ATPAC UPDATE

AREA OF CONCERN 123-5

4/19/06
SAFETY: No

SUBJECT: Clarification of LLWS versus Gust Spread

DISCUSSION:

1. A fundamental difference between LLWS and Gust Spread lies in its predictability and the expectation by the pilot. LLWS manifests itself as a predictable, abrupt gain or loss of airspeed of 20 kts or more within 2000 ft agl; but not both. It is usually encountered along a sloping frontal surface near the ground or at the top of an inversion layer. Pilots along the same glideslope separated by minutes or seconds will experience similar gains or losses in airspeeds. On the other hand, gust spread associated with windy, turbulent flow usually results in gains **and** losses of airspeed which may exceed 20 kts within 2000 ft agl. Although it feels like LLWS to the pilot; the nature of the phenomena does not allow the forecaster to tell the pilot whether to expect a gain or a loss of airspeed on final approach. Indeed, pilots along the same glideslope separated only by minutes or seconds may experience opposite effects with respect to gain and loss of airspeed just prior to landing.

2. A potentially serious problem arises in that when a pilot mistakenly reports Gust Spread as LLWS in PIREPs, it gets reported as fact to other users in the aviation and meteorological communities. When Gust Spread are reported as LLWS some aviation meteorologists feel obliged to put it into Terminal Aerodrome Forecasts (TAFs) and Area Forecasts (FA's). Thus a negative feedback loop is created making it difficult to dispose of this mis-reported and over-forecast weather phenomenon; LLWS.

3. Although Gust Spread feels like LLWS at the time of its occurrence, the pilot must be prepared to handle the unknown; **gains or losses** in airspeed just prior to landing, whereas with LLWS the pilot need only be prepared to handle one or the other (not both) on final. Thus on days where pilots report gains and losses in airspeed of 20 kts or more, Gust Spread (GS) may be an appropriate way to forecast wind speed fluctuations of plus/minus 20 kts or more within 2000 feet agl. Thus a TAF wind that reads: 24020G35KT (GS +/- 20 kt) may be a simple way to denote gains/losses of airspeed of 20 kts or more on final. The pilots know to be prepared for either condition just prior to landing. LLWS as it is currently used in TAFs and FAs is fine, but does not deter the pilots from reporting LLWS when in fact the condition does not exist.

4. Introducing the concept of Gust Spread and placing it into TAFs and FA's would help to provide a clearer picture of low level winds to meteorologists and aviators; thus enhancing flying safety at airports. Over time and with some education, pilots, and those people placing PIREPs into the dissemination system could make the distinction between

the two phenomena and give the flying community at large a better feel for tricky landing conditions at airfields nationwide.

SUGGESTED ATPAC ACTION: ATPAC review and determine the merit of this proposal.

123 – LLWS is defined by Meteorologists as predictable and measurable with weather conditions but "Gust Spreads" are not and therefore should be recognized in transmitted/published advisories regarding such events.

ATPAC found merit in this suggestion and will bring it to the attention of NCAR by a memo from the chair to the FAA.

124 – Memo from the chair has been written and ATPAC awaits a reply.

125 – Due to insufficient time for the appropriate discussions this AOC will be further deferred until 126.

126 – Wilson will write the proponent requesting further information.

127 – This AOC is deferred awaiting a response from the proponent.

128 – A letter was written to the proponent with no response received**.** Ben Grimes will contact a specialist in weather to obtain information on the validity of this AOC.

129 – This issue was dropped by a clerical error and will be reinstituted for resolution.

130 – The committee determined that lack of response from the proponent and the AOC lacked evidence to proceed as a systemic issue.

CURRENT STATUS: ACTION COMPLETE

RECOMMENDATION: NONE.

IOU: N/A.