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REPUBLIC OF COSTA RICA  
CIVIL AVIATION DIRECTION GENERAL  
Air Navigation Management  
AIS/MAP  
P.O. BOX 5026 -1000  
SAN JOSE – COSTA RICA

*AIC*  
Series A

11/A11  
December 15

## ATM

### WIND SHEAR NOTIFICATION BY CREW, AIR TRAFFIC AND METEOROLOGICAL SERVICES

#### 01. INTRODUCTION

The Civil Aviation Direction General, through the Air Navigation Direction, communicates: all pilots, aircrafts operators, Air Traffic Services and Meteorological Services, that because of the importance of wind shear on air operations, with the negative consequences this weather phenomenon may cause on flights safety, especially when the presence of it is in the lower layer [1 600 ft], being of special interest for aircrafts landing and departing from an aerodrome, considering that during climb and approach phases, the airspeed and altitude of aircrafts approaches to critical values, so they are especially vulnerable to the negative effects of wind shear.

On ICAO Annex 3, paragraph 5.6 refers to “Other non-routine aircraft observations” states that when aircrafts encountered weather conditions like wind shear, and which, in the opinion of the pilot-in-command, may affect the safety or markedly affect the efficiency of other aircrafts operations, the pilot-in-command shall advise the appropriate Air Traffic Services Unit (ATS) as soon as practicable.

Considering that the lack of remote-sensing equipment to detect and measure wind shear at low altitudes, the information on this phenomenon is largely based on air-reports and because these may be the only source of information, reports of wind shear by pilots is vital to ensure the safety of other aircrafts.

Therefore, the pilots operating at Costa Rica aerodromes must provide relevant information on wind shear, when safety is threatened by this weather phenomenon, in order to Air Traffic Services transmit this information to other aircrafts and their crews, so they can assess the likely impact on their aircraft.





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## 02. PROCEDURES FOR CREW'S AIRCRAFT REPORTS ON WIND SHEAR

It is important to recognize that wind shear is a dynamic phenomenon that involves a high workload in the cockpit during a very short time, so, probably the pilots can not provide detailed reports on all cases; however it is essential that crews provide relevant information on wind shear when the workload permits.

Having in mind the above conditions, reports that crews perform to the Air Traffic Services shall at least contain the following information:

- a) Description as concise as possible of the event, that includes specially the use of: “wind shear”, as well as, a subjective assessment of its intensity, using the adjectives “light”, “moderate”, “strong” and “very strong” as appropriate, or
- b) Reports based on facts in plain language (that is, the pilots own words) regarding changes on airspeed or ground speed and effects of under-shooting or overrunning or, in cases where is possible only a minimum advise, a simple report of “wind shear”;
- c) Height or band height at which wind shear has been found;
- d) Phase of flight, if is not obvious;
- e) MET and operational information detailed and appropriate, and
- f) Any other relevant information such as major changes in wind direction or speed

Based on previous guidance, below sample reports are indicated from crew about wind shear:

- a) Minimum Reports when there is no time or enough information to give further details:
  - “[call sign] A319 WIND SHEAR IN APPROACH (RWY07)” or
  - “[call sign] E190 STRONG WIND SHEAR IN APPROACH (RWY25)”, or
  - “[call sign] A340 WIND SHEAR IN APPROACH (RWY19)” or simply
  - “[call sign] WIND SHEAR” and





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- b) Other wider reports when having enough time and information:
- “[call sign] MODERATE WIND SHEAR A321 AT 150 FT IN APPROACH (RWY02) LOST 10 KT SPEED ON)” or
  - “[call sign] B737 STRONG WIND SHEAR EFFECT OF UNDER-SHOOTING BETWEEN 300 AND 600 FT TEMPORARY UNABLE TO KEEP CLIMB ON DEPARTURE (RWY07)” or
  - “[call sign] A320 STRONG WIND SHEAR IN APPROACH (RWY25) WIND 350 ° 45 KT AT 500 FT PASSING TO 230° 10 KT AT 200 FT.”

### **03. WIND SHEAR NOTIFICATION BY AIR TRAFFIC SERVICES (ATS)**

Whereas the ATS are the critical link of communications between aircrafts and between aircrafts and MET units, when receiving an air-report of "wind shear", the ATS unit will

- a) It shall forthwith transmit the report to other aircrafts involved near the airport of interest;
- b) Will include a report on broadcasting of the automatic terminal information service (ATIS) (if the workload permits), and
- c) Will transmit the report to the corresponding MET dependency (As established in the agreements between ATS and MET dependency)

The ATS unit will transmit the information on wind shear to other aircrafts and pilots in general. The information transmitted is based on the report provided by the first aircraft that report the phenomenon, the ATS will add only the necessary supplementary information as shown below:

- a) Wind shear;
- b) Type of aircraft (added if not contained in the report provided by the pilot);
- c) Description of incident (according to report received from pilot reports);
- d) Height of the encounter with wind shear (according to report received from pilot reports);
- e) Phase of flight (as pilot report received from the reporting or added if it were obvious to the controller);
- f) Runway (added if not contained in the report provided by the pilot);
- g) Time of event (it is added if is not in the report provided by the pilot) and
- h) MET and operational information (according to report received from pilot reports).

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Below is an example of how to transmit information on wind shear:

- "A320 REPORTED WIND SHEAR STRONG WIND SHEAR AT 300 FT ON APPROACH RWY01 AT 0937 NECESSARY MAX SHOVE."
- "E190 REPORTED WIND SHEAR WIND SHEAR IN APPROACH RWY25"

ATS will continue to transmit information about wind shear conditions for at least 30 minutes after the first report received or until it is confirmed, either by subsequent reports of aircrafts that such conditions are not significant for operations in the airport.

#### 04. METEOROLOGICAL SERVICE NOTIFICATION REGARDING WIND SHEAR

MET office designated to provide service to the airport will provide other ATS units and operators; information about wind shear at low altitudes.

When Met Office uses an aircraft report that has been transmitted by an ATS Unit, according to the agreements between the two offices, the MET Services shall prepare a report or confirm a previously issued report.

The report shall be transmitted without modification, as received from ATS office according to the report of the aircraft concerned, the following are examples of reports that Met Office must broadcast:

- "JUAN SANTAMARIA WS WRNG 02 201500 VALID TL 201545 MOD WS IN APCH REP AT 1455 A320 30 KT **LOSS** 2 NM FNA RWY07"
- "LIBERIA WS WRNG 01 201800 VALID TL 201845 MOD WS IN APCH REP AT 1755 A190 25 KT **GAIN** 1 NM FNA RWY19".

The Meteorological Services must cancel the wind shear warnings when ATS office informed that according to reports from arriving aircraft or departing aircraft from the airport of interest, indicates that wind shear no longer exists or after 45 minutes; if other reports are not received by the appropriate ATS. On reports made by Meteorological Services of wind shear, the terms "GAIN" or "LOSS", will mean "airspeed gain" and "airspeed loss", respectively.

