



# Operational Safety Bulletin

No. 01/12 (Revision 1)

## Boxing the Slipstream

### Introduction

The exercise of boxing the slipstream is designed for the skilled instructor to evaluate and develop the pilot under training. The student can be assessed on their ability to perform safely in a high workload environment.

Boxing the slipstream is a useful exercise in co-ordination, understanding of the forces at work on aerotow, and confidence building. The exercise serves to attune the student to a range of out-of-station positions to which a pilot might reasonably go, and helps to consolidate the technique for controlling the glider behind the tug.

### The Exercise

The instructor must ensure the student is fully briefed on the exercise and the objectives. The exercise is not without its risks and the following notes provide guidance for instructors on managing those risks.

- It is important to remember that the exercise is carried out in an anti-clockwise rotation (i.e. to the right first) to avoid potential confusion with the 'glider unable to release' signal.
- The exercise is useful in the development and growth of pilot's skills. This exercise must not be performed too early in the student's development. The aircraft type must also be taken in to account as some more modern training gliders are very slippery.
- The instructor must never allow a situation to develop beyond their skills. This means an instructor attempting this exercise must be in current practice and aware of his/her ability and limits. The instructor must know when to take control as the situation demands; doing so in a calm assuring manner. Instructors should note that this exercise, while challenging, should also be an enjoyable experience with minimum stress for all concerned; and add to the student's growth and development.
- If a significant bow in the rope occurs, turn the glider away from the bow and, if necessary, release the rope just before the rope comes taut.
- Abort the exercise if conditions make the objective unachievable.
- Ensure that the student is competent in performing the high and low tow position as a prerequisite to the exercise. It is imperative that the student understands and can

demonstrate the correct high and low position as described in the GFA Instructor Manual. The high tow/low tow flying skills are building blocks for this exercise.

- There must be a clear understanding and agreement between the tug pilot and the instructor before initiating the exercise. This agreement must be carried out before the launch commences.
- The radio should be used to advise the tug pilot that the exercise is about to commence and when the exercise is completed. The tug pilot will fly on a heading continuing the climb whilst the exercise is being carried out. A suggested phraseology is: '*Tow plane Tango Uniform Golf, Glider Xray Yankee Zulu boxing the slipstream*'. Ensure you get an acknowledgement from the tug pilot. When the exercise is completed and the tug can again turn, call '*Tow plane Tango Uniform Golf, Glider Xray Yankee Zulu boxing the slipstream exercise completed*'.
- A thorough ground briefing must be undertaken to emphasise the dangers to the student of the tug upset. It must be understood that high tow position is virtually line astern (behind) of the tug. The student must understand that on losing sight of the tug at any time during the exercise the glider must release immediately.
- The primary reference for low or high tow is the slipstream. When the correct station is established, reference to a feature on the tug will assist maintaining that station.
- Consideration must be given that in the event of a large bow in the rope occurring, resulting from a poorly exercised and supervised procedure, the rope may wrap around the wing and on re tension result in damage to the wing or flight control. This could result in an inability to release or worse; a reduction in, or loss of, control. The instructor must be on his guard to ensure that the above does not eventuate.
- The tow pilot may at any time release the glider if the tug is placed in danger. The rope and weak link may add further airworthiness implications should the rope fly back at the aircraft, such as control jamming or impact damage depending on the position or station when the rope is released.

## Conclusion

Boxing the slipstream is an exercise in control resulting in the balancing of forces on the glider whilst on tow. The aim is to perform a square box outside the slipstream, pausing at each corner under control, and taking the smallest route outside the slipstream to safely carry out the task. The exercise is to be completed utilising good effective communication between the glider and tug. The exercise must be performed while maintaining tow rope tension and, on completion, the tug pilot is to be advised that the exercise is completed.

The glider pilot or instructor will release at any time the exercise develops into an unsafe condition. The instructor must be mindful that it is the tug pilot's right to release the glider at any time.



Christopher Thorpe  
Chairman, Operations Panel

Effective Date: 8 June 2013