Reanalysis on Weather Situations of the Ultralight Aircraft Incident on 7 January 2021 after the Issuing of TTSB Occurrence Investigation Report and Suggested Promotion through Public and Private Collaboration

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The 2021 study on the ultralight aircraft incident on 7 January 2021 tried to organize a mesonet array of six weather stations in spacing of 6~18km, including hourly data collected by five CWB weather stations plus the METAR data of Pingtung AFB. The preliminary findings illustrated that the SW flow between 850hPa and 700hPa levels brought abundant moisture air inland over the south Taiwan area. The visibility reduced from 4000m to 3200m before the takeoff with light rain as well as scattered clouds in altitude of 600ft and overcast in altitude of 1600ft at 1400TST. Also, the persistent light rain and scattered low clouds over the complex hillside area might reduce the visibility sharply. After the release of the Occurrence Investigation Report by TTSB on 10 Dec 2021, it confirms that the estimated visibility at plane takeoff was about 1000m, accompanying with persistent drizzle/light rain. According to the operational manual, the plane may only be operated under VMC (visual meteorological conditions) in cloud ceiling 1500ft and visibility 5000m. Therefore, the conclusions between the previous study and the TTSB report are quite consistent, implying that the real-time meteorological services are significant to light aviation businesses.

Upon completion of this reanalysis, the promotion of additional applications of weather and climate-related data (supply side) is necessary in order to offer the reliable meteorological services on time (demand side). Therefore, the newly-born TCSP (Taiwan Climate Services Partnership) will play a key role to build up an industry-academia-government collaborative organization as soon as possible.

Keywords:ultralight aircraft incident, mesonet array, meteorological services, TCSP