

A-License Information Packet

1. Objective

The objective of this packet is to review several parts of the United States Parachute Association (USPA) A License Proficiency Card and to learn additional aspects of the sport of skydiving.

2. Topics

Several topics will be discussed in this section. This manual has no intention of being complete. Additional information on each topic can be found in the SIM.

2.1. Wing Loading

Wing loading is the jumper's exit weight divided by the square footage of the canopy. In other words, the amount of material above your head versus the weight suspended underneath it. The speed and descent rate of the canopy are determined by wing loading. Any increase in wing loading increases the speed, descent rate, canopy response and canopy performance.

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2.2. Encountering Turbulence

Turbulence should be anticipated 10-20 times the height of an obstacle on the downwind side of that obstacle. The effects and likelihood of turbulence increase with wind speed. Turbulence can also occur because of rising heat or converging air currents.

Turbulence often occurs:

- near runways
- alongside roads
- where two areas of different textures or colors meet

- behind other canopies (wake turbulence)
- over irregular terrain
- near the propeller wash of a taxiing aircraft
- near trees
- near buildings

When flying in turbulence

- keep the canopy at full flight as much as possible (which means keep your hands all the way up)
- maintain the desired heading and fly the planned landing pattern using smooth and minimal but effective toggle input
- prepare for a hard landing (PLF)

2.3. Seat Belt Use

Seat belts must be worn for taxiing, take off until 1,000 feet, and landing, according to FAR section 91.107.

Seat belts should never be shared. Only one person per seat belt.

2.4. Local Runway and Airport Information

The runway at Skydive Chicago has the following coordinates:

Heading: Northeast (030) to Southwest (210)

Length: 4535 feet

Width: 50 feet

Latitude: 41 24' 11"

Longitude: 88 47' 30"

MSL: 605 feet

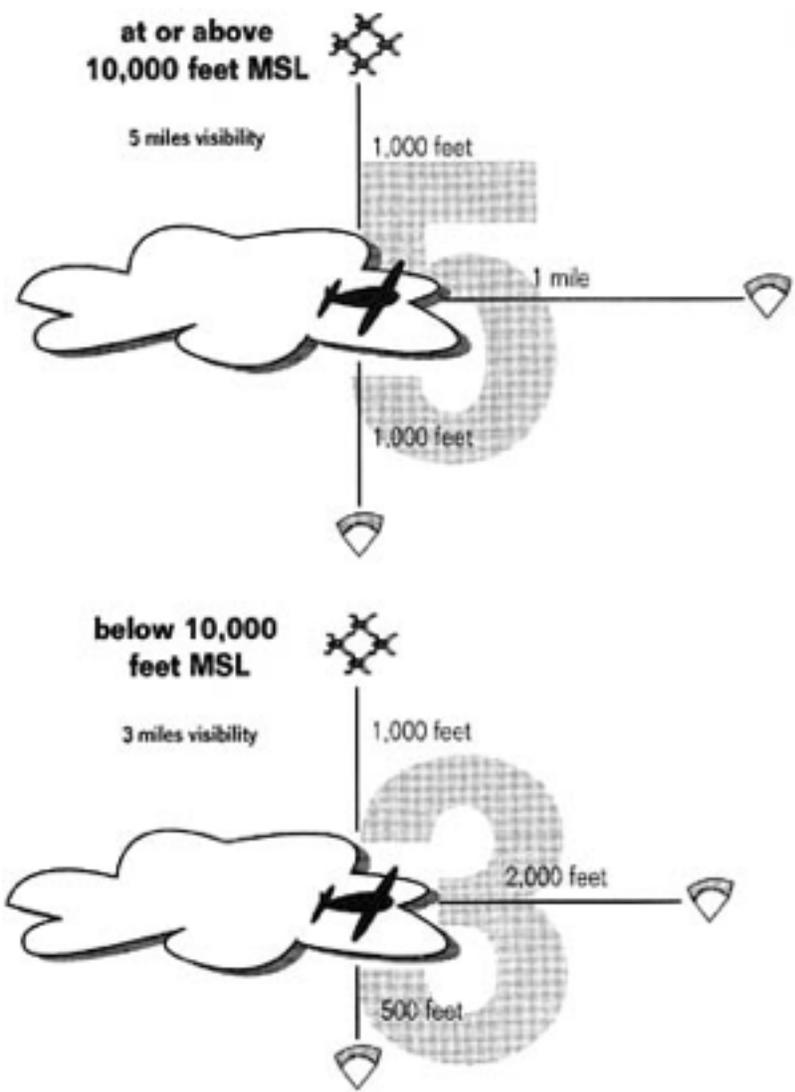
Locator: 8N2

2.5. Winds Aloft Forecast

The winds aloft forecast can be found here: <http://aviationweather.gov>

Surface winds and clouds: Local AWOS (815)223-8442

The winds aloft forecast predicts the wind direction and speed at different altitudes. It is used to determine the correct exit point. Besides spotting, it is also good to know the upper winds for canopy flight.



The closest reading station to Skydive Chicago is in Joliet (JOT).

ft	3000	6000	9000	1200
MCW	1717	1921+21	2429+15	2328+07
JOT	1911	2313+15	2717+11	3025+05
SPI	2324	2618+18	2419+12	2427+04

The first two numbers in every cell reflect the wind direction. In the winds aloft forecast, the last zero of the wind direction is not printed. This means that it is necessary to add a zero to read the correct direction. In the

example, the wind direction at 3,000 feet is 11 knots (to convert to miles, multiply by 1.15).

The last two numbers reflect the temperature in Celsius (positive or negative). In the example, the temperature at 6,000 feet is 15 degrees Celsius (to convert to Fahrenheit, multiply by 9, divide by 5, and add 32).

2.6. Cloud Clearances

FAA FAR part 105.29 SEC. 105.17 states the following:

No person may make a parachute jump, and no pilot in command of an aircraft may allow a parachute jump to be made from that aircraft:

- A. Into or through a cloud
- B. When the flight visibility is less, or at a distance from clouds that is less, than that prescribed in the following table:

When jumping from higher than 10,000 feet MSL, the visibility needs to be at least five miles. The jumper needs to be at least 1,000 feet above the cloud or 1,000 feet below the cloud. Minimum horizontal distance from the cloud is one mile.

When jumping from less than 10,000 feet MSL, the flight visibility needs to be at least three miles. The jumper needs to be at least 1,000 feet above the cloud or 500 feet below the cloud. Minimum horizontal distance from the cloud is 2,000 feet.

Example: With a cloud layer at 11,000 feet the jumpers can jump from 12,000 feet and above or 10,000 feet and below, as long as the horizontal distance from the cloud is one mile and the visibility requirements are met.

2.7. Effects of Weight and Balance

Weight includes fuel, occupants, skydiving equipment, jump seats, oxygen systems, etc.

The load in an aircraft must be distributed within the center of gravity limits of that aircraft. The center of gravity varies for different types of aircrafts. This is the reason why in certain aircrafts, jumpers need to stay in the front of the plane as groups congregate towards the door.

Large groups planning to exit together should inform the pilot. Jumpers outside the aircraft can affect the control surfaces and add drag to the plane. Therefore jumpers outside the airplane should exit promptly.

2.8. Aircraft Emergencies

In an emergency situation, the chain of command is PILOT-INSTRUCTOR-STUDENT. It is important to maintain altitude awareness and remain calm.

When an emergency occurs at 1,000 feet or below, jumpers will most likely land with the plane. Make sure that seat belts and helmets are fastened and assume the crash position.

When an emergency occurs between 1,000-2,000 feet and the pilot gives the bail out command, jumpers will exit the plane and deploy the reserve parachute.

When an emergency occurs at 2,000 feet or above and the pilot gives the bail out command, jumpers will exit the plane and deploy the main parachute.

2.9. Landing Hazards

The best way to deal with landing hazards is to avoid them. Therefore it is important to locate landing hazards before the jump and prepare a correct flight plan. Also, opening at the correct altitude and staying ahead of the jump helps to avoid obstacles. Keep in mind that you don't want to fly over or look at something you don't want to land on. Although we always try to avoid hazards when landing, we must be prepared to deal with them.

2.9.1. Power Lines

If necessary, get rid of any emergency handles in your hands. Put your feet and knees together and turn your face to the side. Flare at least half brakes and prepare to do a PLF. If you are suspended in the lines, try not to touch anything or more than one line at a time. Don't try to grab the pole or let anyone help you as this will complete the circuit and electrocute you. Stay where you are until qualified personnel (power company or fire department) come to help you.

2.9.2. Trees

If necessary, get rid of any handles in your hands. Put your feet and knees together and turn your face to the side. Flare at least to half brakes and protect your face, arteries and veins with elbows and fists. Prepare to do a PLF. If you find yourself suspended in the trees, try to stabilize your position by grabbing onto the nearest tree branch or trunk. Stay where you are until someone comes to help you down.

2.9.3. Buildings

When landing into the side of the building, put your feet and knees together. Flare at least to half brakes and prepare to PLF.

If you are landing on the top of the building, aim for the middle, flare as normal, and prepare to PLF. Once landed, gather the canopy together so it cannot catch wind and drag you. On windy days it is smart to cutaway the main canopy after landing. Stay where you are until someone comes to help you down.

2.9.4. Water

Water hazards are defined as any body of water that you can drown in. If you have time before you land, loosen your chest strap, possibly your leg straps (make sure you are still able to reach the toggles), and get rid of weight belts if necessary. Before entering the water, take a deep breath, flare as normal and prepare to PLF. After entering the water, stay calm, undo your chest strap and slide the harness off your shoulders and legs. Then swim away from the gear and make your way to shore.

If the parachute lands on top of you, start pulling the parachute material over your head in one continuous direction until the parachute is off you.

2.10. Jump Run & Line of Flight

Jump run is the direction the plane is flying as jumpers exit. Line of flight is the same line as jump run, referenced as jumpers have exited the aircraft.

The first jumpers to exit are down the line of flight, the last jumpers to exit are up the line of flight.

It is important to know the line of flight to avoid flying into groups that have exited before or after. It is also an instrument to find open parachutes after freefall to avoid canopy collisions.

2.11. Exit Order

Slower falling jumpers and groups are exposed to upper winds longer and are blown farther downwind than faster falling jumpers and groups. In other words, the exit order is determined by freefall drift. The more the group drifts, the earlier the group should exit.

RW groups fall slower than FF groups and bigger groups fall slower than smaller groups. Therefore, the exit order is as follows:

- RW (small-big group)
- Freely (small-big group)
- High Pullers
- Students
- Tandems
- Wingsuiters

2.12. Exit Separation

Before exiting after a group, it is necessary to visually confirm if there is enough separation between you and those that exited prior to you. This is important to avoid encountering each other's groups and to ensure clear airspace for freefall and canopy opening.

On days with strong upper winds, or a slower ground speed, more separation between groups will be necessary. On days with little upper winds, or a faster ground speed, less separation between groups will be necessary.

It is a good idea to ask an instructor or the pilot what the exit separation is. Once the plane is on jump run, the pilot will be able to determine ground speed and exit separation.

2.13. Spotting

Choosing the correct exit point helps the skydiver to land in the appropriate landing area. Considering jump run and the winds aloft forecast will help to determine the correct spot.

Skydive Chicago planes have two lights. Red light means open the door and visually confirm clear airspace. Green light means that the pilot has given the confirmation to jump.

Spotters must consider the correct exit point for multiple groups for the same pass. The first jumpers to exit are down the line of flight, the last jumpers to exit are up the line of flight. Allow every group on the plane to have an acceptable exit point.

Each person is ultimately responsible to visually check for traffic, clouds, and to locate the dropzone.

2.14. Break Off

The minimum break off altitude for groups of five or fewer is at least 1,500 feet higher than the highest planned deployment altitude in the group.

The minimum break off altitude for groups of six or more is at least 2,000 feet higher than the highest planned deployment altitude in the group.

3. Vocabulary

FAA Federal Aviation Administration

FAR Federal Aviation Regulations

SIM Skydiver's Information Manual

USPA United States Parachute Association

MSL Main Sea Level

AGL Above Ground Level