T.C.
ULAŞTIRMA BAKANLIĞI
Sivil Havacılık Genel Müdürlüğü

SAYI : B.11.1.SHG.0.14.03.00/159-986 25.01/2011
KONU : Operasyon Direktifi

Genel Müdürlüğümüz tarafından 14.12.2009 tarihinde yayınlanan Operasyon Direktifleri Talimatı (SHT-OD) kapsamında hazırlanan TCAS/ACAS Kullanımına İlişkin Operasyonel Politika ve Usuller konulu Operasyon Direktifi, Ek'te yer almakta olup, İşletme El Kitaplarının söz konusu OD kapsamında revize edilerek, işletme personeline konuya ilişkin bilgilendirme yapılması ile uygulamalar hakkında Genel Müdürlüğümüze ivedi bilgi verilmesi hususunda gereğini önemle rica ederim.

Haydar YALÇIN
Genel Müdür V.

EKLER:
Operasyon Direktifi(1 adet-3 sayfa)

DAĞITIM:
-GEREĞİ:

-Tüm Hava Taşıma İşletmelerine

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	Sivil Havacılık Genel Müdürlüğü Operasyon Direktifi		SHGM- OD No: 01/2011 Tarih: 25.01.2011
	Dağıtım	- Tüm Hava Taşıma İşletmelerine - Uçuş Operasyon Denetçilerine	

KONU	TCAS/ACAS kullanımına ilişkin politika ve usuller

1. **Amaç:** 14.12.2009 tarih ve 16620 sayılı Operasyon Direktifleri Talimatı kapsamında hava taşıma işletmelerinde operasyonel ACAS kullanımına ilişkin bilgilendirme yapmaktır.

2. **Kapsam:** ACAS cihazı bulundurma zorunluluğu olan hava araçlarını işleten tüm işletmeler

3. **ACAS:** İşletme El Kitabı Bölüm A 8.3.6 TCAS/ACAS kullanımına ilişkin politika ve usuller başlığı altında yer alan prosedürlerin bazı işletmeler tarafından hatalı yada eksik olarak tanımlandığı tespit edilmiştir.

   Bu kapsamda tüm işletmeler tarafından ICAO Doküman 9863' ün 5.2.1.2, 5.2.1.3, 5.1.2.4, 5.2.1.5, 5.1.2.6 ve 5.2.1.7 bölümlerine göre işletme el kitaplarının kontrol edilerek; ivedilikle güncellenmesi, ilgili personelin konuya ilişkin bilgilendirilmesi ve revize edilen İşletme El Kitaplarının onay için Genel Müdürlüğümüze gönderilmesi gereklidir.

   (Ek'te ICAO Doküman 9863'ün ilgili sayfaları yer almaktadır.)

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Chapter 5

OPERATIONAL USE AND PILOT TRAINING GUIDELINES

5.1 GENERAL

For the system to achieve its designed safety benefits, flight crews must operate the system and respond to ACAS alerts in a manner compatible with the system design. Many ACAS alerts will involve more than one ACAS-equipped aircraft. In these coordinated encounters, it is essential that each flight crew respond in a predictable manner. The issues discussed in this section form the basis for the Pilot Training Guidelines that follow in the Section 5.3. The guidelines define the knowledge of the system and its operation that should be included in pilot training programmes and include information on system performance, proper use of ACAS controls, and proper responses to ACAS alerts. The guidelines require both academic training and manoeuvre training conducted in either aircraft simulators or other computer-based trainers. Flight crews must be tested to ensure they are wholly familiar with ACAS procedures, capabilities and limitations and are able to respond correctly to ACAS indications. Moreover, regularly scheduled recurrent training sessions shall include ACAS training. The remainder of the chapter includes findings from a review of existing pilot training programmes, examples of ACAS events in which an improper response to an RA resulted in a decrease in separation with the intruder aircraft, and a description of the procedure for reporting ACAS events to air traffic control units.

5.2 ACAS OPERATIONAL USE

5.2.1 ACAS indications are intended to assist pilots in the avoidance of potential collisions and the active search for, and visual acquisition of, conflicting traffic. For ACAS to work as designed, immediate and correct crew response to ACAS advisories is essential. Delayed flight crew response to an RA or reluctance to manoeuvre the aircraft in response to an RA for whatever reason can significantly decrease or negate the protection afforded by ACAS. Therefore, there should be a clear understanding among the flight crew of their respective responsibilities when an ACAS advisory occurs. Flight crews are expected to respond to ACAS indications in accordance with the following guidelines.

5.2.1.1 Respond to TAs by attempting to establish visual contact with the intruder aircraft and other aircraft that may be in the vicinity. Coordinate to the degree possible with other crew members to assist in searching for traffic. Do not deviate from an assigned clearance based only on TA information. For any traffic that is acquired visually, continue to maintain safe separation in accordance with current regulations and good operating practices. Pilots should not make horizontal manoeuvres based solely on information shown on the traffic display. Slight adjustments in vertical speed while climbing or descending, or slight adjustments in airspeed while still complying with the ATC clearance are acceptable.

5.2.1.2 When an RA occurs, the PF (Pilot Flying) should respond immediately by looking at the RA displays and manoeuvring as indicated, unless doing so would jeopardize the safe operation of the flight. *The pilot's instinctive reaction should always be to respond to RAs in the direction and to the degree displayed, without delay.*

5.2.1.3 If a decision is made not to respond to an RA, the flight crew negates the safety benefits provided by its own ACAS. A decision to not respond also decreases the safety benefits to all other aircraft involved in the encounter.

5.2.1.4 Manoeuvres, or lack of manoeuvres, that result in a vertical speed opposite to the sense of the RA could result in a collision with the threat aircraft.

5.2.1.5 The threat may also be equipped with ACAS, and it may manoeuvre in an unexpected direction while responding to a complementary RA that has been coordinated with own aircraft's ACAS.

5.2.1.6 Traffic acquired visually may not be the traffic causing the RA, or it may not be the only aircraft to which ACAS is responding.

5.2.1.7 Visual perception of the encounter may be misleading. It is difficult to visually determine the vertical displacement of other aircraft especially when ground reference information is unreliable or at cruise altitudes where the earth's horizon is obscured.

5.2.1.8 Respond to RAs by disconnecting the autopilot and by using prompt, smooth control inputs; manoeuvre in the direction and with the vertical rate ACAS requires. To achieve the required vertical rate (normally 1 500 ft per minute) on aircraft where the RA is displayed on a vertical speed indicator (VSI), it is recommended that the aircraft's pitch be changed using the guidelines shown in the table below. Referring to the VSI or vertical speed tape, make any further pitch adjustments necessary to place the vertical speed in the green area.

SPEED	PITCH ADJUSTMENT
.80 MACH	2 degrees
250 KIAS below 10 000 ft	4 degrees
APPROACH below 200 KIAS	5 to 7 degrees

5.2.1.8.1 On aircraft with pitch guidance for ACAS RA displays, follow the RA pitch command for initial, increase and weakening RAs.

5.2.1.9 For ACAS to provide safe vertical separation, the PF is expected to initiate the appropriate RA manoeuvre within 5 seconds of when the RA is first displayed. Deviations from assigned altitude, when responding to an RA, typically will be no more than 300 to 500 ft. RA manoeuvres should use vertical speeds within the green areas, or the indicated pitch angle, and avoid red areas on vertical speed indicators or tapes, or outlined pitch avoidance areas.

5.2.1.10 The PNF (Pilot Not Flying) should provide updates on the traffic location and monitor the response to the RA. Proper crew resource management should be applied.

5.2.1.11 Respond immediately to any "increase" or "reversal" RA. Initiation of the increase or reversal RA manoeuvre is expected within 2-1/2 seconds after issuance of the advisory. Again, fly to the green area or indicated pitch angle and avoid red areas or outlined pitch avoidance areas.

5.2.1.12 If an RA is weakened, such as a "climb" RA weakened to a "do not descend" RA, respond to the weakening RA by adjusting the aircraft's vertical speed or pitch angle as required by the RA display.