FIFTH SECTION

SECRETARY OF COMMUNICATIONS AND TRANSPORT

Official Mexican STANDARD NOM-069-SCT3-2010, which establishes the use of the On-Board Collision Avoidance System (ACAS) in fixed-wing aircraft operating in Mexican airspace, as well as its characteristics.

In the margin a stamp with the National Shield, which reads: United Mexican States.- Secretariat of Communications and Transportation.- 4.008/DGAC/PROY-NOM-069-SCT3-2010.

HUMBERTO TREVIÑO LANDOIS, Undersecretary of Transportation of the Ministry of Communications and Transportation and President of the National Advisory Committee for the Standardization of Air Transportation, based on articles 36 sections I and XII of the Organic Law of the Federal Public Administration; 1, 38 section II, 40 sections I, III and XVI, 41, 45, 47 sections I and IV, 73 and 74 of the Federal Law on Metrology and Standardization; 1, 4, 6 section III and final paragraph, 7 sections I, V and VI, 7 bis sections IV and VII, 17, 32, 35 and 79 of the Civil Aviation Law; 28, 33 and 80 to 82 of the Regulation of the Federal Law on Metrology and Standardization; 34 section III, 116 sections III, VIII, IX and X, 127 and 133 of the Civil Aviation Law Regulations; 2 sections III and XVI, 6 sections XIII and 21 sections XIII, XV, XXVI and XXXI of the Internal Regulations of the Ministry of Communications and Transportation, I have had the pleasure of ordering the publication in the Official Gazette of the Federation of the Official Mexican Standard NOM -069-SCT3-2010, approved by the National Advisory Committee for Air Transport Standardization on September 22, 2010 and which establishes the use of the On-Board Collision Avoidance System (ACAS) in fixed-wing aircraft operating in space Mexican airline, as well as its characteristics.

This Official Mexican Standard is published so that it enters into force after 60 days natural, counted from the date of its publication in the Official Gazette of the Federation.

OFFICIAL MEXICAN STANDARD NOM-069-SCT3-2010, WHICH ESTABLISHES THE USE OF THE AIRBORNE COLLISION AVOIDANCE (ACAS) IN FIXED-WING AIRCRAFT OPERATING IN SPACE AEREO MEXICANO, AS WELL AS ITS CHARACTERISTICS

PREFACE

The Civil Aviation Law establishes the powers of the Ministry of Communications and Transportation in civil aviation matters, among which is the issuance of Official Mexican Standards and other administrative provisions;

The Civil Aviation Law establishes that in the provision of air transport services, the necessary measures must be adopted to guarantee the maximum safety conditions of the aircraft and its operation, in order to protect the physical integrity of users and their property, as well as that of third parties, for which it attributes to the Ministry of Communications and Transport the power to require concessionaires, permit holders and air operators to comply with certain requirements, in order to maintain the indicated security levels;

The Civil Aviation Law establishes that concessionaires, permit holders and air operators, in the case of non-commercial private air transport service, the owners or holders of aircraft, must provide themselves with the necessary technical equipment for the prevention of air accidents and incidents;

The Civil Aviation Law states that civil navigation in the airspace over national territory is governed, in addition to the provisions of said law, by the treaties to which the United Mexican States is a party, being the case that Mexico is a signatory of the Convention on International Civil Aviation concluded in the city of Chicago, Illinois, United States of America in 1944, in which Annexes 6 and 10 establish the aircraft that must be equipped with an On-Board Collision Avoidance System (ACAS II);

Aeronautical operations must be strictly and timely regulated through Official Standards Mandatory application Mexican, in order to guarantee the safety of aircraft and their crew and passengers;

Having a standard that establishes the use of ACAS in fixed-wing aircraft operating in Mexican airspace, as well as its characteristics, guarantees the safety of the aircraft as well as its operation and, with it, the safety of people. avoiding irreparable or irreversible damage to them, since ACAS is an on-board system that works independently from air traffic control ground systems, and is designed to act as a backup to the see and evade technique used by pilots, helping them prevent and avoid collisions between aircraft, as well as maintaining a safe flight to prevent air accidents and incidents.

In compliance with the procedure established in the Federal Law on Metrology and Standardization (LFMN), for the issuance of Official Mexican Standards, on July 14, 2010, it was published in the Official Gazette of the Federation, the Official Mexican Standard Project PROY-NOM-069-SCT3-2010, which establishes the use of the Aircraft Collision Avoidance System (ACAS) in fixed-wing aircraft operating in Mexican airspace,

as well as its characteristics, so that in terms of articles 47 section I of the Federal Law on Metrology and Standardization and 33 of its Regulations, interested parties submit comments to the Project within a period of 60 calendar days from the date of publication of the Official Mexican Standard Project.

After this period of 60 calendar days, and in compliance with articles 47 sections II and III of the Federal Law on Metrology and Standardization and 33 of its Regulations, they were presented and evaluated by the National Advisory Committee for Air Transport Standardization, the comments to the Official Mexican Standard Project, approving the same, as well as the Official Mexican Standard, being published said response to the comments in the Official Gazette of the Federation on December 6, 2010.

In such virtue and as established in article 47 section IV of the Federal Law on Metrology and Standardization, I have had the good will to issue the Official Mexican Standard NOM-069-SCT3-2010, which establishes the use of the On-Board Collision Avoidance System (ACAS) in fixed-wing aircraft operating in Mexican airspace, as well as their characteristics.

The following participated in the elaboration of this Official Mexican Standard:

SECRETARY OF COMMUNICATIONS AND TRANSPORTATION.

General Directorate of Civil Aviation.

Navigation Services in the Mexican Air Space.

NATIONAL POLYTECHNIC INSTITUTE.

Higher School of Engineering, Mechanics and Electrical-Ticomán Unit.

ATTORNEY GENERAL OF THE REPUBLIC.

General Directorate of Air Services.

COLLEGE OF MEXICAN AERONAUTICAL ENGINEERS, AC

COLLEGE OF AVIATOR PILOTS OF MEXICO, AC

NATIONAL CHAMBER OF AIR TRANSPORTS, AC

FEDERATION OF ASSOCIATIONS OF PILOTS AND OWNERS OF AGRICULTURAL AIRCRAFT OF THE REPUBLIC MEXICAN, AC

ASSOCIATION OF AERONAUTICAL ENGINEERS, AC

NATIONAL AIRLINES, SA DE CV

AEROLITORAL, SA DE CV

AEROVIAS DE MEXICO, SA DE CV

CONCESSIONAIRE VUELA COMPAÑIA DE AVIACION, SA DE CV

AERONAUTICAL SERVICES Z, SA DE CV

TRANSPORTS AEROMAR, SA DE CV

INDEX

1. Introduction

2. Objective and field of application

3. References

4. Definitions and abbreviations

5. General provisions

6. Mid-air collision avoidance system

7. Degree of agreement with international norms and guidelines and with the Mexican norms taken as the basis for their elaboration

8. Bibliography

9. Observance of this rule

10. Conformity assessment

11. Validity

Regulatory Appendix “A” – “ACAS event reporting format”

Regulatory Appendix “B” – “Request to certify the installation of the equipment”

1. Introduction

The International Civil Aviation Organization (ICAO), through the SICASP Group (SSR IMPROVEMENTS AND COLLISION AVOIDANCE SYSTEMS PANEL) began pertinent studies for the design of an Airborne Collision Avoidance System (ACAS) that would allow operation independently of the systems of the Air Traffic Services (ATS), to avoid collisions between aircraft and also to act as a backup to the technique used by the pilots of "See and Evade", to prevent and avoid possible conflicts between aircraft. Since then, some companies dedicated to the design and manufacture of aircraft navigation equipment have undertaken the task of designing and manufacturing this system, adhering to the SICASP recommendations, and putting it to the test for its probable acceptance by the ICAO.

ACAS is an airborne system that operates independently of air traffic control ground systems, and is designed to act as a backup to the see-and-evade technique used by pilots, helping them prevent and avoid possible conflicts between aircraft equipped with SSR transponders.

ACAS II provides Traffic Advisory (TA) and Resolution Advisory (RA), recommending evasion actions in the vertical direction to avoid conflicting traffic. In addition to the azimuth and distance, it indicates the difference in altitude of the intruder aircraft in hundreds of feet.

Finally, ICAO, in amendment 22 to Annex 6 part 1 adopted on February 19, 1996, issues the standards and recommended methods for the use of ACAS, named after this Organization.

2. Objective and field of application

The purpose of this Official Mexican Standard is to establish the use of ACAS in fixed-wing aircraft at the service of concessionaires, permit holders and air operators that fly over Mexican airspace, indicating the operating procedures that must be followed with this system, as well as the criteria and specifications for its installation and operation.

3. References

There are no Official Mexican Standards or Mexican standards that are essential to consult for the application of this Official Mexican Standard.

4. Definitions and abbreviations

For the purposes of this Official Mexican Standard, the following definitions and abbreviations:

4.1. Accident: Any event that causes death or serious injury to people on board the aircraft or causes structural damage or breakage to the aircraft, or for which the aircraft disappears or is in an inaccessible place.

4.2. ACAS: Airborne Collision Avoidance System. An aircraft system based on Secondary Surveillance Radar (SSR) Transponder signals, which works autonomously from the equipment installed on the ground, to provide warning to the pilot about possible conflicts between aircraft equipped with SSR transponders.

Note 1.- In this context, the term "independently" means that ACAS works independently from the other systems used by air traffic services, except those for communications with Mode S ground stations.

Note 2.- The SSR transponders mentioned above are those that operate in Mode C or Mode S.

4.3. ACAS II: ACAS system that provides vertical resolution advisories (RA) in addition to traffic advisories (TA).

4.4. Aircraft: Any vehicle capable of autonomous transit in the airspace with people, cargo or mail.

4.5. Fixed-wing aircraft: A mechanically propelled, heavier-than-air aircraft that owes its lift in flight primarily to aerodynamic reactions exerted on surfaces that remain stationary under given conditions.

4.6. Aeronautical Authority: The Ministry of Communications and Transportation, through the Directorate General of Civil Aeronautics.

4.7. Civil aviation authority: governing authority in aeronautical matters, of a foreign country.

4.8. Resolution Advisory (RA): Indication transmitted to the flight crew, recommending:

a) A maneuver intended to provide separation from all threats, or

b) Restriction of maneuvers in order to maintain the current separation.

4.9. Traffic advisory (TA): An indication given to the flight crew that a certain intruder constitutes a possible threat.

4.10. Airworthiness Certificate: Official document certifying that the aircraft is in satisfactory technical conditions to carry out flight operations.

4.11. Concessionaire: Mexican legal entity constituted in accordance with Mexican laws, to which the Ministry of Communications and Transportation grants a concession for the operation of the regular national public air transportation service, and is for passengers, cargo, mail, or a combination. Of these, it is subject to national routes, fixed itineraries and frequencies, as well as to the registered rates and schedules authorized by the Secretariat.

4.12. FAA: Federal Aviation Administration. Civil Aviation Authority of the United States of America.

4.13. Kg.: Kilogram(s).

4.14. Evasive maneuver: Operation carried out by the flight crew of an aircraft to change its trajectory, thus avoiding a collision with another aircraft, an obstacle or the terrain.

4.15. MODE C: Transponder responses for automatic transmission of pressure altitude and surveillance purposes.

4.16. MODE S: Enhanced mode of the SSR that allows selective interrogations and responses.

4.17. ICAO: International Civil Aviation Organization.

4.18. Air Operator: The owner or possessor of a State aircraft, of those included in article 5, section II, subparagraph a) of the Civil Aviation Law, owned or used by the Federation other than military; those of state and municipal governments, and those of parastatal entities, as well as non-commercial private air transport, Mexican or foreign

4.19. Permittee: Moral or physical person, in the case of commercial private air service, national or foreign, to which the Ministry of Communications and Transport grants a permit to carry out its activities, which may be the provision of regular international air transport service. , national and international non-regular and private commercial.

4.20. Secondary Surveillance Radar (SSR): Surveillance radar system using transmitter/receiver (interrogator) and transponders.

4.21. Recommended: The recommendation of the Aeronautical Authority for the installation of the Airborne Collision Avoidance System (ACAS), for certain types of aircraft, but should not be considered as a mandatory action.

4.22. Secretary: The Secretary of Communications and Transportation.

4.23. Air traffic service (ATS): Generic expression that is applied, as the case may be, to flight information, alert, air traffic advisory and air traffic control services (the latter includes area control services, air traffic control, approach and aerodrome control).

4.24. SICASP: Secondary Surveillance Radar Improvements and Collision Avoidance System Panel. Secondary Surveillance Radar Improvements and Collision Avoidance Systems Expert Group.

4.25. Traffic Alert and Collision Avoidance System (TCAS): ACAS system based on signals from transponder equipment and operating independently of ground-based equipment. TCAS I only generates TA, and TCAS II generates TA and RA in the vertical plane.

4.26. Transponder: Emitter-receiver that generates a response signal when duly interrogated; interrogation and response are made on different frequencies.

5. General provisions

5.1. All concessionaires, permit holders and air operators that operate, in accordance with the Civil Aviation Law, with fixed-wing aircraft whose maximum certified take-off weight is greater than that indicated in this Official Mexican Standard, must equip said aircraft with an ACAS , no later than the date also indicated in this Official Mexican Standard.

5.2. This Official Mexican Standard contains the characteristics and operating procedures for be followed with ACAS, as well as the criteria and specifications for its installation and operation.

6. Mid-air collision avoidance system

6.1. Generalities.

6.1.1. All fixed-wing aircraft with a maximum certified take-off weight greater than 15,000 kg, or with a capacity of more than 30 passengers, at the service of concessionaires and permit holders, must be equipped with an ACAS II, from January 1, 2003.

6.1.2. All fixed-wing aircraft with a maximum certified take-off weight greater than 5,700 kg, or with a capacity of more than 19 passengers, at the service of concessionaires and permit holders, must be equipped with an ACAS II, from January 1, 2005.

6.1.3. It is recommended that all aircraft with a turbine engine at the service of air operators, whose maximum certified take-off weight is greater than 15,000 kg, or that have the capacity to carry more than 30 passengers, and for which a certificate has been issued. for the first time the corresponding certificate of airworthiness after November 24, 2005, are equipped with an ACAS ll.

6.1.4. All aircraft with a turbine engine at the service of air operators, whose maximum certified take-off weight is greater than 15,000 kg, or that have the capacity to carry more than 30 passengers, and for which the certificate has been issued for the first time. corresponding certificate of airworthiness after January 1, 2007, must be equipped with an ACAS ll.

6.1.5. It is recommended that all aircraft with a turbine engine at the service of air operators, whose maximum certified take-off weight is greater than 5,700 kg but does not exceed 15,000 kg, or that have the capacity to transport more than 19 passengers , and for which the corresponding certificate of airworthiness is issued for the first time after January 1, 2008, are equipped with an ACAS ll.

6.1.6. All fixed-wing, turbine-engined, passenger, or combination passenger/cargo (combi) aircraft, having a configuration of 10 to 30 passengers, serving permit holders, must be equipped with a high-speed Collision Avoidance System. Board (ACAS I).

6.1.7. All fixed-wing aircraft with turbine engines, whose maximum certified take-off weight is greater than 5,700 kg but does not exceed 15,000 kg, at the service of concessionaires and permit holders, when they carry out exclusively cargo operations, must be equipped with an ACAS I.

6.2. ACAS installation specifications.

6.2.1. ACAS equipment that is installed in fixed-wing aircraft at the service of concessionaires, permit holders and air operators due to what is specified in this Official Mexican Standard, which are not part of their Type Certificate, must comply with the specifications and installation procedures of numeral 6.2. of this Official Mexican Standard.

6.2.2. In the case of aircraft with Mexican nationality and registration marks, for the installation of ACAS equipment in fixed-wing aircraft, the technical regulations of the State of Design must be taken as a basis, as long as it is also the owner, possessor or has validated the Type Certificate of the aircraft in which said equipment is intended to be installed or installed.

6.2.3. The concessionaire, permit holder and air operator must have the brand, model and part number of the equipment, as well as the data of the aircraft in which it is intended to be installed. Likewise, it must have the engineering documentation of the ACAS installation, which must contain the following, as applicable; In addition to complying with the applicable regulations that establish the requirements that technical studies must meet for modifications or alterations that affect the original design of an aircraft:

(a) Location plans of ACAS and its components.

(b) Electrical diagrams, with their corresponding load analysis.

(c) Technical justification of the modification to be made to the aircraft (structural, if applicable, instrument panel, wiring, among others).

(d) Flight Manual Supplement.

(e) Review of the aircraft maintenance program and the General Maintenance Manual.

(f) Review of the Aircraft Minimum Equipment List.

(g) Test Guide.

(h) Review of the General Operations Manual.

6.2.4. It is the responsibility of the concessionaire, permit holder and air operator to determine the new weight and center of gravity of the aircraft after the modification, in accordance with the applicable regulations that regulate the maintenance of aircraft airworthiness.

6.2.5. For fixed-wing aircraft that, on the date of entry into force of this Official Mexican Standard, already have ACAS installed and that do not have the equipment installation certification, concessionaires, permit holders and air operators must review the documentation of installation of the equipment in accordance with what is required in this standard, as well as carry out a physical inspection of your aircraft in order to verify that it complies with what is specified in numeral 6.2.3. of this Official Mexican Standard.

6.2.6. Concessionaires, permit holders and air operators must take into consideration that on the date of entry into force of this Official Mexican Standard, the ACAS equipment required by it, may already be previously installed in their aircraft, not considered by their type certificate. , in accordance with the installation procedures of any civil aviation authority, or, for those who, complying with the corresponding regulations, intend to install them abroad, must comply with what is indicated in subsections (d) to (h) of numeral 6.2. 3. of this Official Mexican Standard.

6.2.7. Concessionaires, permit holders and Mexican air operators, who operate aircraft with nationality and registration marks other than the Mexican ones, must comply with the installation requirements established by the State of registration of the same.

6.2.8. Permit holders and foreign air operators, who operate aircraft with nationality and registration marks other than Mexican ones, must comply with the installation requirements established by the State of registration of the same.

6.2.9. It is the responsibility of the concessionaire, permit holder and air operator to ensure that, prior to their operation, the ACAS installed comply with the provisions of numeral 6.2. of this Official Mexican Standard.

6.2.10. Aircraft with a Mexican nationality mark and registration must comply with the ACAS installation certification, in accordance with the provisions of numeral 10 of this Official Mexican Standard.

6.3. Operating procedures.

6.3.1. ACAS must be operated in compliance with the requirements of the Flight Manual or the supplement to the applicable Flight Manual, which must contain the appropriate procedures for:

(a) The description and use of ACAS.

(b) The corrective actions and evasive maneuvers to be taken by the flight crew, in relation to the ACAS indications.

(c) The deactivation of ACAS, in case of abnormal and emergency conditions.

(d) The ACAS test.

(e) ACAS limitations.

(f) Explain all sources of power and data that must be available.

6.3.2. All concessionaires, permit holders and air operators must include in their General Operations Manual, the criteria for the use of ACAS, as well as the instructions and training requirements, related to the system, to avoid a collision or near collision between aircraft.

6.3.3. Procedures in the Flight Manual

6.3.3.1. For aircraft with ACAS I installed, the aircraft Flight Manual must contain appropriate procedures for:

(a) The proper use of ACAS; Y

(b) Procedures to be followed by the flight crew in order to react appropriately in response to alerts and indications given by ACAS.

6.3.3.2. A description of all associated systems that must be operational for ACAS to work correctly.

6.3.3.3. For aircraft with ACAS II installed, the aircraft flight manual must contain procedures for its proper use.

6.3.3.4. The requirements of numerals 6.3.3.1. and 6.3.3.2. above, can be met supplements to the Aircraft Flight Manual.

6.3.4. Concessionaires, permit holders and air operators are responsible for developing procedures to ensure the effective identification, tracking and monitoring of significant events related to ACAS. These procedures should focus on providing useful information for:

(a) Correctly determine the significance of ACAS events.

(b) Carry out the follow-up of the information related to specific ACAS events.

6.3.5. Concessionaires, permit holders and air operators must develop and implement a training program for flight crews, which includes:

(a) General concepts of ACAS;

(b) Flight crew response to RA and TA;

(c) Communication and coordination with ATS;

(d) ACAS components, controls, alerts and announcements, and

(e) Execution of evasive maneuvers, as applicable.

This education and training should be an integral part of the dealer's training program, permit holder and air operator.

6.3.6. The objective of ACAS is to help the pilot avoid collisions and maintain a safe flight, so he must use the ACAS indications, in accordance with what is indicated in the aircraft Flight Manual and in the General Operations Manual.

6.3.7. The flight crew of an aircraft equipped with ACAS must not initiate any evasive maneuver for the sole reason of a TA, and must maintain continuous alert through the information in ATS voice communications by radiotelephony, whenever possible.

6.3.8. Aircraft that are or are not equipped with ACAS equipment must be equipped with ATS. In particular, the procedures and/or provisions related to preventing collisions, establishing adequate separation and the information that can be provided in relation to conflicting traffic, as well as possible evasion measures, must be in accordance with the corresponding ATS, without taking into account the capacity of the aircraft that depends on the ACAS equipment.

6.3.9. When the pilot notifies ATS, through oral communications by radiotelephony, of the performance of a maneuver due to an RA, the controller must not modify the flight path of the aircraft until confirmed by the pilot in the direction that it once again complies with the terms of the current ATS instructions, but must continue transmitting traffic information, as appropriate.

6.3.10. When an aircraft deviates from the instruction given in oral communications by radiotelephony by ATS, for complying with an RA, the controller ceases to assume responsibility for maintaining the separation between said aircraft and any other aircraft affected as a direct consequence of the maneuver. RA induced. The controller again assumes the responsibility of maintaining separation for all affected aircraft when:

a) The controller, in the oral communications by radiotelephony, acknowledges receipt of a report from the flight crew, that the aircraft resumes what is indicated in the current instruction; either

b) The controller, in the oral communications by radiotelephony, acknowledges receipt of a report from the flight crew, that the aircraft resumes what is indicated in the current instruction and issues an alternative instruction that the flight crew acknowledges having received.

NOTE.- The phraseology applicable to the previous numerals is described in numeral 6.3.14.1 of the present Official Mexican Standard.

6.3.11. The objective of the ACAS indications is to help pilots to actively search for and visually acquire traffic with which it may conflict, as well as to avoid possible collisions. Pilots must use the indications generated by ACAS in accordance with the following considerations, regarding safety:

a) Pilots must not carry out any maneuver with their aircraft for the sole reason of responding to traffic announcements;
NOTE 1.- The objective of the TA is to help the visual acquisition of traffic with which it can enter into

conflict and alert pilots to the position of an RA.

NOTE 2.- The aforementioned restriction regarding the use of TAs has been incorporated due to the fact that the marking precision is limited and due to the difficulty of interpreting a change in altitude from the traffic information presented on the screen.

b) In the event that an RA alters the flight path, the search for traffic with which it may come into conflict must include visual exploration of the airspace in which the traffic in conflict can maneuver.

c) The modification of the flight path is limited to the minimum necessary to comply with the RA. **d)** Pilots who deviate from what is indicated in the Air Traffic Control instructions, to respond to an RA, must return as soon as possible, to comply with the ATS terms and instructions, once the conflict is resolved they must notify the the ATS unit, as soon as possible, the circumstances of the deviation executed, indicating in which direction it was carried out and when it ended.

6.3.12. Aircraft pilots equipped with ACAS must consider that, in order for the system to provide an RA to prevent collisions, the intruder aircraft must have a transponder activated in mode "C" or mode "S", the above in accordance with the applicable regulations, which regulate the use within the Mexican airspace of transponder equipment for aircraft, as well as the criteria for its installation, specifications and operating procedures.

6.3.13. Pilots of aircraft operating ACAS should consider that their equipment may not detect potential intruder aircraft that have their transponder disabled, or that have not currently adhered to the certification process for this equipment.

6.3.14. Phraseology:

6.3.14.1. The phraseology used to notify maneuvers in compliance with an RA is as follows.

- At the beginning of a maneuver originated by an RA, the pilot must report: After modifying the vertical speed (exchange between the pilot and the controller); “TCAS CLIMB (or DESCENT) Confirmation;

	In English “TCAS CLIMB (or DECEND) (acknowledgment);

After announcing conflict ended (exchange between pilot and controller);	
“RETURN TO (assigned instruction) (Confirmation) (or change of instructions) (acknowledgment);	RETURNING TO (assigned clearance); (or alternative instructions);

After the RA (pilot-controller exchange) has been completed;	
“TCAS CLIMB (or DESCENT) RETURN TO clearance); (Confirmation) (or change of instructions) (acknowledgment);	TCAS CLIMB (or DESCENT) RETURNING TO (assigned (or alternative instructions);

After resuming the previous instruction after responding to the RA (pilot-controller exchange);	
“TCAS CLIMB (or DESCENT) COMPLETED, RESUMED (instruction assigned) (Confirmation) (or change of instructions) (acknowledgment);	TCAS CLIMB (or DESCENT) COMPLETED; RESUMED (assigned clearance); (or alternative instructions);

When it is impossible to carry out an instruction due to an RA (pilot-controller exchange);	
“IMPOSSIBLE, RATCAS; (Confirmation)	UNABLE, TCAS RA; (acknowledgment)

6.3.15. responsibilities.

6.3.15.1. The use or not of ACAS equipment in aircraft that have it installed is unique and exclusively the sole responsibility of the pilot in command of the aircraft.

6.3.15.2. It is not the responsibility of the Air Traffic Services to separate an aircraft serving an RA from any other air traffic, nor is it their responsibility to reduce the separation that may be caused by another air traffic conflict due to compliance with said RA.

6.3.16. The flight crew of an aircraft may, under their responsibility, deviate from their position, only when strictly necessary, to take a corrective action to an RA, following the procedure indicated in numeral 6.3.17. of this Official Mexican Standard.

6.3.17. When a flight crew receives an ACAS RA, either to climb or descend from its assigned altitude, or otherwise the RA affects any ATS instruction, or any maneuver in progress, the information must be transmitted to ATS when the maneuver is initiated. of evasion, or as soon as possible, using the following phraseology:

"Center, Identification of the corresponding ATS unit, Identification of the aircraft or airline and flight number, ACAS climb/descent".

Examples:

1. "Central Mexico, Mexicana 635, ACAS climb."

2. "Mazatlán Center, XA-JVN, ACAS descent."

When the conflict is resolved, the flight crew must notify ATS of their return to training. assigned by ATS, or to a subsequent corrected instruction, using the following phraseology:

"Center, Identification of the corresponding ATS unit, Identification of the aircraft or the airline and flight number, free of conflict, resuming/returning to assigned ATS instruction".

Example:

"Centro México, Aeroméxico 279, free of conflict, resuming/returning to ATS instruction assigned".

6.3.18. The procedures specified above do not prevent the pilot in command from deciding, based on his best judgment, and exercising full authority to take the actions he deems most convenient, in order to resolve an air traffic conflict.

6.3.19. The use of ACAS outside Mexican airspace is subject to the legislation of the country in question.

7. Degree of agreement with international standards and guidelines and with Mexican standards taken as the basis for its elaboration

7.1. This Official Mexican Standard is consistent with article 37 of the Convention on International Civil Aviation and with the standards and methods recommended in Annex 6, Part I, Chapter 6, Number 6.18., Annex 6, Part II, Chapter 2, Number 2.4. 13 and in Annex 10 Volume IV, Chapter 4, Number 4., issued by the International Civil Aviation Organization.

7.2. There are no Mexican standards that have served as the basis for its elaboration, since at the moment There are no published regulatory precedents in this regard.

8. Bibliography

8.1. International Civil Aviation Organization, Document 7300 - Convention on International Civil Aviation, [online], 1944, Chicago, United States of America, Ninth Edition – 2006, [cited 02-09-2010], Available on the Internet: http:/ / www.icao.int.

8.2. International Civil Aviation Organization, Document 4444 – Air Traffic Management, [online], Chicago, United States of America, Fifteenth Edition – 2007, [cited 02-09-2010], Available on the Internet: http://www. icao.int.

8.3. International Civil Aviation Organization, Document 8168 – Aircraft Operation, [online], Chicago, United States of America, Eighth Edition – 2000, [cited 02-09-2010], Available on the Internet: http://www.icao .int.

8.4. International Civil Aviation Organization, Document 9863 – Aircraft Collision Avoidance System (ACAS) Manual, [online], Chicago, United States of America, First Edition – 2006, [cited 02-09-2010], Available on the Internet : http://www.icao.int.

8.5. International Civil Aviation Organization, Annex 6, Part I, to the Convention on International Civil Aviation, December 10, 1948, Chicago, United States of America, Amendment 33-A, Eighth Edition – July 2001, [cited 02-09-2010], Convention on International Civil Aviation.

8.6. International Civil Aviation Organization, Annex 6, Part II, to the Convention on International Civil Aviation, December 2, 1968, Chicago, United States of America, Amendment 28, Seventh Edition – July 2008, [cited 02-09-2010], Convention on International Civil Aviation.

8.7. International Civil Aviation Organization, Annex 10, Volume IV, to the Convention on International Civil Aviation, May 30, 1949, Chicago, United States of America, Amendment 84, Fourth Edition – July 2007, [cited 02-09-2010], Convention on International Civil Aviation.

8.8. Federal Aviation Administration of the United States of America, Part 121 “Operating requirements: Domestic, flag, and supplemental operations”, [online], 1958, United States of America, Edition – 2009, [cited 02-09-2010] , Title 14 “Aeronautics and Space” of the Code of Federal Regulations of the United States of America, available on the Internet: http://www.faa.gov.

8.9. Federal Aviation Administration of the United States of America, Part 135 “Operating requirements: Commuter and on demand operations and rules governing persons on board such aircraft”, [online], 1978, United States of America, Edition – 2009, [cited 02-09-2010], Title 14 “Aeronautics and Space” of the Code of Federal Regulations of the United States of America, available on the Internet: http:// www.faa.gov.

8.10. United States Federal Aviation Administration, TSO-C112 “Air Traffic Control Radar Beacon System/Mode Select (ATCRBS/Mode S) Airborne Equipment”, [online], United States of America, Revision February 5, 1986 , [cited 02-09-2010], available on the Internet: http:// www.faa.gov .

8.11. Federal Aviation Administration of the United States of America, TSO-C119c “Trafic Alert and Collision Avoidance System (TCAS) Airborne Equipment, TCAS II with optional hybrid surveillance”, [online], United States of America, Revision April 14, 2009, [cited 09-02-2010], available on the Internet: http://www.faa.gov.

9. Observance of this rule

9.1. The monitoring of compliance with this Official Mexican Standard corresponds to the Authority Aeronautics.

10. Conformity assessment

10.1. It is the authority of the Aeronautical Authority to verify compliance with the regulatory administrative provisions, both national and international, that guarantee the operational safety of civil aircraft, as well as its authority to verify that the specifications and technical procedures of this Standard are complied with. Mexican Official, which establishes the use of ACAS in fixed-wing aircraft operating in Mexican airspace, as well as its characteristics.

10.2. They will be subject to conformity assessment, through ACAS certification, supervision of ACAS installation in aircraft, evaluation of their characteristics and acceptance of the procedures implemented for maintenance and operation, as well as observation. physical equipment and its operation, concessionaires, permit holders and air transport operators operating in Mexican airspace.

10.3. ACAS certification applications must comply with the following:

10.3.1. The request must be prepared and submitted to the Engineering, Standards and Certification Directorate, dependent on the General Directorate of Civil Aeronautics, the request in free writing indicating the name, denomination or company name of who or who promote, in his case of his legal representative, address to receive notifications, as well as the name of the person or persons empowered to receive them, the request that is made, the facts or reasons that give rise to the request, the administrative body to which they are addressed and the place and date of their issuance. The document must be signed by the interested party or his legal representative, unless he does not know or cannot sign, in which case, his fingerprint must be printed. Likewise, with the aforementioned document, the documentation listed below must be attached, and the Aeronautical Authority must be informed of its willingness to be evaluated within the provisions of this standard:

a) Power of attorney(s) of the legal representative(s) (1 original or 1 certified copy).

b) The ACAS installation engineering documentation referred to in numeral 6.2.3. of the present Official Mexican Standard.

Once the complete application has been received, the Aeronautical Authority must resolve the application within the term established in the following numeral in order to carry out the verification and evaluation of conformity with compliance with this Official Mexican Standard.

10.4. Response time:

Three months counted from the date on which the duly integrated application was submitted.

If at the end of the maximum response period, the Authority has not responded, it will be understood that the request was resolved negatively to the petitioner.

Legal basis: Article 17, Federal Law of Administrative Procedure.

The Authority has a maximum period of 30 calendar days from the date of submission of the application to request the missing information from the petitioner.

10.5. Operating procedures.

10.5.1. ACAS must be operated in compliance with the requirements of the Flight Manual or the applicable Flight Manual supplement, in accordance with article 109, section IV of the Civil Aviation Law Regulations.

10.5.2. Concessionaires, permit holders and air operators are responsible for developing procedures to ensure the effective identification, tracking and monitoring of significant events related to ACAS. These procedures should focus on containing useful information to keep the Aeronautical Authority and the State of Design of ACAS aware of said events, about its operation in national and international airspace, through its use by pilots, of the ACAS event reporting forms, which are additional to the entries in the logbook, and under their responsibility and that of the concessionaires, permit holders and air operators. The preparation of these forms, whose format must be used, is shown in the Regulatory Appendix "A" of this Official Mexican Standard, is the responsibility of the concessionaires, permit holders and air operators, as well as the pilots involved in said events. Concessionaires, permit holders and air operators may use a format other than Regulatory Appendix “A”, as long as it provides information equivalent to that indicated in Regulatory Appendix “A”.

10.5.3. To comply with the provisions of section 10.2. of this standard, the concessionaire, permit holder, and air operator must have the corresponding information, mentioned in the application to certify the installation of the equipment, described in Regulatory Appendix “B” of this Official Mexican Standard.

11. Validity

11.1. This Official Mexican Standard will enter into force 60 calendar days after its publication in the Official Gazette of the Federation.

Mexico, DF, January 20, 2011.- The Undersecretary of Transportation of the Ministry of Communications and Transportation and President of the National Advisory Committee for Standardization of Air Transportation, **Humberto Treviño Landois.- Signature .**

REGULATORY APPENDIX "A"

Company logo (one) **ACAS EVENTS REPORT FORMAT**

Name: (2) Phone: (3) Fax: (4)

Date and time of the event: (5) Airline/Number of flight: (6) Source: (7)

Flight phase: (8) Serving: ATS request: (9) RA: (10) Other: (eleven)

AT data: Relative altitude of the intruder: (12) Feet. Position: (13) hrs.

Our aircraft: Altitude: (14) Feet. Position: (fifteen) (16) // (17)
(VOR) (Radial) (DME)

RA data: Relative altitude of the intruder: (18) Feet. Position: (19) hrs.

Type of RA issued: (20) RA performed: (twenty-one) Indicated by ACAS. (22) A different one.

During the conflict, indicate the sequence in which the events mentioned below occurred:

(For example: First event = 1, Second event = 2, etc.)

ATS notification: (23) TA: (24) RA: (25) Eye contact: (26)

Illustrate the sequence of conflict events in the following table, using the codes indicated for the sequence of said event:

Position of each event

TA = Traffic notice.

AR = Resolution effected.

V = Eye contact.

C = Release of conflict.

(27)

Note: The size of this table may be adjusted to provide space for additional questions in the format for those concessionaires, permit holders and air operators who wish to obtain additional data in the ACAS event report.

RA Rating: Was it appropriate for the situation? YES NO (28) Was she executed? YES NO (29)

Was it necessary for the situation? YES NO (30) Was it different from the instructions? YES NO (31)

Did it cause a deviation from ATS instructions? YES NO (32)

If the answer is affirmative, what was the deviation? (33)

Meteorological conditions: IMC VMC DAY NIGHT (34) Landing Gear Position: Up down Flaps__: (35)

Notes: Indicate the information on the brand and model of your ACAS equipment, as well as comments that are considered important for this or any previous ACAS event, including issues such as: use of the TA function only, differences with ATS instructions, ACAS procedures , ATS procedures (for example: noise abatement, among others), symbols used by the team on the ACAS screen, workload in the flight crew cabin, etc.

(36)

ACAS EVENT REPORT FORMAT

(INSTRUCTIONS FOR FILLING AND SUBMISSION)

a) General considerations for filling out the ACAS event report format.

The form must be filled out on a typewriter or by hand in legible print.

Use ink, preferably black.

Deletions or amendments are not allowed.

It must be filled out in its entirety, otherwise it will not be received, considering the following filling guide:

Box 1: Place the logo of the company that fills out the ACAS event report format.

Box 2: Clearly write down the name of the company.

Box 3: Clearly write down the company telephone number.

Box 4: Clearly write down the company fax.

Box 5: Clearly note the date and time the ACAS event occurred.

Box 6: Clearly write down the airline and flight number involved in the ACAS event.

Box 7: Write down the origin of said flight.

Box 8: Record the flight phase in which the ACAS event occurred.

Box 9: Write down if the ACAS event was due to an ATS being attended.

Box 10: Write down if the ACAS event was due to the treatment of an RA.

Box 11: Write down if the ACAS event was due to the response of another type of notice.

Box 12: Record the relative altitude of the intruder in feet.

Box 13: Record the position of the intruder in hours.

Box 14: Enter the altitude of the company aircraft in feet.

Box 15: Record the position with respect to the VOR.

Box 16: Write down the position with respect to the Radial.

Box 17: Write down the position with respect to the DME.

Box 18: Record the RA data for the relative altitude of the intruder in feet.

Box 19: Enter the RA data for the position of the intruder in hours.

Box 20: Enter the type of RA issued by your aircraft.

Box 21: Write down the type of RA carried out by your aircraft.

Box 22: Record if a different action was taken.

Box 23: Record the ATS notification.

Box 24: Write down the notification of the TA.

Box 25: Record the notification of the RA.

Box 26: Write down the type of eye contact.

Box 27: Illustrate the sequence of events of the conflict in the table, using the codes that are indicate for the sequence of said event.

Box 28: Indicate if the rating of the RA was appropriate for the situation.

Box 29: Indicate if the RA rating was executed.

Box 30: Indicate if the qualification of the RA was necessary for the situation.

Box 31: Indicate if the RA rating was different from the instructions.

Box 32: Indicate if the rating of the RA caused a deviation from the ATS instructions.

Box 33: If the answer to box 32 is affirmative, indicate the type of deviation.

Box 34: Indicate the weather conditions.

Box 35: Indicate the position of the landing gear and the flaps.

Box 36: Indicate the information on the brand and model of your ACAS equipment, as well as comments that are considered important for this or any previous ACAS event, including issues such as: use of the TA function only, differences with ATS instructions, procedures ACAS, ATS procedures (for example: noise abatement, among others), symbols used by the equipment on the ACAS screen, workload in the flight crew cabin, etc.

b) Report submission windows: Deputy General

Directorate of Aviation of the General Directorate of Civil Aeronautics.

Providencia Street 807, 3rd. floor, Col.

Del Valle, CP 03100, Mexico, DF

Office hours: From 9:00 a.m. to 2:00 p.m., Monday through Friday **c) Legal-**

administrative basis of the procedure: Conformity assessment procedure

indicated in numeral 10.5.2. of this Standard
Official Mexican NOM-069-SCT3-2010, in force.

d) Attached documents: When

an ACAS event occurs, the corresponding report must be prepared and submitted to the Engineering, Standards and Certification Directorate, under the General Directorate of Civil Aeronautics, by means of the format and a free letter indicating the name, name or company name of the person or persons who promote, where appropriate their legal representative, address to receive notifications, as well as the name of the person or persons empowered to receive them, the request that is made, the facts or reasons that give rise to the request, the administrative body to which they are addressed and the place and date of their issuance. The document must be signed by the interested party or his legal representative, unless he does not know or cannot sign, in which case, his fingerprint must be printed. Likewise, with the aforementioned document, the documentation listed below must be attached, and the Aeronautical Authority must be informed of its willingness to be evaluated within the provisions of this standard:

i) Power of attorney(s) of the legal representative(s) (1 original or 1 certified copy). **ii)** ACAS event report

duly filled out. **e) Response time:** Response time 3 months.

Following calendar days, counted from the one in which the application was submitted.

Legal basis: Article 17, Federal Law of Administrative Procedure.

If at the end of the maximum response period, the authority has not responded, it will be understood that the request was resolved in the negative.

The authority has a maximum period of 30 calendar days to request the missing information from the individual.

f) Telephone number and email for inquiries:

Ministry of Communications and Transportation
General Directorate of Civil Aviation

Engineering, Standards and Certification Address Calle

Providencia 807, 3rd. floor, Col. Del Valle, Mexico, DF

Office hours: 9:00 a.m. to 2:00 p.m., Monday through Friday Telephone numbers:

50 11 64 08 and 55 23 62 75 Email: acanogal@sct.gob.mx. **g) Telephone**

number for complaints: In case you have a problem in the attention to your

procedure, you can present your complaint or complaint at:

Internal control organ

Xola s/n, 1st floor, Body "A", West wing
Cologne: Narvarte

Postal code: 03028, Mexico, Federal District Telephone(s):

55192931 Opening hours for the public: from 9:00 a.m. to

3:00 p.m. Monday through Friday.
From 5:00 p.m. to 6:00 p.m. Monday through Friday.

Public Function Secretary

SACTEL

In the Federal District: 1454-2000

Inside the Republic: 01 800 112 05 84
From the United States: 1 800 475-2393

Email: sactel@funcionpublica.gob.mx, quejas@funcionpublica.gob.mx

REGULATORY APPENDIX "B"

APPLICATION TO CERTIFY THE EQUIPMENT INSTALLATION

DATE: __(1)___OF_____(2)___ ___OF 20_(3)__ ___

INSTALLATION TO CERTIFY (4)

ELT	XPDR	GPWS	ACAS/TCAS
CVR	fdr	HF	VHF
GPS	OTHER	SPECIFY: (5)_____	

TEAM INFORMATION:

BRAND: (6)_ ___

MODEL: (7) ___

PART NUMBER: (8)_ ___

SERIAL NUMBER: (9)___ ___

AIRCRAFT INFORMATION:

BRAND: (10)____ MODEL: (11) ___

REGISTRATION: (12)

SERIAL NUMBER: (13) ___

NATIONALITY: _(14)

DOCUMENTATION SUBMITTED IN SINGLE COPY (15)

MANUFACTURER LIST FAA FORM 337 DGAC FORM 46

OTHER SPECIFY: __(16)___ ___

HOLDER INFORMATION:

NATURAL PERSON (17) LEGAL PERSON (18)

HOLDER'S NAME / FULL COMPANY NAME:

(19)

ADDRESS: (20)___

CITY: (21) ___ STATE: (22)___ ZIP CODE: (23) ___

PHONE: (24)_ ___ EMAIL: (25)_____ ___

SERVICE FOR WHICH IT IS DESTINED: (26)

AIR TAXI	COMMERCIAL	FREIGHTER
PRIVATE	GOVERNMENTAL	OTHER

SPECIFY: (27)___ ___

_____(28)___

NAME AND SIGNATURE OF THE PROMOVANT

Note: An application must be completed for each equipment installation that is certified

APPLICATION TO CERTIFY THE EQUIPMENT INSTALLATION

(INSTRUCTIONS FOR FILLING AND SUBMISSION)

a) General considerations for filling out the application to certify the installation of the equipment: The application must be filled out in a typewriter or by hand with legible print letters.

Use ink, preferably black.
Deletions or amendments are not allowed.

Copies of the application are available at the filing window of the procedure.

It must be presented in original.

It must be filled out in its entirety, otherwise it will not be received, considering the following filling guide:

Box 1: Clearly write down the day of the month on which the request is made.

Box 2: Clearly write down the month in which the request is made.

Box 3: Clearly write down the year in which the request is made.

Box 4: Indicate with an "X" inside the box, the option of the equipment that you want to certify your installation.

Box 5: If the “other” option in box 4 has been selected, the equipment must be described different from those shown in the format.

Box 6: Clearly write down the brand of the equipment that was installed.

Box 7: Clearly write down the model of the equipment that was installed.

Box 8: Clearly write down the part number of the equipment that was installed.

Box 9: Write down clearly and for the only occasion the serial number of the equipment that was installed, in case of don't have the part number.

Box 10: Clearly write down the make of the aircraft in which the equipment was installed.

Box 11: Clearly write down the model of the aircraft in which the equipment was installed.

Box 12: Clearly write down the registration of the aircraft in which the equipment was installed, if there is no assigned registration, write down the legend "registration in process of assignment".

Box 13: Clearly write down the serial number of the aircraft in which the equipment was installed.

Box 14: Clearly write down the nationality of the aircraft in which the equipment was installed.

Box 15: Indicate with an "X" inside the box, the option of the documentation that you present in simple copy to endorse the certification of the installation of the equipment.

Box 16: If the "other" option in box 15 has been selected, describe what the Documentation presented to support the certification of the installation of the equipment.

Box 17: Indicate with an "X" inside the box, if the holder is a natural person.

Box 18: Indicate with an "X" inside the box, if the holder is a legal person.

Box 19: Clearly write down the full name or business name of the holder.

Box 20: Clearly write down the full address of the holder.

Box 21: Clearly write down the City.

Box 22: Clearly write down the State.

Box 23: Write clearly the Postal Code.

Box 24: Clearly write down the holder's telephone number.

Box 25: Clearly write down the email address of the holder.

Box 26: Indicate with an "X" inside the box, the option of the service for which the request is intended. aircraft.

Box 27: If the "other" option in box 26 has been selected, describe what the service for which the aircraft is intended.

Box 28: Indicate the full name of the petitioner of the procedure, as well as its signature. **b) Windows for submitting the procedure:** Deputy General Directorate of Aviation of the General Directorate of Civil Aeronautics.

Providencia Street 807, 3rd. floor,

Col. Del Valle, CP 03100, Mexico, DF

Hours of operation: From 9:00 a.m. to 2:00 p.m., Monday through Friday.

c) Legal-administrative basis of the procedure: Conformity

assessment procedure indicated in numeral 10.5.3. of this Standard Official Mexican NOM-069-SCT3-2010, in force.

d) Attached documents: i) The

request must be prepared and submitted to the Engineering, Standards and Certification Directorate, under the General Directorate of Civil Aeronautics, the request in free writing indicating the name, denomination or company name of who or who promote, in your case of your legal representative, address to receive notifications, as well as the name of the person or persons authorized to receive them, the request that is made, the facts or reasons that give rise to the request, the administrative body to which they are directed and place and date of issue. The document must be signed by the interested party or his legal representative, unless he does not know or cannot sign, in which case, his fingerprint must be printed. Likewise, with the aforementioned document, the documentation listed below must be attached, and the Aeronautical Authority must be informed of its willingness to be evaluated within the provisions of this standard:

ii) Power of attorney(s) of the legal representative(s) (1 original or 1 certified copy).

iii) Copy of the corresponding document that supports the installation of the ACAS equipment in the aircraft, which is listed in box 25 of the format to certify the installation of the equipment as the case may be. **e) Response time:**

Response time 3 months.

Following calendar days, counted from the one in which the application was submitted.

Legal basis: Article 17, Federal Law of Administrative Procedure.

If at the end of the maximum response period, the authority has not responded, it will be understood that the request was resolved in the negative.

The authority has a maximum period of 30 calendar days to request the missing information from the individual.

f) Telephone number and email for inquiries about the procedure:

Ministry of Communications and Transportation
General Directorate of Civil Aviation

Engineering, Standards and Certification Address Calle

Providencia 807, 3rd. floor, Col. Del Valle, Mexico, DF

Hours of operation: 9:00 a.m. to 2:00 p.m., Monday through Friday

Telephones: 50 11 64 08 and fax 55 23 62 75 Email:

acanogal@sct.gob.mx **g) Telephone number for**

complaints:

In case you have a problem in the attention to your procedure, you can present your complaint or complaint at:

Internal control organ

Xola s/n, 1st floor, Body "A", West wing
Cologne: Narvarte

Postal code: 03028, Mexico, District, Federal Telephone(s):

55192931 Opening hours for the public: From 9:00 a.m. to

3:00 p.m. Monday through Friday.

From 5:00 p.m. to 6:00 p.m., Monday through Friday.

Public Function Secretary

SACTEL

In the Federal District: 1454-2000

Inside the Republic: 01 800 112 05 84
From the United States: 1 800 475-2393

Email: sactel@funcionpublica.gob.mx, quejas@funcionpublica.gob.mx

---