



**WORKING PAPER**

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**Ninth Meeting of the ICAO/LACAC NAM/CAR and SAM Aviation Security and  
 Facilitation Regional Group (AVSEC/FAL/RG/9)**  
 Santo Domingo, Dominican Republic, 25 to 29 March 2019

**Agenda Item 9: Other Business**

**SECURITY RISK ASSESSMENT MANUAL FOR AERODROMES**

(Presented by Brazil)

| <b>EXECUTIVE SUMMARY</b>   |   |
|--|---|
| <p>This working paper presents the initiative of the Brazilian Civil Aviation Authority to develop a security risk assessment manual for aerodromes with the purpose of establishing the guidelines of the methodology of risk analysis focused on the acts of unlawful interference and to assist the aerodrome operators to produce the AVSEC Risk Assessment Reports.</p> |   |
| <b>Action:</b>   | To share Brazilian experiences for consideration by the other States, with the aim of identify similarities and challenges in implementing a continuous process of risk assessment and guide airport security planning. |
| <i>Strategic Objectives:</i>   | <ul style="list-style-type: none"> <li>• Security &amp; Facilitation</li> </ul>   |
| <i>References:</i>   | <ul style="list-style-type: none"> <li>• Annex 17 and Doc 8973, Appendix 37</li> </ul>  |

**1. Introduction**

1.1 The Aviation Security Manual - Doc 8973/10th (2017), establishes on 9.3.4 that entities implementing SeMS should develop and carry out a recurrent local threat identification process supplementing national threat and risk assessments, and determine whether the risks associated with the threats should lead to changes in security frameworks.

1.2 In the national scope, the Brazilian Civil Aviation Regulation 107 (RBAC 107), that established the requirements for civil aviation security applied to aerodrome operators, requires (item 107.17(a)) that these entities should develop and implement a continuous process of risk assessment, with the objective of guiding the planning of airport security. Besides that, there are supplementary instructions at IS107-001B (items F.1.1 to F.1.5) detailing procedures to be performed by aerodrome operators to carry out the AVSEC risk assessment of the aerodrome.

1.3 The Brazilian Civil Aviation Authority published the Security Risk Assessment Manual for Aerodromes to assist those responsible for aerodromes to prepare the AVSEC Risk Assessment Reports.

1.4 The intention with this working paper presentation is to show AVSEC/FAL Regional Group the Brazilian experience and challenges in a Security Risk Assessment Manual for Aerodromes implementation

## **2. Analysis of plausible threat scenarios**

2.1 The Manual, in a non-exhaustive list, exemplifies several threat scenarios of Airport AVSEC Contingency Plan (IS107-001B, Appendix G). Besides that, instructs those responsible to identify all the possible or potential scenarios carefully, being specific and thorough in considering each form of threat.

2.2 Threat scenarios should be re-evaluated once a year, or in shorter time, whenever there is a visible change in threats, aerodrome facilities or security procedures.

## **3. Likelihood of an attack**

3.1 Answering to a list of objective questions, the manual establishes a methodology, through the sum of the points obtained in each question, whose objective is to identify the probability of a given threat scenario to occur.

3.2 With the sum of the question points, it is identified what is the probability of the event being evaluated, on a graduated scale, divided according to the classification provided in paragraph 9 of Appendix 37 of Doc 8973.

3.3 On **Appendix A** to this working paper, for example, is the list of questions answered to determine the likelihood of an attack on a hypothetical passenger terminal.

## **4. Consequences**

4.1 The severity of the consequences is determined using the same specifications set out in the table A37-1 of Appendix 37 of DOC 8973.

## **5. Analysis of the vulnerability**

5.1 To determine the vulnerability level, the manual uses the same methodology established to identify the probability of an attack. With the score obtained answering to a list of objective questions, it is identified on a graduated scale, divided according to the classification provided in paragraph 11 of Appendix 37 of Doc 8973, what is the vulnerability level related to the event being evaluated.

5.2 For each of the threat scenarios included in the manual, a specific set of questions was developed to quantify the vulnerability of aerodrome security procedures. Such questions should seek all the 8 critical elements of the security system against acts of unlawful interference, as the existence of primary legislation and regulations (CE1 and CE2), surveillance procedures (CE3), technical staff training (CE4), orientation material (CE5), etc.

5.3 On Appendix 2 of this working paper, for example, is the list of questions answered to determine the vulnerability level of a hypothetical airport to the threat scenario "attack to an aircraft using Manpad".

## **6. Level of risk exposure, mitigating measures and residual risk**

6.1 The level of risk exposure is determined by the relation of the probability of the scenario occurring, the severity of the damage that would be caused and the vulnerability of the aerodrome to this scenario.

6.2 If the level of risk exposure is not acceptable, it is possible to evaluate in a simple and objective way through the list of questions in Appendix 2 to identify where mitigating measures are required to keep the residual risk within acceptable levels.

## **7. Conclusion**

7.1 The conclusion is that the publication of a Security Risk Assessment Manual for Aerodromes has improved the State's security, as it has established a standardized methodology for carrying out the procedures of the regulation, whose reports are received by the Federal Police and ANAC and are used to develop the State Risk Assessment.

7.2 It was noted that the Manual has made easier for aerodrome operators to comply with regulation, since it has provided a simple and objective methodology to carry out the risk assessment. The manual generates savings by guiding the planning of investments in airport security.

7.3 This action is aligned to the Priority Action 1.4 of the Regional Aviation Security Roadmap, endorsed in July 2018 at Panama City by the Regional Conference, to address common challenges through implementation of the ICAO GASeP.

## **8. Suggested actions**

8.1 The Meeting is invited to:

- a) To share Brazilian experiences for consideration by the other States, with the aim of identify similarities and challenges in implementing a continuous process of risk assessment and guide airport security planning.

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**APPENDIX A**

**LIST OF QUESTIONS ANSWERED TO DETERMINE THE LIKELIHOOD OF AN ATTACK ON A HYPOTHETICAL PASSENGER TERMINAL**

|                 |  | 5 points   | 1 - 4 points   | 0 points  | SCORE      | PONDEROSITY |
|-----------------|--|--|--|---|------------|-------------|
| Q1              | Is there a known criminal organization in the region that has the potential to lead to unlawful interference with civil aviation?  | high potential   | low potential  | does not exist  | 5          | 1           |
| Q2              | Is there a history of violent actions in the surroundings or in the aerodrome facilities in the last year, including acts of unlawful interference?                                | more than 3 high   | 1 to 3 medium  | 0 low   | 3          | 1           |
| Q3              | Is there a history of riots or strikes inside or in the vicinity of the aerodrome in the last year?  | more than 3 high   | 1 to 3 medium  | 0 low   | 5          | 1           |
| Q4              | What is the weekly traffic volume of scheduled flights at the aerodrome?   | more than 49 high  | 20 to 49 medium  | 0 to 19 low   | 5          | 1           |
| Q5              | Are there flights that could be considered as potential targets? (such as those linked to locations potentially subject to acts of unlawful interference)                          | yes  | -  | no  | 0          | 1           |
| Q6              | Is there a history of high visibility events and repercussions in the national or international media in the aerodrome's influence region?   | more than 2 events in the last 5 years   | up to 2 events in the last 5 years   | no event in the last 5 years  | 3          | 1           |
| Q7              | Are there dignitaries, celebrities, or individuals potentially being subjected to individual attacks? (high-risk prisoners, people included in a witness protection program, etc.) | above 1 boarding ou landing per week   | 1 boarding ou landing per week   | irrelevant frequency of use of the aerodrome                                | 5          | 1           |
| Q8              | Is there an internal crisis in the region of aerodrome influence? (uprising, riot or internal commotion, such as imminent or ongoing civil war or any other political instability) | imminent or ongoing civil war; state of siege, state of defense or federal intervention                                | presence of large organized riots  | socio-political stability scenario  | 1          | 1           |
| Q9              | Are there economic problems? (any state of economic crisis that could result in severe budget cuts that could impact on maintaining civil aviation security measures)              | declaration of financial default; severe shortage of consumer goods and first necessity itens; widespread unemployment | financial recession; financial imbalance; repeated delay in the payment of public servants | economic stability scenario   | 1          | 1           |
| Q10             | Is there specific information about the possibility of an attack occurring through this threat scenario?   | there is specific planning, intent, and attack capability information  | there is some evidence of intent and ability, but no evidence of actual attack planning    | there is no specific information or signs of possibility or attack planning | 0          | 1           |
| <b>AVERAGE:</b> |  |  |  |   | <b>2,8</b> |             |

**Determination of probability through the score obtained in the questionnaire, according to the classification in paragraph 9 of Appendix 37 of Doc 8973:**

|                    |  |  |
|--------------------|--|--|
| <b>PROBABILITY</b> | <b>HIGH</b><br>(up to 5 points)        | a very plausible scenario, with an actual attack of this kind having occurred in the past few years, or strong evidence of capability, intent and planning   |
|                    | <b>MEDIUM-HIGH</b><br>(up to 4 points) | a clearly plausible scenario, with relatively recent examples or evidence of early attack planning or hostile reconnaissance   |
|                    | <b>MEDIUM</b><br>(up to 3 points)      | an essentially plausible scenario, with some evidence of intent and capability and possibly some examples, but no evidence of current attack planning  |
|                    | <b>MEDIUM-LOW</b><br>(up to 2 points)  | a scenario for which there are no, or no recent, examples, but some evidence of intent, yet with a method apparently not sufficiently developed for a successful attack scenario or probably superseded by other forms of attack |
|                    | <b>LOW</b><br>(up to 1 point)          | a theoretically plausible scenario but with no examples or signs of attack or attack planning, and a theoretical intent but no apparent capability   |

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## APPENDIX B

**LIST OF QUESTIONS ANSWERED TO DETERMINE THE VULNERABILITY LEVEL  
OF A HYPOTHETICAL AIRPORT TO THE THREAT SCENARIO "ATTACK TO AN AIRCRAFT USING MANPAD"**

|  |  | 5 points      | 1 - 4 points   | 0 points  | SCORE      | PONDEROSITY |
|--|--|---------------|--|---|------------|-------------|
| Q1                                       | Are there private watchmen acting near the heads of the runway?  | There are not | there are, with fixed points OR frequent patrols                                 | there are, with fixed points AND frequent patrols           | 0          | 1           |
| Q2                                       | Are there public safety forces operating near the heads of the runway?   | There are not | There are, with low number of officers and random actions                        | There are, with fixed base in place                         | 5          | 1           |
| Q3                                       | Are there CCTV by monitoring the external areas near the runway heads and aircraft observation sites?  | There are not | There are, just in the vicinity of the runway heads                              | There are, all around the airport site                      | 5          | 1           |
| Q4                                       | Is there a free range around the operating perimeter?  | There is not  | There are, just in the vicinity of the runway heads                              | There are, all around the airport site                      | 3          | 1           |
| Q5                                       | Is there lighting near the runway heads?   | There is not  | -  | There is  | 5          | 1           |
| Q6                                       | Are there random patrol procedures in the vicinity of runway heads and aircraft observation sites?   | There is not  | -  | There is  | 0          | 1           |
| Q7                                       | Are there procedures for identifying, monitoring and acting in case of vehicles and people in suspicious attitude?   | There is not  | There are, but without written procedures or professional with specific training | There are, with written procedures and trained professional | 5          | 1           |
| Q8                                       | Are there security measures applicable to other locations, besides the runway heads and aircraft observation sites, which potentiate the attack with MANPAD? | There is not  | There are, but without written procedures or professional with specific training | There are, with written procedures and trained professional | 5          | 1           |
| Q9                                       | Are there specific security measures applicable at the communities and settlements in the vicinity of runway heads?  | There is not  | There are, but without written procedures or professional with specific training | There are, with written procedures and trained professional | 4          | 1           |
| <b>MÉDIA (NÍVEL DE VULNERABILIDADE):</b> |  |               |  |   | <b>3,6</b> |             |

**Determination of vulnerability level through the score obtained in the questionnaire, according to the classification in paragraph 11 of Appendix 37 of Doc 8973:**

|                      |  |   |
|----------------------|--|---|
| <b>VULNERABILITY</b> | <b>HIGH</b><br>(up to 5 points)        | no mitigating measures are in general effect, either because there is no requirement or because no realistic effective measures are available |
|                      | <b>MEDIUM-HIGH</b><br>(up to 4 points) | mitigation has a limited scope and important areas and aspects of the risk are not covered by requirements or measures in general effect      |
|                      | <b>MEDIUM</b><br>(up to 3 points)      | features of both MEDIUM-HIGH and MEDIUM-LOW are present   |
|                      | <b>MEDIUM-LOW</b><br>(up to 2 points)  | mitigating measures are generally in place, but they may be immature or only partially effective  |
|                      | <b>LOW</b><br>(up to 1 point)          | clear requirements exist and mitigating measures generally regarded as effective are in widespread use  |