# CHAPTER - 16

# OPERATIONARETION IN WIND SHEAR AND MICROBRUST ACTIVITY

## General

1. Wind Shear and Microburst activity are particularly dangerous during the approach and take-off phase of flight and it is therefore essential that all aircrew are aware of what is meant by these terms.

## Definitions

2. a. **Wind Shear**. It is said to short when rapid and significant changes to the horizontal wind speed occur over small changes of altitude.

b. **Microburst Activity**. It is a short period event which creates very strong wind gust with large variations in direction and speed both Horizontal and vertical and particularly hazardous Microburst activity exists as a result of thunderstorm activity.

## Conditions

3. All the pilots of L 410 UVP-E20 aircraft should be aware of the geographical and meteorological conditions that can cause wind shear and microburst activity, in order that they can best cope with them:

a. Thunderstorm activity in the airfield vicinity is most likely to produce wind shear and microburst activity. The significant storms can cause this activity upto a distance of 5 NM from the airfield.

b. Frontal activity in the vicinity of an airfield can produce dangerous shear conditions; specially in the case of warm fronts. When a temperature difference of 10º C or exists across the front and its speed is 30 kts or more, there is an excellent potential for low level shear.

c. Temperature inversions may be conducive to the development of wind shear conditions.

d. The airfield location may be conducive to the development of wind shear conditions. For example, runways that are near a coast line; are near a coast line ; are in mountain valleys , have severe drop-off at one or both ends; or which are protected by the trees or buildings , have an Increased potential for shear.

## Alerts

4. The flight crew may be alerted to the possibility of shear by one of the following:

a. Pilot reports, weather received directly or through an ATC function, will alert the crew to anticipate shear. Reports which give airspeed gain / less are of greatest value.

b. Comparison of reported surface wind velocity with wind being encountered on approach, if this information is available. Doppler can be used to find out the wind on approach.

c. Visual evidence such as rain shafts from high based cumuliform clouds in the vicinity of high altitude airports; blowing dust; rings of dust ; dust divides; trees blowing in several directions ; and other ground blown Deloris.

**Recovery:**

a. Retain the control column forward drift and pull of tuck-under energetically pull the control column to effect the dive recovery.

b. Immediately reduce the flap angle to 18 deg to restore the aircraft longitudinal controllability.

c. Reduce the Engine power to flight idle.

d. Check the Ice protection system of wing and empennage whether those were on or not.

e. Go-round after recovery from dive.