

AO-2011-120: VH-MST and VH-ULZ, Aircraft proximity event

Date and time:	25 September 2011, 1400 EST	
Location:	5nm West of Toowoomba	
Occurrence category:	Incident	
Occurrence type:	Airprox	
Aircraft registration:	VH-MST and VH-ULZ	
Aircraft manufacturer and model:	VH-MST: Cessna Aircraft Company C-182P VH-ULZ: Schempp-Hirth Ventus-2c	
Type of operation:	VH-MST: Private VH-ULZ: Gliding Competition	
Persons on board:	VH-MST: Crew –1 Passengers - 3 VH-ULZ: Crew - 1 Passengers - Nil	
Injuries:	Crew – Nil Passengers – Nil	
Damage to aircraft:	Nil	

FACTUAL INFORMATION

On 25 September 2011, a Cessna Aircraft Company 182P, registered VH-MST (MST), departed Roma airport, Queensland (Qld), on a private flight. On board the aircraft were the pilot and three passengers. The pilot planned a direct track from Roma to Toowoomba at 9,500 ft above mean sea level (AMSL).

On the same day, a Schempp-Hirth Ventus 2c glider, registered VH-ULZ (ULZ), departed Warwick aerodrome, competing in the Queensland State Soaring Championships. The course for that day's race took in the turning points of Warwick, Maryvale, Jimbour and Cecil Planes before returning to Warwick. At the time of the incident, the pilot of ULZ was on the Maryvale to Jimbour leg of the course. The pilot stated that tracking via thermals on the day took ULZ "very close to Toowoomba."

At approximately 1400 Eastern Standard Time¹ (EST), at a position 5NM west of Toowoomba and a height of 4,000 ft above mean sea level (AMSL), the pilot of MST noticed glider ULZ, between 300 m and 500 m directly in front of MST at the same level and heading towards

MST. The pilot of MST commenced an evasive descending turn to the left to avoid ULZ.

It was estimated the distance between the two aircraft came close to 100 m horizontally at the same level.

Pilot of VH-MST recollection of events

The pilot stated that he obtained the NOTAMs² for the area earlier that day and noted that:

- the Oakey airspace was deactivated,
- a NOTAM was current for the area for a gliding event involving up to 40 gliders between Warwick/Kingaroy/Roma and Goondiwindi from surface to 10,000 ft.

The pilot of MST stated that, due to the gliding event, he made an additional 30 mile call inbound to Toowoomba on descent through 8,500 ft on the Oakey/Toowoomba³ CTAF

¹ Eastern Standard Time was Coordinated Universal Time (UTC) + 10 hours.

² A Notice To Airmen distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure, or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

³ Toowoomba is a certified aerodrome: The CTAF(R) designation was abolished from 3 June 2010, when radio carriage and use became mandatory at

frequency. The pilot of MST recalled receiving a reply from:

- The pilot of a glider, registered VH-GAW (GAW), overhead Oakey tracking north-west for Jimbour and,
- The pilot of a Robinson R22 helicopter, registered VH-YZO (YZO), conducting circuits at Oakey.

The pilot of MST did not recall hearing a call from ULZ and was unaware of ULZ's position until the incident.

The pilot of MST stated that, following the incident, he attempted to make radio contact with the pilot of ULZ on the CTAF frequency and had no response.

Pilot of VH-ULZ recollection of events

At about 5 NM west of Toowoomba, ULZ was thermalling⁴ around 3,000 ft above ground level (AGL). The pilot noticed an aircraft about 2 NM above and ahead of ULZ on track for Toowoomba. The pilot stated that the two aircraft were approaching head on. However he did not think that there was any potential for a conflict.

The pilot of ULZ stated that he did not broadcast on the CTAF and did not recall hearing MST make an inbound call to Toowoomba. However, the pilot did recall hearing GAW broadcasting on the CTAF at the time. The pilot stated that it was common practice to switch between monitoring the CTAF frequency and the gliders 'gaggle' frequency⁵. The pilot stated it was possible that he was on the 'gaggle' frequency when MST broadcast his inbound call.

Pilot radio communications

The Australian Transport Safety Bureau (ATSB) examined recordings of the transmissions broadcast on the joint Oakey / Toowoomba CTAF at the time. That examination revealed that the

all registered, certified, military, and other specified non-towered aerodromes.

⁴ To use a local column of rising air in the atmosphere as energy input for soaring flight.

⁵ Discrete frequency for glider to glider communication.

pilot of MST broadcast an inbound call on the Toowoomba CTAF, 20 NM to the south-west of Oakey on descent through 8,700 ft.

The pilot of MST made a further broadcast 10 NM south-west of Oakey passing through 6,600 ft inbound for Toowoomba, where glider GAW, replied that he was overhead Oakey at 3,600 ft.

MST made a broadcast directed to YZO, 3 NM south of Oakey stating they were tracking direct to Toowoomba passing through 5,700 ft. The pilot of MST made a further broadcast directed to 'Toowoomba traffic' 8 NM west of Toowoomba on descent through 4,100 ft.

The next broadcast from MST was to 'the glider to the south west of Toowoomba' (ULZ). There was no response.

Figure 1: Gliding Competition Task Area

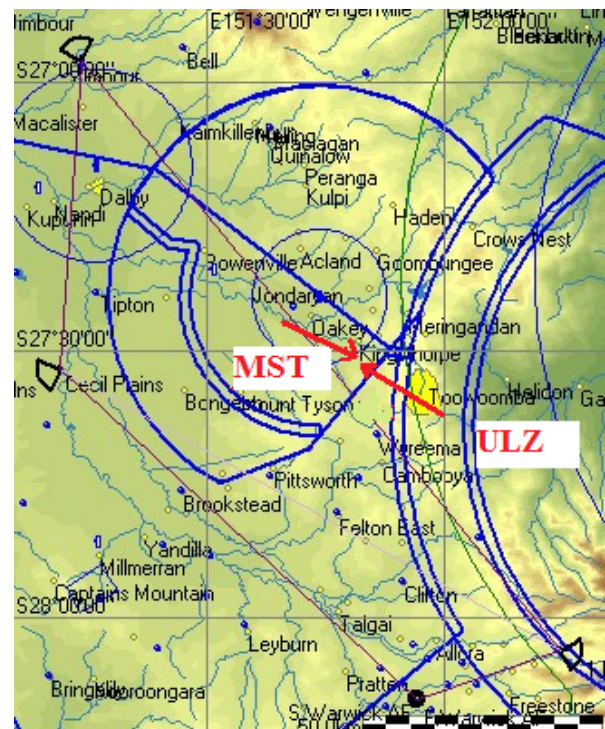


Image courtesy Gliding QLD

CTAF PROCEDURES

CAR 166C requires pilots to make a broadcast whenever it is necessary to do so to avoid a collision, or the risk of a collision with another aircraft.

The Aeronautical Information Publication (AIP) Enroute (ENR) section details various recommendations relating to operations outside controlled airspace (G airspace), including CTAF

procedures and communication for both powered and unpowered aircraft.

With reference to communication for gliders, ENR 5.5-1 includes:

- Except for operations in controlled airspace gliding operations may be conducted no-radio, or may be on a discrete frequency allocated for use by gliders.
- Radio equipped gliders at non-towered aerodromes will use the CTAF.
- Except when operationally required to maintain communications on a discrete frequency, glider pilots are expected to listen out on the area VHF and announce if in potential conflict.

AIP ENR 1.1 details various recommendations for operations in the vicinity of a non-towered aerodrome where the carriage of radio is mandatory, including:

- In the vicinity of a non-towered aerodrome where the carriage of a radio is mandatory pilots should always monitor the CTAF and broadcast their intentions at least in accordance with the minimum calls outlined in table, Summary of Broadcasts – All aircraft at Non-Towered aerodromes.
- If a pilot intends to fly through the vicinity of, but not land at, a non-towered aerodrome – broadcast when the aircraft enters the vicinity⁶ of the aerodrome.

Gliding Competition Rules

The Queensland State Gliding Championships Local Rules required all aircraft competing in the competition to be equipped with a serviceable VHF radio. Specifically the local rules stated;

- En route all pilots should monitor 122.9 (glider gaggle frequency). “Use of this frequency is mandatory when entering or near gaggles or flying with or near other gliders.”

⁶ Vicinity of the aerodrome is defined as in airspace other than controlled airspace, within 10nm of the aerodrome and at a height above the aerodrome that could result in conflict with operations at the aerodrome.

- Competitors must take particular note of the airspace requirements applicable to the task area. Penalties applied for flights infringing controlled airspace and were prescribed in the National Rules.

The Gliding Championship Local Rules must be read in conjunction with The Gliding Federation of Australia Airways and Radio Procedures for Glider Pilots, which stated;

- All pilots must monitor and communicate on the CTAF frequency whenever they are operating at or in the vicinity of a non-towered aerodrome.
- The height may vary considerably in consideration of local traffic however all aircraft are expected to operate on the CTAF frequency whenever at or below 3000 ft AGL and higher where appropriate.

Further the Gliding Federation of Australia Manual of Standard procedures provides at 25.1.3;

- Radio equipped gliders are not permitted to use one of the gliding frequencies in a CTAF area (unless the designated CTAF frequency is a gliding frequency.)

ATSB COMMENT

It is likely that had the pilot of ULZ been constantly monitoring the CTAF, he would not have missed the position reports made by MST. Conversely, had the pilot of ULZ transmitted his position and intentions on the CTAF, MST would have been alerted to the presence of ULZ as he was alerted to the presence of GAW.

While the inclusion of the glider ‘gaggle’ frequency, in future NOTAMs regarding intensive glider activity, would provide other airspace uses with access to those broadcasts. It was considered that such action may result in greater confusion over which frequency to monitor and lead to more opportunities for calls to be missed. Further the Gliding Federation of Australia standard procedures unequivocally require glider pilots to use the designated CTAF frequency in the vicinity of a CTAF and not a discrete gliding frequency.

SAFETY MESSAGE

By itself, the concept of 'see-and-avoid' is far from reliable. It is important that pilots apply the principles of 'see-and-avoid' in conjunction with an active listening watch. Research has shown the effectiveness of a search for other traffic is eight times greater under alerted circumstances than when un-alerted⁷.

Pilots should be mindful that transmission of information by radio does not guarantee receipt and complete understanding of the information. Without understanding and confirmation of the transmitted information, the potential for alerted see-and-avoid is reduced to the less safe situation of un-alerted see-and-avoid.

A 2004 ATSB review of all 37 mid-air collisions in Australia between 1961 and 2003 (ATSB, 2004) identified that radio problems, use of the wrong frequency, or failure to make the standard positional broadcasts led to many of these collisions⁸.

- In at least six of the aeroplane/aeroplane collisions, one or both pilots did not hear a required radio broadcast made by the other pilot.
- In three of the aeroplane/glider collisions, neither pilot was using the radio.
- In two of the aeroplane/glider collisions, one of the pilots did not make the standard positional broadcasts.
- In one of the aeroplane/glider collisions, one of the pilots used the wrong frequency to make the standard broadcasts.
- In one of the aeroplane/aeroplane collisions at a non-towered aerodrome, the pilot did not make a required broadcast due to radio frequency congestion.

⁷ *Limitations of the see-and-avoid principle* (1991) ATSB, at paragraph 2.6.1 available from the ATSB's website at www.atsb.gov.au

⁸ *Safety in the vicinity of non-towered aerodromes* (2008) AR-2008-044(2), available from the ATSB's website at www.atsb.gov.au

It is imperative that pilots make a broadcast with position and intentions in the vicinity of a CTAF particularly when changing frequencies or if there is any doubt as to the position of other aircraft. These occurrences show clearly that simply having a radio is no guarantee of safety.

The following publications provide some useful information on the see-and-avoid principles:

- *Limitations of the see-and-avoid principle* (1991), available from the ATSB's website at www.atsb.gov.au
- *Safety in the vicinity of non-towered aerodromes* (2010) AR-2008-044(2), available from the ATSB website at www.atsb.gov.au
- *Pilots responsibility for collision avoidance in the vicinity of non-towered (non-controlled) aerodromes using the 'see-and-avoid'* (Civil Aviation Advisory Publication CAAP 166-2(0), available from the Civil Aviation website at www.casa.gov.au

SAFETY ACTION

Whether or not the ATSB identifies safety issues in the course of an investigation, relevant organisations may proactively initiate safety action in order to reduce their safety risk. The ATSB has been advised of the following proactive safety action in response to this occurrence.

The Gliding Federation of Australia

The Gliding Federation of Australia (GFA) recognised that the Competition Local Rule that required all pilots to use the gliding frequency 122.9MHz "*when entering or near gaggles or flying with or near other gliders*" may have inadvertently led to confusion. While it was not the intention of the competition organisers to override the Civil Aviation Regulations, it is likely that some competing pilots may have interpreted this requirement literally.

As a result of this occurrence, the Gliding Federation of Australia has advised the ATSB that they will ensure that competition local rules reinforce the radio requirements for operating at, or in the vicinity of non-towered aerodromes and clarify when the 'gaggle' frequency is to be used.