

# Flying Near Dropzones

by Mark Smith



Flying is a great deal of fun as I'm sure all the readers of this story can attest to, but there are dangers as well. As in all things of this nature, knowledge is power. Unfortunately, sometimes it is hard to locate useful, accurate knowledge regarding certain topics. Dropzones falls into this category. One speculation for this is that the two parties involved with the usage of the airspace don't often mix, and frankly, the need to know about dropzone's don't come up very often, but for whatever the reason, very often pilots, and even CFI's are not aware of the ramifications of the little parachuting symbol on a sectional chart.

For the most part, the FAR's discuss how the aircraft operations will take place. The exception is to be found in FAR Part 105 *Parachuting Operations* and even this deals mainly with what the pilot of the jumpship will and will not allow to happen while she is flying the aircraft. These rules are not only the law, they're also quite useful, but they don't adequately address the interaction between jumpship pilots, and canopy pilots and other mechanized pilots either transiting the area or landing/taking-off from the same airport.

Here is what a quick perusal of the 2004 FAR/AIM came up with: 3-5-4 *Parachute Jump Aircraft Operations* on page 537 of my ASA copy. There are approximately 760 words in this section which essentially says *see and avoid*. This story should hopefully not only fill in some of the blanks, but do so in a more practical way as well. All of it pertains to dropzone activities at an untowered airport.

A good place to start would be a description of the skydive from the skydivers perspective. Take off is the same as any other aircraft would with a takeoff announcement on the CTAF. Many dropzone operations will require the pilot to climb in a certain manner. The climbout may be to one side of the airport, or in a certain area, or it may be to climb in a strict circling pattern. Generally, the requirement is to either clear the airspace during busier airport operations or to maintain contact with the airfield in case of emergency.

During this climb, it is atypical for position reports to be made once the airfield has been cleared. If another pilot is in the area and is positioning for landing, it is a smart move for that pilot to make position calls. In any case, the jumpship pilot will be outside of the takeoff/landing altitudes quite quickly. A climb to full altitude may take between 10 and 30 minutes.

If the dropzone is in a radar coverage area, they will most likely require the pilot to contact an ATC facility above a certain altitude. This is particularly true when the FSDO in which the dropzone operates has a working agreement with them. Generally, they will maintain the same squawk code between climbs to altitude (*lifts*).

When dealing with ATC, they will request that the jumpship pilot give them a two minute warning prior to releasing jumpers. The jumpship pilot will not allow jumpers to exit until ATC has approved the operation. ATC will deny a drop when another airplane is in the vicinity below, or cleared for an approach, or some other traffic contention. In either case, there is generally one or two jumpers designated to look outside and down from the open door (*spotting*) of the aircraft to verify that (a) the position of the aircraft is in an expected and safe position for exiting in order to make it back to the designated landing area (the *spot*); (b) there is no aircraft below or anticipated to be in the way (entering the pattern, below radar coverage, etc.) as to interfere with the jump; and (c) there are no legal limitations such as clearance to clouds.

If the airport is known to have skydiving operations taking place, a pilot entering the area can very well guess where the highest likelihood of running into trouble would be. The reason for this is that

the area where a jumpship pilot releases her load will almost always be upwind of the designated landing area. The very obvious reason for this is that the parachutes being dropped cannot add power to get back to the dropzone and are relying on gravity to supply forward velocity to their parachutes. There is a lesser likelihood of making it back to the designated landing area if they are not upwind of the target.

Skydivers generally exit the aircraft from around 10,000 feet AGL to 13,500 feet AGL and freefall until opening altitude which generally ranges between 5000 feet and 2000 feet, but can in fact, be at any altitude above 2000 feet (and less in an emergency). Any pilot in the area should be aware of the fact that while the skydivers are in this phase of the skydive they are nearly invisible; they are moving speeds between 10,000 fpm and 16,000 fpm directly from above.

In freefall, the skydiver is very maneuverable being able to move by controlling the airflow over their body. If the skydiver(s) sees an aircraft in the way during a freefall, they have the ability to move in order to not hit it. Keep in mind, that the environment of freefall is quick and very busy with predetermined activities. It is not likely that a group of skydivers will view an aircraft coming up below them.

After a freefall time between 0 and up to 90 seconds a skydiver will be at an altitude proper to deploy their parachute. In the case of students this altitude is generally higher in the vicinity of 5000 feet AGL. In the case of experienced skydivers, this altitude may be as low as 2000 feet AGL, or in some cases lower. For all practical purposes, deployment takes between 200 and 1000 feet over the span of 2 to 10 seconds. A normal case is about 500 feet over 3½ seconds.

Once the jumpers parachute is opened, it is much easier to see and avoid them. The parachute may be anything from 400 to 100 square feet. Though it will be roughly horizontal to the ground they are generally brightly colored. Turns under a canopy are more or less drag turns meaning as one side of the parachute is lowered via lines attached to the rear of the canopy, the canopy will turn around that corner. Modern canopies are highly steerable and may have a forward air speed in excess of 25 knots or more. In addition, they may be controlled such that the speed, both vertical and horizontal can change drastically due to controls manipulated during flight, but with no control inputs, their descent rate will be in the 500 fpm range and their forward speed will be in the 20 knot range. The most important issue here is that it is now possible to see and avoid them.

Knowing this information about how a skydiving operation occurs is useful because it gives the incoming pilot clues as to what to do. Here are a few ideas:

- When approaching to land, it may make sense to be at an altitude lower than a normal parachute opening altitude (2000 feet AGL) so that the chances of running into a free falling body is lessened.
- When taking off, listen and observe jumping operations and take off while inbetween operations.
- When transiting an area, give a 5nm berth to the area. If possible, transit on the downwind side.
- Monitor or be in contact with ATC when possible.
- Monitor or make position reports on CTAF when possible while transiting a dropzone. Be sure to include altitude as well as position.

There is one documented<sup>1</sup> collision that I am aware of which occurred over Northampton, Massachusetts at 2pm on November, 21, 1993. The skydiver involved broke his leg, but all four on board the PA28-161 (N3011F) perished after their vertical stabilator departed the aircraft. It occurred in 20nm visibility. at 5700 feet (according to radar). The jumpship pilot was in contact with ATC at the time.

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1 [http://www.nts.gov/ntsb/brief.asp?ev\\_id=20001211X13693&key=1](http://www.nts.gov/ntsb/brief.asp?ev_id=20001211X13693&key=1)

Another word of warning as well, the parachuting symbol found on the sections may or may not be correct. Once a symbol makes it way to a chart, it doesn't apparently ever come off. Also, it takes a quite a bit of effort to get the symbol on the chart so you may be overflying a dropzone without even knowing it. If it's a new dropzone, there will be a NOTAM about it. If it's an existing dropzone it will be listed in the Airport Facility Directory (AFD).