



CAMERA FLYING COACHING MANUAL

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British Skydiving Manual Update Policy



The British Skydiving Camera Flying Coaching Manual is updated periodically. As rules are continually evolving, the primary operational document, the British Skydiving Operations Manual, is regularly updated at meetings of the Safety & Training Committee which are held every two months.

Therefore, in the case of any conflict between rules or requirements set out in the Operations Manual and any other British Skydiving manual, the provisions in the Operations Manual shall always have primacy as the definitive statement of the current position.

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Introduction

The purpose of The Camera Coaching Manual is to teach skydivers how to reduce the risks when wearing a camera and attachments. It educates about safety and emergency procedures.

Note: *The following information is aimed at already-competent skydivers. Serious consideration should be made before using cameras or attachments.*

"Not everyone is ready to fly with cameras, even if you have performed hundreds of jumps".

British Skydiving Requirements to jump Camera

- a. Cameras may only be used by a 'C' Licence skydiver after inspection and approval of a CI.
- b. Cameras must be securely fitted. Only in cases of emergency should they be jettisoned.

Who can teach Camera procedures?

Before mounting or flying with cameras it is important to receive a proper briefing by a suitably qualified person and this Manual may be used as reference. Camera procedures must be taught with an in-depth approach ensuring that safety is the number one priority.

A British Skydiving Chief Instructor (CI)/Advanced Instructor (AI), an experienced camera flyer with extensive knowledge about cameras, skydiving, abnormal landings and who is familiar with the camera manual can be nominated to give briefings about camera safety.

Camera briefing objectives

1. To provide information before mounting a camera or attachments.
2. To develop basic knowledge and teach the skills laid down in this manual.
3. To practically show and explain possible mistakes to maximise learning emergency procedures.
4. To give a corrective training through the means of visual aids.
5. To provide a safety brief and the awareness required while flying with cameras and attachments.
6. To make a logbook entry depicting that a camera briefing has been carried out.

Section 1: Awareness

Flying with cameras can be fun and a great training tool; but we can very easily get carried away with the camera and forget about everything else. It is of the utmost importance that the camera is the last priority when carrying out our gear checks.

It is recommended that you turn on the camera and record before running in, so you can mentally prepare for the jump ahead. Throughout the rest of the skydive, from free-fall to landing and back into the hangar - we must stay focused on our surroundings.

Many incidents have occurred from skydivers keep going low just to get that picture or make that dock for the video. There have also been incidents of canopy collisions and off landings due to tunnel vision with cameras. It is important to not develop tunnel vision for the footage! Serious consideration must be made to add cameras to an already-hazardous environment. Even if you have just obtained your British Skydiving 'C' Licence, you still might not be ready.

First, we are skydivers and second, we are camera flyers. It is important that we stay mindful of other skydivers, the jump spot, and our altitude awareness.

Section 2: Helmet

2.1 Helmet

Fully inspect the helmet, which is going to be used for flying with cameras. Consider the following when choosing a helmet for camera use.

2.2 Cutaway system

- a. Does it have a cutaway system? How does it work? Physically cut away and reassemble to truly understand the system.
- b. A cutaway should ideally be placed on the chin as it easy to locate and cannot be snagged by the risers on deployment.
- c. A cutaway must be firmly fitted to prevent accidental release.

Note: Check with your CI whether the Standard Operating Procedures (SOPs) state that all camera helmets should be fitted with a cutaway system.

2.3 Release without cutaway system

It is recommended that all helmets with cameras and mounts attached should be fitted with a cutaway system.

- a. If you do not have a cutaway on your helmet, ask yourself, can it be released quickly under tension without a cutaway?
- b. Have a friend add pull force to your helmet and attempt to release it quickly.

2.4 Correct fitting

- a. Does it fit correctly? Is the helmet a snug fit, or does it wobble a lot?

- b. If the helmet is not securely fitted it can potentially cause neck/head injuries when mounted with heavy cameras.

2.5 Audible device

- a. When flying with cameras it is essential to use an audible device. Cameras can be a distraction, so to aid height awareness an audible device is a must.
- b. Consider when choosing a helmet how you will mount your audible device comfortably.

2.6 Shape/design of the helmet

- a. Is it egg-shaped or square?
- b. Egg-shaped helmet designs are more prone to risers etc. causing snagging due to their design. Where is a squared helmet will deflect risers etc.
- c. To avoid snagging of lines and bridles. There should be no gap between the hard shell of the helmet and inline foam.

Section 3: Camera

3.1 DSLR and other large cameras

Larger cameras such as DSLRs, these should be only jumped by skydivers with no fewer than 100 camera descents and when proficiency with a single camera has been achieved. A skydiver's first camera for free fall should be small and simple to operate. Check with your CI to establish their standard operating procedures.

3.2 Weight of the camera

- a. What is the weight of the camera?
- b. Heavy cameras can cause injuries on openings as well strain on the neck during use in the plane and under the canopy.

3.3 Size of the camera

- a. What is the size of the camera?
- b. Wider cameras may protrude out from the helmet and cause a snagging point.
- c. Tall cameras may get knocked during the climbing in and out of the plane.

3.4 Simplicity

- a. Is the camera simple to use?
- b. Operating cameras can be a serious distraction from our normal safety procedures. Use of a simple camera will greatly reduce the risks.

3.5 Intended use

- a. Am I being realistic with what I plan to use it for?
- b. Is it necessary to take a large production camera for a task that a small action camera can manage? For the everyday skydiver it is recommended to only use small action cameras.

3.6 Distraction

- a. Will the camera create any distractions?
- b. Is the camera positioned in such a way that the normal after opening procedures will not be affected by the camera?
- c. Will the camera block vision in any way?

Section 4: Mounting

There are several safety factors to consider when mounting a camera to your helmet or any other part of your body. Several options must be considered to find the best and safest solution.

4.1 Location

- a. Is this an appropriate place to mount? IS the location as snag proof as possible and is the camera angle suitable?
- b. Will it create difficulty or discomfort with deployment? This important when using hand mounts.
- c. Do I have access to all my handles with ease?
- d. Will it distort my visuals?

4.2 Snag hazards

- a. Does the mount protect the camera and attachment from any snag hazards?
- b. Running a piece of old canopy line along the side of the helmet or brushing the pilot bridle pass will help spot any snagging issues.
- c. There are several snag-proof mounts on the market that should be considered.
- d. Materials like sticky foam etc. Can be used to reduce snag hazards.

4.3 Security of the mount

- a. Is the mount adequately secured to prevent an unexpected falling hazard to people and property below?
- b. The mount should not be fragile enough to fall off after opening but still be able to break under tension if it is not snag free.

4.4 Breaking under tension

Will the mount breakaway if it succumbs to tension? If the mount or camera becomes entangled it is advantageous if it breaks away under force. Solid mounts can be hazardous if they become entangled on canopy or pilot chute extraction.

4.5 Removing the mount

Can I remove the mount if the camera is not needed for a descent? When a camera is not in use, cameras and mounts should be removed from the helmet to reduce any risk of entanglement. If the mount cannot be removed, then covering it with tape would also reduce the risk of entanglement.

Section 5: Attachments

5.1 Consideration

Attachments can be classed into a variety of items and some can be very hazardous to skydivers. Any attachment must be seriously thought out and have approval from your CI before jumping. Your CI may seek advice from an experienced camera flyer.

5.2 Ring sight

- a. As ring sights should only be used by experienced camera flyers, who are fully aware of the hazards.
- b. Hazards include: entanglement with un-stowed brake excess and visual impairment.
- c. If the ring sight is attached to the pilot chute side, then there is a potential for entanglement with the pilot chute when looking back on deployment, as well as entanglement with lines under canopy.
- d. A small round sticker on the goggles can be used as an alternate to a ring sight.

Note: *It is advised that all attachments must have a breaking point under tension.*

Section 6: Deployment Consideration

With the added extra weight in our head position, we are now more prone to neck injuries. It is recommended that we consider using the lightest equipment possible to reduce harm.

6.1 Camera wings

It is recommended that when jumping camera wings for the first time, a briefing is obtained from an experienced camera flyer before use. The briefing should include:

- a. Ensuring that the wing attachment point, and the seam of the wing is not large enough to pull your pilot chute through.
- b. Making sure that the movement of the pull arm stays well away from the gap between the wing attachment point and the seam of the wing.

- c. That the wing is not large or slack enough to cover the pilot chute on deployment.
- d. The pull motion should be exaggerated so that the pull hand completely clears the camera wing.
- e. Swoop cords are worn over the gloves so that they can be removed in the event of an emergency so that the risers can be reached without releasing the wings.

Note: Practice pulls should be observed on the ground to reinforce the above points.

It would also be advantageous that the first camera wing jump be a solo jump, without camera, focusing solely on practice pulls. It should also be advised that this jump is from not less than 10,000ft and that hop and pops jumping camera wings for the first time be strongly discouraged.

When wearing camera wings, one method of collapsing the wings on deployment is to move the free arm as normal but to bring the elbow into the torso as the free arm is moved so that the wing is collapsed, this would prevent one wing staying inflated and rotating you during the deployment phase.

6.2 Pilot chute and Bridle

The use of an extended bridle and larger pilot chute when flying with wings will reduce pilot chute hesitation and pilot chute entanglement.

6.3 Head Position During Deployment

The jumper should be looking at the horizon during deployment to ensure that the head remains in line with the spine. Any position of the head that is not in line with the spine during deployment is likely to result in neck injury in the event of a hard opening.

6.4 Canopy

- a. Does your canopy have a tendency for hard or off-heading openings? Large docile canopies are recommended when flying with a heavy head set up.
- b. Don't look up during opening, doing so will increase the chances of a line snagging on your helmet and may also result in neck injury.
- c. Stow your brake line excess to reduce snagging, check your pins, closing loops and pilot chutes. Premature deployment whilst you are on the camera step can be a fatal incident.

Section 7: Emergency Procedures

It is important that we are confident with our normal emergency procedures before adding cameras and attachments to ourselves. With every situation there can be various factors at play. It must therefore be considered that all emergency procedures will not be the same and must be assessed by the situation that is at hand. Below are some of the situations that may occur while using cameras and attachments.

Note: *Mental rehearsal and on-the-ground practical training is key. Doing so will give you a higher chance of success when the incident happens in real life.*

When carrying out any emergency procedures you should always ensure that you have sufficient altitude to safely cut away.

7.1 Pilot chute / bridle line entanglement with camera / helmet

Attempting to clear an entanglement could easily consume altitude very quickly if not dealt with efficiently. Below are a few scenarios:

- a. One attempt to clear entanglement, if unsuccessful, cut away the camera helmet, if main canopy deploys, check canopy. If main canopy malfunctions, initiate emergency procedures. If main parachute deploys correctly then ascertain if the canopy is controllable.
- b. If the main parachute does not deploy "pilot chute in tow", initiate emergency procedures.

7.2 Landing into water with cameras and attachments

When unintentionally landing into water it is recommended to release the headgear. This must be done prior to landing in the water, as it can become a dangerous hazard when trying to swim out of equipment (If the head gear has snagging points).

Section 8: Tandem Relative Camera Work

If a jumper becomes interested in filming tandems, they should seek the advice of their CI and then may wish to start practicing jumping with tandems without a camera, to concentrate on the exit, matching free fall speeds and staying clear on deployment. These jumps should only take place following a safety brief from a TI. Only when the skydiver has demonstrated competency should they be allowed to film these descents.

8.1 Exit

- a. Camera step: Before climbing out on to a step, the camera flyer should check the spot to ensure that the tandem pair is exiting at the correct exit point, which will allow them to land in the intended Parachute Landing Area (PLA). When exiting on the camera step consider where the step is and how you will step out to it - being mindful of handles and pilot chutes. It is a good idea to rehearse this on the ground prior to attempting this at altitude for the first time.
- b. Instructors count: Know the instructor's count and signals. An instructor's count is vital for the camera flyer to exit before the tandem pair creating a safe distance between the camera flyer and the tandem pair. Some instructors may have various hand signals to assist the camera flyer of the jump spot.
- c. Separation: On exit leave earlier than the tandem pair to provide good separation for clean drogue throw.
- d. Drogue Inflation: Wait for drogue inflation before approaching tandem pair. An inflating drogue can cause serious harm to yourself and create an entanglement.

8.2 Free-fall

- a. Drogue and Free-fall: Do not fly over or close to drogue. Do not attempt to touch drogue or bridle.
- b. Underneath tandem: Avoid flying directly underneath tandem pair at any time.
- c. Docking with tandem: Avoid docking on Tandem student hands as they grab on and do not let go. Docking with tandem pair and turning them violently can damage shoulders.

- d. Ideal flying position: Fly in front or on the side and a little down of the pair looking slightly up to them.
- e. Safety cone: When flying up and around, imagine a cone around the tandem pair and the drogue. Fly around the outside of the cone.

8.3 Deployment

- a. Trap door effect: Adequate separation is required as the tandem pair is deploying to be clear of the trap door effect.
- b. Visibility for Tandem Instructor and camera flyer: The camera flyer must be visible to the tandem instructor when the tandem pair is deploying.
- c. Jump spot consideration: "The tandem instructor should keep an eye on the spot and signal to the camera flyer in the event of a deep spot. The tandem pair may then deploy early to enable the camera flyer to also deploy at a higher altitude."
- d. Separation from tandem pair: After the tandem pair deploys, it is a must to track clear of the tandem pair and deploy as high as possible.

8.4 Landing

Awareness in the landing area: Once you have landed, it is easy to become fixated as a camera man, when filming your tandem pair landing. Stay alert of other skydivers landing around you.

8.5 Emergency procedures

- a. Tandem pair unstable on exit: If the tandem pair becomes unstable on exit, give them horizontal separation to avoid an expecting drogue or canopy coming out.
- b. On top of tandem before drogue throw: If you find yourself on top of the tandem pair before drogue throw - move out of the way immediately by any means.
- c. Tandem pair unconscious in free-fall: In the situation when the tandem instructor becomes unconscious in free-fall observe from a safe distance and deploy your own parachute at a safe altitude and distance.
- d. Drogue entanglement with tandem pair: If drogue becomes entangled with tandem pair, do not attempt to help tandem pair. Observe from a safe distance and deploy with safe separation at a safe altitude.
- e. Drogue entanglement with yourself: If the drogue becomes entangled with yourself, attempt to clear the entanglement and be aware that the tandem pair will most likely disconnect their RSL/Skyhook, cutaway, pull drogue release and then track to clear to a safe distance and deploy their reserve. So, if you become entangled with the drogue - be prepared that you might get wrapped in a main parachute. Attempt to clear any entanglements and consider deploying either main or reserve parachute at an adequate altitude to resolve any issues with deployment.

