of aerodrome authority without delay.

3.3.27 Rule 139.127 Changes to Certificate Holder's Organisation

The Rule considers a timely amendment to be one provided to the Authority as soon as practical following its incorporation into the ACE with the exception of those changes listed in paragraph (d) which require acceptance by the Authority. It is a good idea, especially in the case of lengthy or complicated changes, to provide the Authority with a draft prior to incorporation in the ACE. When the revision to your ACE is effective, you should place special management emphasis on any area of the aerodrome operation which was affected. Usually, a change in working procedure or other requirement is easier to implement if those who must make the changes had a role in the formulation of the changes.

The Rule requires the ACE to be maintained current at all times. This can be an awesome workload or a relatively minor routine chore. The difference is largely in how you prepare for the review and revision process.

- **Lay the Groundwork.** Add the review and revision process to the list of things to be kept in mind when you design your ACE. Plan the document so that it lends itself to parcelling out self-contained segments for review by persons knowledgeable in that area. Identify who is to accomplish the review of the various parts of the ACE and when they are to do it. Set a schedule and keep it. This cannot be overemphasised. You may wish to schedule portions of the ACE on a staggered basis so that there is not an enormous workload accumulated at one time.
- **Establish the Process.** Once you have decided how, by whom, write it down where all those who have tasks to perform can be reminded of them. And the best place to write it down is in the ACE itself. Use the **WHO, WHAT and HOW** guidelines. You will also want to establish procedures for injecting changes or additions into the ACE in between regularly

scheduled reviews. You probably will be in the best position to see most of those situations develop, and can initiate a timely amendment to the ACE.

3.3.28 Subpart D Aerodrome Security

The National Aviation Security Programme Reference Manual amplifies the requirements of this Subpart and will assist you to provide a description of the security facilities and procedures required at your particular aerodrome.

3.3.29 Rule 139.203 and 205 Security training programme

The training requirements of these Rule Parts apply to people employed, engaged or contracted by the certificate holder.

Any training required under rule 139.203(8) and 139.205(c) is to be carried out by a security instructor who has been trained, and has demonstrated the required level of knowledge, experience and competency in the subjects to be taught, to the satisfaction of the aerodrome Chief Executive.

The applicable segments of initial and recurrent training needs to be identified and tailored for the different categories of personnel involved in the application of security measures contained in the certificate holder's exposition.

Some aspects of training may be the same through all levels of the organisation but will vary in the depth of knowledge to be imparted.

A simple and adequate method of developing, planning, and documenting the applicable segments of training, is the use of a *matrix chart*. By this method, each category of staff whose activities involve security is listed on the vertical axis and the various training modules required on the horizontal axis. By this means the training segments for each category can be readily identified and security training programmes developed.

The matrix will identify the procedures each category of personnel is required to have knowledge of, and be competent in.

The certificate holder shall develop a syllabus for applicable segment to fully cover the security control procedures each person needs to have a full knowledge of, and be competent in.

Security awareness training must be conducted in such a way as to put the training required for that category of person in context with the overall security requirements of the aerodrome.

As well as ensuring continued knowledge and competence, recurrent training, at not more than 3 yearly intervals, shall include instruction on—

- (a) changes in regulatory requirements and standards; and
- (b) changes to the organisation's procedures and programme; and
- (c) changes to the threat factor affecting the organisation's operations.

In relation to the certificate holder's training responsibilities, Section 12(4)(b) of the Civil Aviation Act 1990 needs to be noted.

The certificate holder must have procedures to assess the results of training in an appropriate manner. This may be by such methods as demonstration, explanation, or examination. Procedures must show how the operator ensures each competence contained in the syllabus is assessed to ensure a person has been trained successfully.

Minimum required levels of competence shall be prescribed by the operator for each topic and each person must be assessed to ensure they meet those required levels.

An example of competence levels is listed below:

The levels of understanding and associated competence for each of the topics are as follows:

- (1) Grade 1 denotes awareness of the subject:
- (2) Grade 2 denotes a basic knowledge of the subject:
- (3) Grade 3 denotes the ability to apply a basic knowledge of the subject in a situation that is likely to arise in the course of the person's duties:
- (4) Grade 4 denotes the ability to apply a thorough knowledge of the subject in a situation likely to arise in the course of the person's duties:
- (5) Grade 5 denotes the ability to apply a thorough knowledge of the subject and to exercise sound judgement in situations likely to arise in the course of the person's duties.

Training records shall be maintained to provide an accurate record for every person who is required to be trained. Trainee records should be more than a record of attendance. They must show when a person was trained in each segment of training that is undertaken, the method of assessment and results. The record should give a complete picture of that person's instruction and assessment of their competence to understand and perform the security measures in which they have been trained.