# STATIC PROGRESSION COACH MANUAL

THE INTERNATIONAL BODYFLIGHT ASSOCIATION

# PART 1

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# FOREWARD

Welcome to the *IBA Static Progression Coach Manual*. This is your reference guide to not only help you qualify as an IBA coach, but also to support you throughout your coaching career in the safe delivery of the flight skills contained within the IBA Flight Progression Chart. It includes most of the tools that you need to develop your coaching skills, including a comprehensive list of lesson plans that will help you to deliver meaningful and safe coaching sessions.

While it is comprehensive, it is not exhaustive, and as a part of our continuous improvement policy we are committed to improving this product. Therefore, we welcome any feedback that could usefully be incorporated into this manual. If you have something to add, please get in touch.

Rusty Lewis
Director of Safety & Training
International Bodyflight Association
2017

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# INTRODUCTION

## The IBA Coach

As an IBA coach, you fulfill an extremely important role within the sport of indoor skydiving (also known as bodyflight) and you may coach a variety of disciplines ranging from the development of basic flight skills to full competition flying. As such, you are able to contribute to the IBA vision by providing a safe coaching environment and by demonstrating a genuine culture of excellence and safety within the community of IBA flyers and coaches.

You will be routinely working with return flyers and professional flyers at all levels. Therefore, you have a high level of responsibility for leading by example and for consistently operating safely in accordance with your level of qualification and the recognized, published flight procedures of the tunnel(s) in which you operate. Within this context, you have a specific responsibility to act as part of the overall safety team and to support the on-duty IBA instructor. This is particularly important if you are already a highly-experienced coach and you are operating alongside newly-qualified IBA instructors; be a part of the team.

In addition, as an IBA coach you will be expected to enthusiastically motivate your flyers and encourage them to continue with the sport by joining the IBA. It is therefore important that you have an in-depth knowledge of the IBA Flyer Progression system and the skills that flyers require to progress within the sport of indoor skydiving.

The IBA coach rating (all levels) may be awarded by an IBA Trainer Level 4 and qualification will be conducted through a physical coaching assessment that requires you to demonstrate a satisfactory level of safety knowledge, briefing/debriefing skills, coaching skills, and flight skills relevant to the specific coach rating level. In addition, prior to the formal assessment, you will be required to complete the "Tunnel Coach Ready" assessment, which is a written confirmation of your understanding of the *IBA Fundamentals of Coaching Guide*. Upon successful completion of the assessment, you will be awarded an IBA coaching qualification for a specific flying discipline. Your achievement will be displayed on your personal IBA flyer rating chart on the IBA website.

In the unlikely event of any reported or observed breach of the endorsed IBA flight safety, training or operating procedures, your ratings may be suspended or revoked at the discretion of an IBA Trainer Level 4. Suspension or revocation can be appealed to the IBA Director of Safety and Training whose decision is final.

As an IBA coach you may or may not be employed by the tunnel within which you operate and the exact conditions of your authority to operate within the tunnel will be a local tunnel operator decision. However, in order to hold and retain any of the IBA coach ratings there is an expectation from the IBA that you will maintain certain standards. These will vary depending upon the qualification, but as a minimum should include:

- Holding an active IBA coach account on www.tunnelflight.com
- Regularly coaching all aspects of flight appropriate to your level of qualification
- Complying with host tunnel policies and procedures
- While you will always be encouraged to demonstrate personality and technique, you should have knowledge of the IBA Flyer Progression Program and know how to use it appropriately
- Contributing to the wider indoor skydiving community by engaging with your customers to promote the sport and to encourage membership in the IBA

# CONTENTS

# ASSESSMENT STRATEGY

To qualify as an IBA coach you will be assessed by a qualified IBA trainer to ensure that you meet the training objectives detailed in the *IBA Coach Curriculum*. All of the training material required to support your assessment is contained within this manual, the supporting *IBA Fundamentals of Coaching Guide* and the IBA flight tutorials. When assessing, the IBA trainer has been directed to use the following strategy that details the minimum standards required to achieve an IBA coach rating. It is generic by design, and it can be applied to each rating. Where required, additional assessment criteria have been detailed within the relevant coach rating.

| **TRAINING OBJECTIVE** *What is to be learned?* | **DESIRED OUTCOME** *What are the expected, measurable outcomes?* | **TEACHING** *What methods should be employed to achieve the desired outcomes?* | **ASSESSMENT** *What tool will be used to assess the activity and measure the desired outcome?* |
|---|---|---|---|
| Demonstrate personal flight skills and knowledge relevant to the Coach rating. | Able to perform the flight skills detailed within the IBA Flyer Progression System accurately, demonstrating full control throughout, including the ability to anticipate and avoid collisions while flying with a student. | This is assumed knowledge and the coach candidate should already be at this level of competence. If additional coaching or teaching is required, it should be delivered in accordance with the relevant IBA flight tutorials and training manual. | Direct assessment by observing personal flight skills.<br><br>In addition, the trainer will conduct an oral check of understanding of the coach's role within the tunnel. |
| Deliver a pre-flight safety briefing relevant to the activity that is being coached. | Demonstrate a clear understanding of the safety issues relating to the activity that is being conducted and delivery in a clear and accurate manner, without confusion, noting any local operating procedures relevant to the activity. | This is assumed knowledge and the coach candidate should already be at this level of competence. If additional teaching is required, then this should be conducted within a classroom environment with the trainer clearly demonstrating the delivery of a pre-flight safety briefing. | Direct assessment by observing a pre-flight safety briefing which may be delivered to a student flyer (preferable) or the trainer. |
| Deliver a pre-flight activity briefing.<br><br>Demonstrate and coach the relevant flight skills.<br><br>Deliver a post-flight performance debriefing. | Conduct a full coaching session relating to skills detailed within the IBA Flyer Progression System, safely and accurately without confusion, noting any local operating procedures relevant to the activity. | This is assumed knowledge and the coach candidate should already be at this level of competence. If additional teaching is required, then this should be conducted within a classroom and tunnel environment with the trainer clearly demonstrating the delivery of a full coaching session. If the candidate is not at this level of competence, then the trainer is to deliver the appropriate training required to meet this standard. | Direct assessment by observing at least one complete coaching session. This should be successfully completed to the required standard and may be repeated if necessary.<br><br>The trainer will be unable to assess every flight skill within this category, so should choose a relevant skill (or a group of skills) based upon their judgment and, if appropriate, the student need. |

# ASSESSMENT TEMPLATE

This is a generic template that can be used to assess all IBA coach ratings. The trainer should enter the required training objective (TO) in the appropriate column and sign off each TO as it is achieved. This is particularly useful if the assessment is delivered over multiple sessions or the candidate is unsuccessful in any area. A copy should be given to the candidate. The following is an example:

| COACH RATING ASSESSMENT | |
|---|---|
| **Coach Rating:** | IBA Formation Skydiving Coach (for example) |
| **Candidate:** | Nikola Tesla |
| **Trainer:** | Leo DaVinci |
| **Pre-Requisites Confirmed:** | Leo DaVinci |

| Training Objective | Date of Assessment | Standard Achieved | Signature |
|---|---|---|---|
| TO 1 | July 12, 2016 | Yes | Leo DaVinci |
| TO 2 | July 12, 2016 | Yes | Leo DaVinci |
| TO 3 - First Observation | July 12, 2016 | No | Leo DaVinci |
| TO 3 - Repeat observation (if required) | July 16, 2016 | Yes | Leo DaVinci |
| TO 4 - where applicable | July 16, 2016 | Yes | Leo DaVinci |

| Development Comments | The trainer should write a short narrative on the overall performance and key point to work on for the coach to improve as he/she gains more experience, particularly if any TOs were repeated. |
|---|---|

| Date of Award | Signature |
|---|---|
| July 16, 2016 | Leo DaVinci |

# PART 2

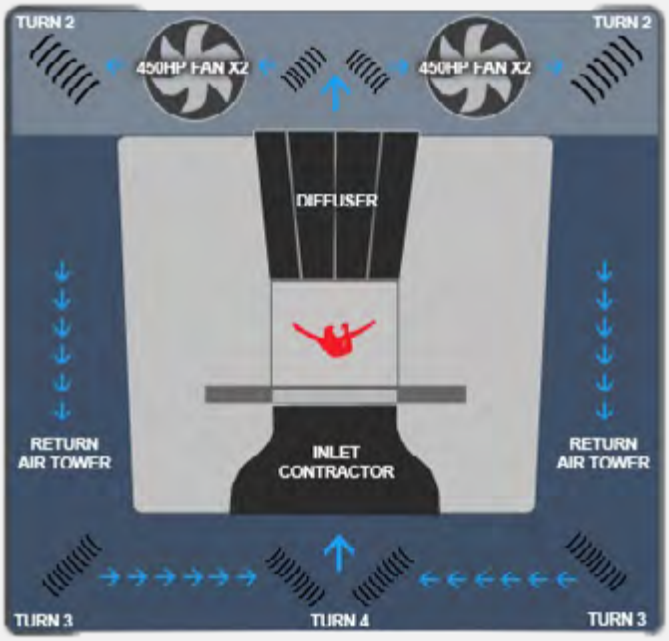
# GENERAL INFORMATION

## Tunnel Operations

### How a Wind Tunnel Works

As a coach, you may need to explain to your flyers how a vertical wind tunnel works. You will not need to go into great technical detail, but you should be able to describe the basic operations. The following notes will support your knowledge in this area.

The fans at the top of the flight chamber draw air up from the bottom through the inlet, which accelerates the air to free fall speeds. In a recirculating tunnel, the air transitions through a series of ducts to be redirected in a closed loop. The airflow controller at the control station can alter the fan controls to increase or decrease the tunnel wind speed.




The fans are located at the top of the tunnel, so that the turbulence they create does not enter the flight chamber. Turbulence may also be caused by inconsistencies in the air drawn into the inlet. Because of this, flow straighteners are used to improve the consistency of the air in the flight chamber. The acceleration of the air causes a drop in pressure and temperature. This drop in pressure creates a marginal pressure difference between the air in the flight chamber and the air outside of the tunnel. In some facilities, this pressure difference is the reason for the pressure door system between the outside air and the flight chamber. Therefore, in some cases the tunnel instructor is required to ensure that the pressure doors are closed and sealed before any tunnel operation. You as a coach can assist in ensuring the facility is ready for operation by being an additional set of eyes for the tunnel staff in observing if anything looks out of the ordinary.

In newer facilities that incorporate a high-pressure design, the pressure difference is dispersed through the airflow path. At these facilities, it is possible to operate the staging area doors during flight operations. However, it is important that you support the tunnel instructor and check that any operable doors located next to the flight chamber doorway are not used during flight operations.

A small number of wind tunnel facilities do not recirculate the airflow, but rather, are open-flow tunnels. At these locations, the drop in temperature can, under certain conditions, cause moisture to condense in the flight chamber on the net and on the walls. Moisture on the walls degrades the professional appearance of the tunnel and affects the experience of the observers and flyers. Moisture on the net and walls can also make those surfaces slippery, affecting safety. You should be aware of wet conditions and exercise caution when anyone is walking on the net or using their feet on the walls.

In recirculating tunnels, redirecting the air through ducts and turning vanes inevitably causes some amount of drag. This drag

ultimately manifests itself as heat. This in turn raises the temperature in the flight chamber. To compensate for this, some recirculating tunnels have louvers in the return air tower(s) that allow for the exchange of heat and air with the outside, while other recirculating tunnels use a water chiller to control the temperature.

### Facility Layout

Most facilities comprise a guest check-in area, a gear-up area, the flight chamber and staging area, the control room, an observation area, a classroom/party/conference room, and restrooms. In normal operations, a designated classroom area is assigned for the safety briefing, discussion of flying techniques, and gear-up before proceeding to the staging area and flight chamber. The layout of each facility will vary slightly but in most cases the classroom and gear-up areas are on the flight deck level surrounding the flight chamber.

## Safety

### Working with the Tunnel Instructor

The primary role of the on-duty IBA instructor is to prevent injury to any flyer (coach or student) and to maintain safe practices throughout each flight session. These instructors have a wealth of knowledge, not only of the facility and operations, but also of teaching flying skills, and can be an extremely useful resource especially during your early years as a coach.

If you are unsure about a specific technique or drill that you are planning to use during a coaching session, discuss it with the instructor first and seek their advice. Even if you are an extremely competent and (more) experienced coach, it is important to note that the roles of spotting and the maintenance of safety lies with the local IBA instructor. Be sure to understand your role as a coach and the instructor's qualifications, which may limit what activity can be conducted within the tunnel. Respect this fact and work together.

If during a tunnel coaching session there is the requirement for the instructor to enter the airflow to assist your student, you will need to understand your role in supporting him/her, and if you are flying, you are to position yourself on the net ready to support as required.

### Flight Equipment

The proper flight equipment is essential to safe and successful performance in the wind tunnel. The flight gear that is used must be selected for comfort and fit and must be worn correctly. This gear is comprised of a flight suit, soft-soled shoes (closed around the toe and heel), a helmet (open or full faced), goggles (where applicable), and ear protection.

As a coach, you will be required to assist the on-duty instructor to ensure that your students are correctly prepared for each tunnel session and for each flight. Any equipment that is showing signs of excessive wear should be changed. For example, an open jumpsuit can balloon apart, sending the flyer up in the column of air and/or making the flyer unstable and preventing a descent. Both situations are unnecessary hazards during a student's flight. You are to be vigilant during tunnel sessions to ensure that your flyers do not alter or remove pieces of equipment, such as their helmet, or unfasten their jumpsuit without your supervision, particularly during short debriefs. If they do, ensure that they correctly refasten their suit and correctly close their helmet visors prior to their next entrance in to the airflow.

### Emergency Procedures

Although not common, emergencies may occur at any time. While it is the responsibility of the facility staff to respond to any emergency in the most appropriate and timely manner, the standard procedures will vary depending on the facility, so you as a coach should be aware of these in case you are called upon to support the tunnel staff to ensure the

safety of the tunnel and its occupants. There are a number of different emergency scenarios that you should be aware of:

- **Injured Flyer.** If a flyer sustains an injury during flight, the on-duty instructor must be granted uninterrupted access to control the flyer in order to prevent any further injuries from occurring. During this situation, as a coach, you are to position yourself inside the tunnel in such a way as to allow the instructor direct access to spot or rescue the student. Even though your role does not directly involve spotting your students, your actions and how you coach can ultimately prevent an emergency situation from occurring. Therefore, understand the needs and limitations of your students and their ability to progress safely; avoid the spot in the first place! The instructor will, when appropriate, communicate with the airflow controller to shut down the tunnel by performing the emergency stop procedure and then call for assistance. The flyer should not be moved until the emergency services arrive and take full control and responsibility of the situation.
- **Violent Flyer.** In the rare case that a flyer turns violent at any time during a session, the instructor may call upon you to provide assistance. At no time should you become physical with the flyer to resolve the situation and if the flyer is attempting to harm you, you should move away and not retaliate. Flyers may be subject to unknown problems and require help and you should never provoke or fuel the violence. Other flyers should be removed from the area to ensure separation and to enable the tunnel to resume normal operations as soon as possible. After the situation is under control, any flyer who has been violent will probably be asked to leave the property immediately, and if they refuse to comply, the authorities will be notified.
- Injured Instructor. If you notice that the tunnel instructor sustains an injury during a session, you are to ensure that you and your student fly down to the net to allow the airflow controller to initiate the emergency stop procedure. If needed, emergency services should be called; flyers should be led out of the chamber and the injured instructor assisted as necessary. The instructor should not be moved until emergency services arrive and take full control and responsibility of the situation.

**Flight Chamber Emergency Exit Procedures**

In the event that fire or smoke is detected inside the flight chamber, either by visual means or by other senses, or by electronic means with an indication on the airflow controller's display panel, the following actions will be taken:

- If the wind tunnel does not automatically reduce speed and display an alarm message on the flight chamber display (depending on the facility) screen, the airflow controller will reduce the speed of the wind to lower all flyers down toward the net
- Flyers will be guided toward the exit doorway.
- The controller will immediately complete a full shut down.
- If there is still electrical power to the flight chamber, the staging area doors will be opened using the appropriate switch.

All employees and customers will be asked to remain outside the building at a rendezvous point until emergency services are on site and clear the building for entrance.

# PART 3

# COACHING SKILLS

## Warm Up and Stretching

Indoor skydiving is a physically demanding and intensive form of activity. Consequently, you and your flyers need to have an appropriate level of physical conditioning. As with any other physical sport, a correct warm up and appropriate preparation prior to commencing the activity is important to reduce the risk of injury and to optimize performance. This can be achieved through regular workout and fitness routines that exercise and strengthen the key muscle groups.

Depending on the specific activity, indoor skydiving requires you to use every muscle in your body, so we recommend that you and your students perform a proper warm-up lasting at least 10-15 minutes before entering the chamber. Your stretching routine should include all areas of the body: the neck, back, front, arms, legs, hips and shoulders. The IBA, in association with the muscle-performance training group, Axis Performance, has created an example warm up and work out plan that can be viewed and downloaded here.

## Delivering a Pre-Flight Safety Briefing

The points covered here are the baseline for your safety briefing and are consistent no matter the skill(s) you are intending to coach.


As an IBA coach, you have a high level of responsibility for leading by example and by consistently operating safely in accordance with your level of qualification and the recognized and published flight operating procedures. In particular, you have a specific responsibility to support the local tunnel instructor to maintain safety within the tunnel.

If at any time you feel a tunnel session is becoming unsafe, it is important that you immediately adjust the activity and avoid any unsafe practices. You are part of the overall safety team and you will be expected to adhere to the local safety policies and procedures, so you need to know them.

Be sure to communicate any concerns or questions with a member of facility's staff in order to be clear on their expectations. If you are unfamiliar with a new facility or the specific team member that you are paired with for a flight session, be sure to spend some time setting the expectations and understanding the boundaries. It will be an easier and more comfortable session for you and your student if you have taken the time to understand what is expected of you each time you enter the tunnel.

Prior to any coaching session, the tunnel instructor will need specific pieces of information so that he/she is aware of what to expect from you and your group. The information that the instructor will need is:

- Number of flyers/students
- The specific skills being coached to each student -- to ensure that the instructor is rated to spot the activity
- Any known wind speeds
- Time of each flight rotation
- Any individual or special assistance needed for any student

In addition, at the beginning of each session it is important to ensure that your student(s) also understand each element of their flight and the related safety issues. Adequate time must be allocated prior to each flight session to allow you as the coach, or the on-duty tunnel instructor, to cover this important information. At a minimum, the initial safety briefing must include the following:

- Pockets empty, loose articles (jewelry etc.) removed
- Flight equipment: One-piece jump suit – fully fastened, footwear (running shoes or similar, no open toe/heel shoes), gloves (optional), full face or open-face hard helmet with goggles, noting that helmets must be approved by the facility – fully fastened
- Entrance and exit procedures
- Understanding of the wind speed and demonstrating stability: What to expect when on the net, what to expect when high in the flight chamber
- Maintaining a stable body position: Remain in the briefed flying orientation, explaining that while you as the coach may stand, the student should not copy you unless briefed and specifically instructed to do so
- How to react if contact with the wall is made: Strong body position not allowing the walls to change your body shape or cause instability
- The role of the tunnel instructor: Where they may assist and what to expect during each flight, spotting and communication from the instructor

Any additional coaching points relevant to the skills you teach will be covered within the appropriate sections of this manual. Earlier sessions with novice students may require a longer safety briefing than those who have more experience. A flight session should not begin unless your student(s) are fully aware of these safety points.

## Delivering a Debriefing

Once a flight session has been completed, you should always perform a debriefing as soon as time allows. This will give both you and your student the opportunity to more easily recall the session and any specific areas that need to be discussed. Find a quiet area that is free from external distraction to conduct the debriefing, ideally one that has the ability to display the session's video.

Start the debriefing by giving your student the opportunity to talk through the session. Find out whether they thought the set goals were met, what they think they can change to improve in any areas, and if there is a specific movement they need to do differently to create a different outcome.

Once this process is complete, you should use the video to highlight specific areas that were covered in the initial discussion as well as areas that may not have been covered. The outcome of the session will determine the next steps.

If the student has achieved his/her goal successfully and is proficient at flying the specific skills set, then you should consult with the IBA instructor and request that the skills be approved and displayed on his/her personal flight chart.

## Hand Signals & Communication

It is often necessary for those working within the chamber to give direction, feedback, and commands in order to maintain a safe learning environment for the flyers. Due to the level of noise as well as the separation between the airflow controller, the coach and the instructor, non-verbal techniques are the primary means of communication while inside the tunnel. Therefore, a pre–briefing of the signals that may be used is vital to avoid any confusion. You will use a limited number of signals with inexperienced flyers and the most often used signals will be the ones used to get them into

a relaxed, neutral body position. You must adequately plan your session to include pre-briefing time prior to each flight session. This this will avoid confusion and lead to more desirable results.

Your interaction with more experienced flyers might include a broader range of signals that are designed to teach more advanced techniques, or prohibit unsafe behavior. When you are working with these types of flyers, you will find that they are able to assimilate more information during their pre–briefs.

Also, they are usually more relaxed and aware during their flight allowing the use of a greater number of signals. They may also be able to better understand gestures that were not specifically addressed before their flight. The placement of your hand signals is important so as to provide the flyer with the best chance of understanding what your specific requests are. During your briefing, you should explain what they can expect from you once inside the chamber, and where they can expect you to position the signals to which they should respond.

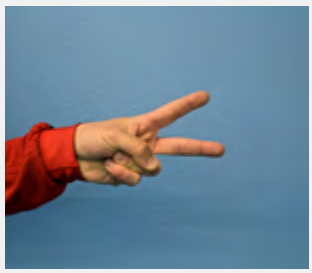
Clear and visible signals will encourage a better response from the person receiving the signal. Giving fast, unclear and imprecise signals can confuse students, which can often lead to incorrect responses.

## Flyer Hand Signals


*Start (ok to go)*

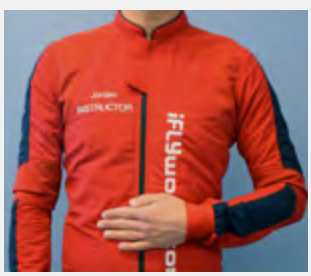

*Relax*


*Bend your legs*


*Straighten your legs*


*Chin up*


*Stop*

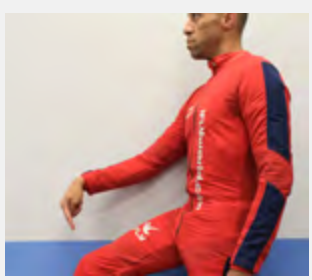

*Belly fly*

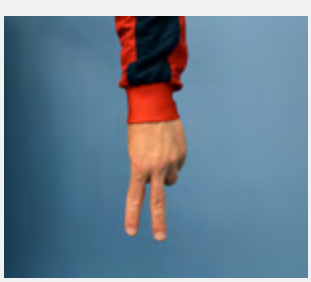

*Go up*

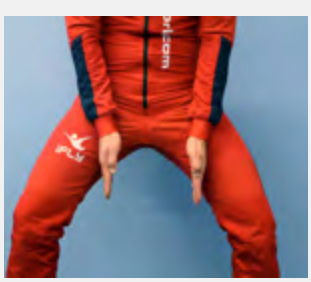

*Come down*


*Back fly*

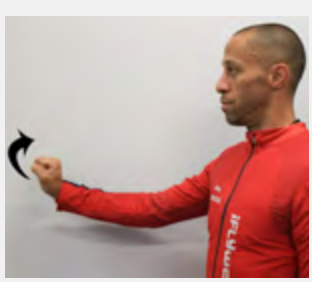

*Knees/legs up*

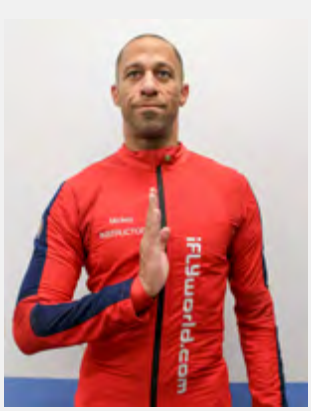

*Knees/legs down*


*Stand up*

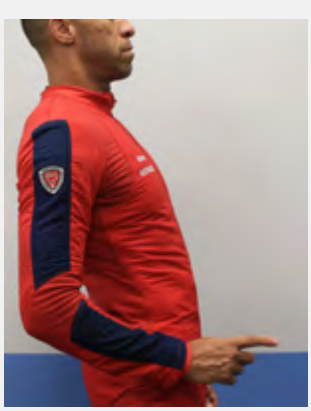

*Wider legs*

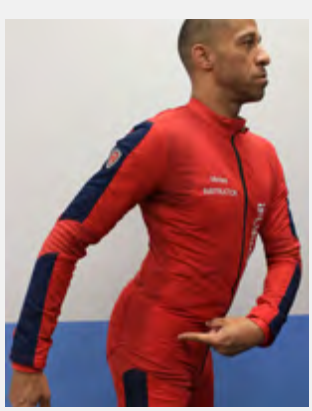

*Move slower*


*Move faster*


*Straight body position*


*Face this way*


*Hips forward*


*Hips back*

## Communicating with the Airflow Controller

Instructors, coaches and airflow controllers must be able to communicate with each other for a number of reasons, including the use of media to record the session, the timing of customer flights, managing difficult flyers, unsafe tunnel conditions, and most importantly, achieving the desired wind speed.

Although experienced airflow controllers can predict what airspeed an instructor and coach might want for their students, the instructor inside the tunnel will make the final decision on the actual wind speed. As a coach, you must always ensure that any wind speed adjustments, especially when increasing the speed, is agreed to by the on-duty tunnel instructor prior to the specific request being made to the airflow controller. The on-duty instructor is ultimately responsible for the safety of each tunnel session and increasing wind speed in some circumstances may increase the possibility of an undesirable situation. Verifying speed changes with the instructor will ensure that he/she is poised and ready to respond if the need arises.

In order for the operation to run as successfully as possible, the instructor, coach and airflow controller must act as a team to ensure flyers have a safe and enjoyable experience in the tunnel. As a coach, you may also encounter flyers who require a greater amount of support and this could mean the on-duty instructor may need to be more hands-on with the flyer in order to maintain control. In this case you may be required to provide the appropriate hand signals to aid in correcting the body position.


*Bring the wind up*


*Bring the wind down*


*Emergency stop*

# PART 4

# COACHING LESSON PLANS

## Level 1 Flight Skills

Irrespective of the specific coach pathway that you decide to take, you will be required to coach basic Level 1 Belly-Flying skills. These are fundamental flying skills and they are the foundation of every flyers' progression through all flying disciplines.

The following lesson plans provide you with the information needed to coach these skills. While they are sequenced in a way that supports a logical and safe good progression, the exact order is not prescriptive (unless specified in the pre-requisite skills) and you should exercise good judgment in your delivery based upon the student needs and capabilities. The plans are supported by the IBA Flight Tutorials that may be found within the relevant pages of www.tunnelflight.com and the *IBA Fundamentals of Coaching Guide.*

Throughout your coaching you should ensure that each session has a SMARTER goal that is agreed upon and clearly understood, and that the session is clearly briefed and debriefed.

## Level 1 Coach Lesson Plans

| IBA LEVEL 1 – BELLY-FLY<br>LESSON PLAN # 1 | |
|---|---|
| **Flying Skill** | Neutral & Stable Belly-Flying Position |
| **Desired Outcome** | At a neutral wind speed setting, flies with full control in a neutral belly-fly position, without excessive movement or rotation in any direction |
| **Pre-Requisites** | Signed-off as safe to progress through IBA Flyer Progression by an IBA instructor |
| **Reference Material** | Flight Tutorial # 1<br>Hand Signals<br>• Straighten Your Legs<br>• Bend Your Legs<br>• Relax<br>• Chin Up<br>• Go Up/Go Down<br>• Move Slower/Move Faster<br>• Stop |

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| **Key Points (flyer)** | **Basic Position**<br>• Your student's position should be arched, symmetrical, with head raised & legs shoulder-width apart<br>• Arms bent at a 90° angle with elbows at approximately eye level<br>• Toes pointed with knees slightly higher than hips<br>• Eye contact not necessary--it is more important to be looking straight ahead<br><br>**Advanced Position**<br>• Arched shape similar to the basic position<br>• Legs/feet similar to the basic position<br>• Elbows pushed down, hands closer together and chest raised<br>• Symmetrical position still necessary |
| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student is fully briefed on key points and safety factors<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Provide heading and reference point to complete the skills briefed<br>• Do not face your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Prior to transitioning from your feet to flying with your student, be sure to confirm your actions with the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance<br>• Always fly within your skill level to avoid any unnecessary risk to yourself or your student<br>• Avoid overloading your students with too much information during their early development and learning of basic skills<br>• The altitude at which you and your students fly should not exceed the students level of ability |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 01 Belly-Flying Neutral Body Position

### Pre-requisites

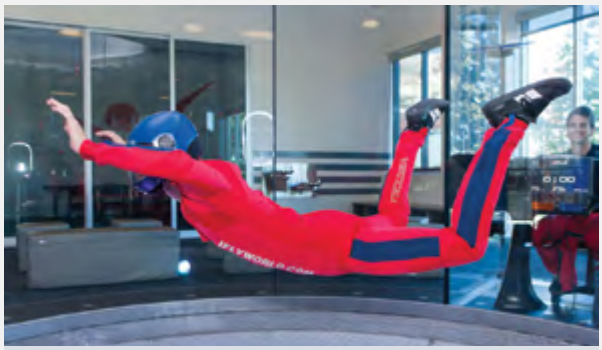
The belly-flying neutral body position is the first position you'll learn as your introduction into the world of body flying. First, your instructor will give you a briefing that will cover all the safety aspects of the tunnel, along with the basic information for beginning the neutral belly-fly position. This will include information on how to assume the correct position from the entrance and how the instructor will assist you in exiting once each flight is complete.

### Objectives

The primary objective is to be able to safely and successfully demonstrate a neutral belly-fly position while staying in the center of tunnel. You will need to maintain this position before you learn how to maneuver yourself around the tunnel; this includes learning to turn left and right, and flying up and down.

### Preparation

You will begin in the center of the wind tunnel. Depending on how stable you are, you may require the help of the instructor who will hold you to keep you stable while giving you specific hand signals to help you correct your position. When you are stable, the instructor will release you. At this point, you will aim to hold your position in the center of the flight chamber by making minor corrections as necessary.



Basic - off the net

### Technique and Drills

*Keep these key elements in mind*

**Basic (on or off the net)**

- Your body should have a generally arched shape with your head raised so that your eyes are looking forward
- For the arched position, your hips should be positioned so that they are lower than your shoulders and knees
- Your position should be symmetrical
- Arms should be bent at 90° with your elbows spread at about eye level
- Your knees should be shoulder-width apart for stability and slightly bent with your toes pointed

**Advanced "Mantis" (off the net)**

- Most of what you learn during the basic neutral flying position will carry over to learning the advanced "mantis" position
- Maintain the generally arched shape similar to the basic position
- Arms will transition from being at eye level to a more elbows-down, slightly below the shoulders position
- Elbows will be bent more, which will position your hands close together
- With the change of arm position, your chest will need to be higher with your head up to reduce drag around your upper body area
- Your legs will be positioned similar to the basic position: knees shoulder width apart, slightly bent and toes pointed

Belly-Flying Neutral Body Position

## 01 Belly-Flying Neutral Body Position

Mantis - off the net

Mantis - off the net

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout while holding the neutral position? Both basic and advanced position?
- What techniques did you feel comfortable with and what can you improve on next?

### What Skill Level Is Next?

Once you are stable in a neutral belly-flying position, the next step is to learn how to turn left and right, beginning with using just your upper body and then progressing on to learning how to turn using a more advanced technique of using your upper and lower body together to start and stop turns.

## IBA LEVEL 1 – BELLY-FLY
## LESSON PLAN # 2

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| **Flying Skill** | Belly-Fly Forward & Backward |

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| **Desired Outcome** | Successfully moves forward and backward using the correct upper and lower body inputs and stops between movements. Able to maintain altitude, stability and control throughout |

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| **Pre-Requisites** | Neutral & Stable Belly-Flying Position (on or off the net) |

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| **Reference Material** | Flight Tutorial # 2<br>Hand Signals<br>● Straighten Your Legs<br>● Bend Your Legs<br>● Relax<br>● Chin Up<br>● Go Up/Go Down<br>● Move Slower/Move Faster<br>● Stop |

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|---|---|
| **Key Points (flyer)** | **Basic Move**<br>● Extend and retract arms or legs to start and stop the movements<br>● Be aware of the speed of movement and when to initiate the correct input to stop the movement<br>● Maintain a symmetrical and arched shape for stability<br>● Heading management using small upper body adjustments<br>● Emphasize the act of stopping and returning to a neutral position prior to initiating a new move<br>● Eye contact not necessary; it is more important to be looking forward (to distance) for reference<br><br>**Advanced Move**<br>● Introduce combined upper and lower body input and how to balance both movements to ensure smooth flying<br>● Knees wide during forward movement and narrow for backward movement to accelerate the movement<br>● Understand the effect of additional speed and emphasis on stopping and maintaining good body position<br>● Maintain a symmetrical position throughout |

| | |
|---|---|
| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student is fully briefed on key points and safety factors<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Provide heading and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the door-way<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Prior to transitioning from your feet to flying with your student, be sure to confirm your actions with the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance<br>• Always fly within your skill level to avoid any unnecessary risk to yourself or your student<br>• Avoid overloading your students with too much information during their early development and learning of basic skills<br>• The altitude at which you and your students fly should not exceed the students level of ability |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 02 Belly-Flying Forward and Backward

### Pre-requisites

To learn forward and backward movement while belly-flying, you first need to be able to belly-fly in a neutral body position and hold that position stable and under control throughout.

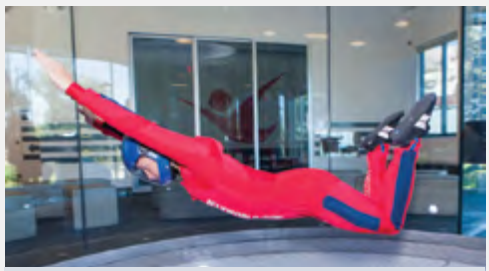
### Objectives

The primary objective is to be able to safely and successfully demonstrate forward and backward movements while belly-flying, remaining stable and on heading throughout.

### Preparation

You will start in the center of the wind tunnel, off the net, facing in a direction that does not point you toward a doorway or have a doorway behind you; this will prevent you from hitting the doors during the maneuver. Before beginning one of these movements, make sure that you are stable and under control so that you get the correct results during the maneuver. When signaled by your coach, you'll begin either a forward or a backward move until you approach the tunnel wall, where you will stop, return to a neutral body position and then begin a movement in the opposite direction.

Basic - forward movement



Advanced - backward movement

### Technique and Drills

*Keep these key elements in mind*

**Forward and Backward (Basic)**

- Slightly extend your legs in order to create lift at your lower body, which will give your shoulders the low body pitch required to generate the forward drive.
- For the backwards movement, you will need to bend your legs in order to reduce the lift at your lower body. This will give your shoulders the high body pitch required to generate a backwards drive.
- Manage your heading by making slight upper body inputs to counteract any unwanted heading changes during the maneuver.

**Forward and Backward (Basic) cont.**

- To stop a forward movement, you will need to bend your legs past your neutral position to almost initiating a backwards movement position. This will adjust your body pitch to engage the stopping motion. The opposite is true for stopping a backwards movement. Once you have stopped you will need to return your position to neutral in order to remain in place.

Belly-Flying Forward and Backward

## 02 Belly-Flying Forward and Backward

**Forward and Backward (Advanced)**

- Continue using the skills you learned from the basic technique
- When moving forward, you can increase the rate of movement by bending your arms and tucking your elbows toward your sides.
- Extending your legs more toward straight and widening your legs will help to create more body pitch to increase the rate of forward movement.
- When moving backward, you can increase the rate of movement by extending your arms out in front of you.

**Forward and Backward (Advanced) cont.**

- With your legs bent, narrow your knees until they are close to touching and also "drop" your knees down to help create a larger body pitch, giving you more speed.
- Stopping these movements will require you to reverse your movements like you did for the basic technique.

Forward Movement (adv.)

Backward Movement (adv.)

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout while moving forward and backward? Both basic and advanced techniques?
- What techniques did you feel comfortable with and what can you improve on next?

### What Skill Level Is Next?

Once you can successfully move forward and backward in either position, then you should begin to learn belly-flying up and down. Continue to improve your forward and backward skill up to advanced while learning the next skill.

## IBA LEVEL 1 – BELLY-FLY
## LESSON PLAN # 3

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| **Flying Skill** | Belly-Fly Left & Right Turns |

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| **Desired Outcome** | From a neutral belly-flying position, successfully completes turns in both directions, under control, using upper and lower body inputs in a balanced and controlled manner. Turns should be started and finished on a pre-determined heading for accuracy |

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| **Pre-Requisites** | Belly-Fly Forward & Backward (on or off the net) |

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| **Reference Material** | Flight Tutorial # 3<br>Hand Signals<br>• Straighten Your Legs<br>• Bend Your Legs<br>• Relax<br>• Chin Up<br>• Go Up/Go Down<br>• Move Slower/Move Faster<br>• Stop |

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| **Key Points (flyer)** | **Basic Turns**<br>• All turns should begin and end in the neutral position<br>• Initiate by first looking slightly in the direction of the desired turn and then bank the shoulders<br>• Lowest shoulder is the direction of the turn<br>• Arch maintained throughout for stability<br>• Opposite input to stop turn<br><br>**Advanced Turns**<br>• Simultaneous upper and lower body input in order to rotate around center point<br>• Upper body will work the same as for a basic turn. Lower body input is based upon the turn direction and the lowest shoulder<br>• For a right turn, the right shoulder will be lower and the unleveling of the knees will place the left knee lower than the right<br>• Use of opposite input to stop the turn |

| | |
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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student is fully briefed on key points and safety factors<br>• Appropriate wind speed setting is agreed to with the instructor and method of communicating adjustments during the session is understood<br>• Provide heading and reference point to begin and end the turns<br>• Avoid facing your student directly toward or away from the door-way<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Prior to transitioning from your feet to flying with your student, be sure to confirm your actions with the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance<br>• Always fly within your skill level to avoid any unnecessary risk to yourself or your student<br>• Avoid overloading your students with too much information during their early development and learning of basic skills<br>• The altitude at which you and your students fly should not exceed the students level of ability |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 03 Belly-Flying Turning

### Pre-requisites

To learn how to turn left and right while belly-flying, you first need to be able to belly-fly in a neutral body position, hold that position stable, and control any unwanted forward or backward movement.

### Objectives

The primary objective is to be able to safely and successfully demonstrate a left and a right turn while belly-flying, aiming to remain in control, stable and in the center of the wind tunnel throughout.

### Preparation

You will start in the center of the wind tunnel, off the net, facing your coach. Your coach will give you a signal to turn either left or right. You should plan the timing of your stop based on what turn you are doing (90°, 180°, 270° or 360°) and how fast or slow you are turning. Obviously, the faster you are going, the sooner you will need to begin your movements to stop. Once you have stopped, you can then start a turn in the opposite direction.

You should be stable and under control throughout all of your turns, using the skills you already learned to stay in the center of the wind tunnel.

### Technique and Drills

*Keep these key elements in mind*

**Turning (Basic)**

- Beginning in your neutral position, you will first learn to turn only using your upper body.
- Bank your shoulders, allowing the airflow to be deflected, creating the power to turn
- As you bank your shoulders, make sure that your spine continues to remain straight at all times and avoid bending your spine to one side or the other.
- Maintain your arch position throughout the turn.
- Manage the position of your legs during your turns to prevent any unwanted forward or backward drive during your turns.
- To stop the turn, you will need to reverse your movements and start a turn in the opposite direction. Doing this will allow you to stop the turn fairly quickly.

**Turning (Basic) cont.**

- If you over-turn or under-turn, you'll need to adjust the point at which you started your movement to stop. For example, start slightly sooner if you over-turned or slightly later if you under-turned.
- Once you've stopped the turn, return to your neutral position.

## 03 Belly-Flying Turning

**Turning (Advanced)**

- You will begin these turns in your neutral body position.
- For the advanced turns, you'll move your upper body and your lower body simultaneously.
- The goal will be to rotate around your center point. To do this, you'll move your upper body and lower body in opposite directions at the same time.
- Your upper body position for this turn will be the same as for the basic technique.
- Deciding which shoulder will be the lower shoulder will depend on which knee is the lowest knee. For example, for a left turn, your left shoulder will be lowered and your right knee will be lowered.
- As you lower the knee down in to the airflow, angle your lower leg placing the inside of your lower leg in to the airflow. Doing this will create a rudder effect that will help create more power for your turn.

**Turning (Advanced) cont.**

- Balancing your upper body and lower body movements is important in order to create an even rotation. Typically, you will require slightly more movement for your lower body than your upper body as there is more mass in this area to move.
- When you make any movements for your turns, whether you are starting or stopping, both movements should be introduced together at the same time, even though one is slightly more powerful than the other.
- The technique to stop your turns is similar to your basic method with regard to switching from one to the other and also with regard to over-turning or under-turning.
- Once you've stopped the turn, return to your neutral position.

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you stable throughout your turns?
- Were you able to stop at any pre-determined point?
- What did you feel comfortable with and what can you improve on during the next session?
- Were you able to control turns using both the basic and advanced methods?

### What Skill Level Is Next?

Once you can successfully turn left and right with control and stop correctly on any pre-determined heading, then you should begin to learn belly-flying up and down (slow and fast fall rate). Continue to improve your turning skills. Work on the advanced method. Make your turns a little faster each time you fly, while staying in control at all times and keeping all of your inputs, starts and stops as smooth as possible.

## IBA LEVEL 1 – BELLY-FLY
## LESSON PLAN # 4

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|---|---|
| **Flying Skill** | Belly-Fly Up & Down (Fall Rate Control) |

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| **Desired Outcome** | From a neutral belly-flying position, move upward, stop and then move downward within the column of air in a controlled manner. Each movement up and down must be completed without moving forward, backward or turning |

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| **Pre-Requisites** | Belly-Fly Left/Right Turns and Forward/Backward Movement |

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| **Reference Material** | Flight Tutorial # 4<br>Hand Signals<br>● Straighten Your Legs<br>● Bend Your Legs<br>● Relax<br>● Chin Up<br>● Go Up/Go Down<br>● Move Slower/Move Faster<br>● Stop |

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| **Key Points (flyer)** | **Upward Movement (slow fall rate)**<br>● Begin in a neutral position in the center of the tunnel<br>● Initiate the movement by flattening the torso<br>● Once movement begins, add balanced arm and leg extension to increase drag to continue to fly up<br>● Continuously manage heading with small upper body input changes<br>● Neutral belly-flying position to stop the movement<br><br>**Downward Movement (fast fall rate)**<br>● Start in either a neutral belly-flying position or from the slow fall rate position<br>● Initiate by arching the torso and then reduce drag by bending arms to bring wrists close to the head and bending legs<br>● Balance the movements of the arms and legs to avoid unwanted drive<br>● Chin Up |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student is fully briefed on key points and safety factors including the stopping points for upward movement and speed management<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Provide heading and reference point to complete the skills<br>• Take action to avoid student drift from the center tunnel position<br>• Avoid facing your student directly toward or away from the door-way<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Prior to transitioning from your feet to flying with your student, be sure to confirm your actions with the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance<br>• Always fly within your skill level to avoid any unnecessary risk to yourself or your student<br>• Avoid overloading your students with too much information during their early development and learning of basic skills<br>• The altitude at which you and your students fly should not exceed the students level of ability<br>• This skill requires students to fly up the center of the flight chamber, so extreme caution should be exercised in height management.<br>• Start with small adjustments and work up after consistency is demonstrated |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 04 Belly-Flying Up and Down (Fall Rate)

### Pre-requisites

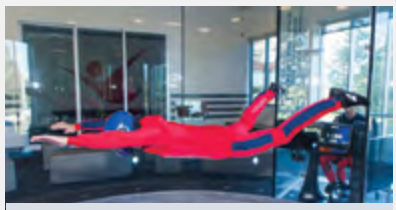
In order to learn upward and downward movement while belly-flying, you first need to be able to belly-fly in a neutral body position, hold that position stable, remain on heading, and control any unwanted forward or backward movement.

### Objectives

The primary objective is to be able to safely and successfully demonstrate upward and downward movements (slow fall rate and fast fall rate) while belly-flying, remaining stable, on heading and in the center of the wind tunnel throughout.

### Preparation

You will start in the center of the wind tunnel, off the net, facing in a direction that does not point you toward a doorway or put a doorway behind you; this will keep you from hitting the doors during this maneuver. When signaled by your coach, you'll first begin an upward movement. As you gain altitude in the flight chamber the speed of the airflow will gradually decrease at a specific height. Once you reach the peak of the upward movement where you can no longer gain more altitude, you will then start a downward movement and return to the initial altitude where you started. You should be stable and under control throughout both of these movements. Make sure that you use the skills you've already learned to maintain the correct heading and avoid flying yourself forward or backward toward the tunnel wall.



Basic - upward movement

Basic - downward movement

### Technique and Drills

*Keep these key elements in mind*

**Upward (Slow Fall)**

- Beginning in your neutral position, first flatten out your torso so that from your shoulders through your hips to your knees is flat.
- As your torso is adjusting and creating lift, you will need to extend your arms away from your torso, keeping them flat and avoiding the tendency to press down on to the airflow.
- Slightly extending your legs to balance out the lift between your upper and lower body will help your upward movement and will also help manage any unwanted backward movement. Note – extending your legs too much will mostly create a forward movement toward the wall. A delicate balance of leg movement is required.
- Manage your heading by making slight upper body movements to counteract any unwanted heading changes during the maneuver.
- To stop upward movement, you can return to a neutral belly-flying position, or if necessary, you can adjust to a downward (fast falling) position to help you stop the movement faster.

Belly-Flying Up and Down (Fall Rate)

## 04 Belly-Flying Up and Down (Fall Rate)

**Upward (Slow Fall) Cont.**

If you are performing this maneuver using the "Mantis" belly-flying position, the elements above will work very similarly except for the following: as you flatten out your torso, you will need to spread your elbows wide, placing your arms flat to the airflow before you extend your arms.

**Downward (Fast Fall)**

- You may start this maneuver from either a neutral position or from your upward movement position.
- First, your torso will need to be arched, slightly more than what is required for your neutral position.
- It's important when arching your body that your hips are the lowest point of your position.
- Your arms, if extended, will bend past the neutral position bringing your wrists closer to your shoulders, lowering your elbows down reducing the surface area presented to the wind.
- Your legs will bend either back to neutral or slightly more depending on what is necessary to avoid moving forward or backward.
- Make sure you keep your chin up for this skill, which will help to reduce your surface area, helping the downward movement.
- When you have reached your desired altitude inside the tunnel, you can return to a neutral belly-flying position, or if necessary, you can adjust to an upward (slow falling) position to help you stop the movement faster.

Basic - slow fall

Basic - fast fall

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout while moving up and down?
- What did you feel comfortable with and what can you improve on during the next session?
- Were you able to move and stop at a predetermined altitude consistently?

### What Skill Level Is Next?

Once you can successfully move up and down with control, then you should begin to learn belly-flying side slides. Continue to advance your up and down skills so that you can move to any altitude and stop and remain at that altitude. You may want to consider flying together with your coach; you can practice by trying to match your coach's rate and movement as he or she moves up and down.

## IBA LEVEL 1 – BELLY-FLY
## LESSON PLAN # 5

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|---|---|
| **Flying Skill** | Belly-Fly Side-Sliding |

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|---|---|
| **Desired Outcome** | From a neutral belly-flying position, uses balanced and controlled inputs with entire body to shift sideways from one side of the tunnel to the other and stop, in both directions. Side-slides should be accomplished on heading without gaining or losing any altitude |

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|---|---|
| **Pre-Requisites** | Belly-Fly Up & Down |

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|---|---|
| **Reference Material** | Flight Tutorial # 5<br>Hand Signals<br>● Straighten Your Legs<br>● Bend Your Legs<br>● Relax<br>● Chin Up<br>● Go Up/Go Down<br>● Move Slower/Move Faster<br>● Stop |

| | |
|---|---|
| **Key Points (flyer)** | **Basic movement**<br>● Begin in a neutral position, either in the center of the tunnel or to one side<br>● Initiate the movement with balanced upper and lower body inputs<br>● Slight lower leading side elbow, shoulder and knee to begin directing airflow<br>● Extend the trailing arm<br>● Manage heading by adjusting each input<br>● Stop side-slide with opposing input<br><br>**Advanced movement**<br>● Begin in a neutral position either in the center of the tunnel or to one side<br>● Using the same initial input as the basic method, increase the pitch of your body and apply entire torso pitch to accelerate the direction of travel<br>● With the additional speed, ensure your input to stop the side-slide is initiated sooner |

| | |
|---|---|
| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student is fully briefed on key points and safety factors including the stopping points for upward movement and speed management<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Provide heading and reference point to complete the skill<br>• Avoid facing your student directly toward or away from the door-way<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Prior to transitioning from your feet to flying with your student, be sure to confirm your actions with the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance<br>• Always fly within your skill level to avoid any unnecessary risk to yourself or your student<br>• Avoid overloading your students with too much information during their early development and learning of basic skills<br>• The altitude at which you and your students fly should not exceed the students level of ability<br>• This skill requires students to fly up the center of the flight chamber, so extreme caution should be exercised in height management.<br>• Start with small adjustments and work up after consistency is demonstrated |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 05 Belly-Flying Side Sliding

### Pre-requisites

Learning side slides is the final part of learning the eight points of motion for the belly-fly orientation. There are, however, other skills to learn utilizing these eight points of motion that you will get to later in your progression. Prior to learning belly-flying side slides, you will need to have a fair amount of control in your neutral belly-flying position, moving forward, backward, up, down and controlling turns with ease. By knowing these moves you will have already had exposure to using more than one part of your body for control, driving and stopping. This will be a key element for learning side slides.

### Objectives

The primary objective for this skill is to be able to safely control your body while side sliding from one side of the tunnel to the other and back again. Ultimately you will aim to complete this maneuver without coming into contact with the tunnel wall, while maintaining a constant heading and altitude throughout. Once you can complete this skill successfully, you can start combining your eight points of motion for other skills, such as super positioning.

Learning side slides will be one of the key belly-flying elements when it is time for you to fly with another person.

### Preparation

To begin this maneuver, it is best to position yourself toward one side of the tunnel, ideally away from any of the tunnel doorways, as these can create an obstacle for you. You will also want to be at approximately waist level above the net and on a heading that will allow you to see your instructor for guidance. The size of the tunnel you are flying in will affect how much energy or speed you will be able to create before having to stop prior to contacting the wall on the opposite side.

Basic - side sliding

### Technique and Drills

*Keep these key elements in mind*

**Basic**

- Initiate the slide using both your upper and lower body so that you can maintain a constant heading when you move. Using only one input can typically cause a turn.
- For a slide to the left, your left knee and your left elbow will be lowered down into the airflow to create the body pitch which will cause the drive. The opposite is true for a slide to the right.

**Basic cont.**

- Usually you will use slightly more knee input as the lower body is typically heavier than the upper body, so it will require slightly more drive.
- Once you reach the half-way point in the tunnel, return to a neutral position and prepare to stop.
- To stop the slide, simply lower the opposite knee and elbow (like starting a slide in the opposite direction). Once you stop, then you can return to a neutral position and set up for a slide in the opposite direction.
- Constantly manage your arched position at your torso to maintain the desired altitude; try to avoid any altitude changes.

Belly-Flying Side Sliding

## 05 Belly-Flying Side Sliding

Advanced

- Once you feel comfortable with basic side slides, you will want to introduce more of your body to the airflow which will ultimately give you more power or drive.
- For the slide to the left, you can lower you left knee and elbow slightly more, and raise your right elbow and right knee.
- When you un-level your elbows and knees more, you will expose more of your torso which will create more driving surface.
- Be aware that creating more drive can quickly increase the speed of the side slide (which is the goal), so you will need to be prepared for when to stop.
- Similar to how you stop the basic slide, you will need to oppose the entire input that you are creating to stop your side slide. Again, keep in mind that the faster you are traveling, the sooner you will need to apply the stopping input so that you can stop prior to contacting the wall.

Advanced - side sliding

Advanced - side sliding

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout while holding a constant speed, heading, and altitude?
- What techniques did you feel comfortable with and what can you improve on during the next session?

### What Skill Level Is Next?

The eight points of motion on your belly are the foundation of solid technique and are the key skills required for flying with others. Once you have mastered these, then you are in a position to begin learning 2-way skills and the 2-way formations that will prepare you for competition flying. It is at this point that your flying “career’’ begins!

If at this point you have not mastered entering the wind tunnel and exiting with little to no assistance from the tunnel instructor, then this will need to be your next goal.

## IBA LEVEL 1 – BELLY-FLY
## LESSON PLAN # 6

| | |
|---|---|
| **Flying Skill** | Belly-Fly Entrances & Exits |
| **Desired Outcome** | Safely enters the flight chamber in to a neutral belly-flying body position with minimal assistance from the tunnel instructor. Approach the doorway safely and in control at the optimal altitude and exit the tunnel with minimal assistance |

| | |
|---|---|
| **Pre-Requisites** | Belly-Fly Skills: Left/Right Turns, Forward/Backwards, and Up/Down Movement |

| | |
|---|---|
| **Reference Material** | Flight Tutorial # 6 & 7<br>Hand Signals<br>• Straighten Your Legs<br>• Bend Your Legs<br>• Relax<br>• Chin Up<br>• Go Up/Go Down<br>• Move Slower/Move Faster<br>• Stop |

| | |
|---|---|
| **Key Points (flyer)** | **Entrance**<br>• Begin with a stable stance in the staging area at the end of the doorway<br>• Chin up and enter in to the airflow hips low toward the center of the tunnel<br>• Counteract forward movement using arms forward and legs bent technique<br>• Use upper body input to maintain the correct heading to enter straight<br><br>**Exit**<br>• Start in a neutral belly-flying position, facing the door way at approximately 5 feet above the net<br>• Initiate a slow forward movement to the door, avoid reaching for the door frame<br>• Stop at the door, grasp the frame, bend knees down to stand and step out |

| | |
|---|---|
| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student is fully briefed on key points and safety factors including the stopping points for upward movement and speed management<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Provide heading and reference point to complete the skills<br>• Avoid facing your student directly toward or away from the door-way<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Prior to transitioning from your feet to flying with your student, be sure to confirm your actions with the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance<br>• Always fly within your skill level to avoid any unnecessary risk to yourself or your student<br>• Avoid overloading your students with too much information during their early development and learning of basic skills<br>• The altitude at which you and your students fly should not exceed the students level of ability<br>• This skill requires students to fly up the center of the flight chamber, so extreme caution should be exercised in height management.<br>• Start with small adjustments and work up after consistency is demonstrated |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 06 Belly-Flying Entrances

### Pre-requisites

Learning to enter the wind tunnel without the physical assistance of the wind tunnel instructor is one of the building blocks of solo belly-flight. You will need to have at least a stable belly-flying body position prior to being able to learn this skill because once you enter the flight chamber, you need to be comfortable in the position you assume. It is likely that you will have completed other belly-flying skills prior to learning the “un-assisted” entrance, but they are not required to do first.

### Objectives

The primary goal of this skill is to be able to set up in the tunnel staging area low and balanced on your feet and then safely enter the flight chamber into your neutral belly-flying body position, controlling your position so that you maintain approximately a waist-high altitude, and stopping any unwanted forward movement. In order to successfully complete this skill, you will want to aim to maintain control throughout so that the wind tunnel instructor does not need apply any assistance.

### Preparation

You will begin in the staging area, on your feet, in a low, squatting stance. Face the doorway approximately 1-2 feet back from the edge, with your arms out and ready to engage in the neutral belly flying position.

You can utilize one ore more flight rotations to practice an entrance followed immediately by an exit and repeat until you feel comfortable.

### Technique and Drills

*Keep these key elements in mind*

**Basic**

- Set up so that you’re squatting low and enter the airflow low.
- For balance, have one foot slightly in front of the other.
- Keep your chin up and prepare to thrust your hips forwards as you pass the threshold of the door.
- Your arms should be out so they catch airflow once you begin the entrance; this will help with control and better stopping power once you are in.
- Enter the airflow slowly so you don’t generate too much speed.
- As your feet leave the floor plate, be aware of stopping any unwanted forward drive by bending your legs and slightly extending your arms forward.
- Remain arched throughout the entrance so that you maintain a low altitude.

Basic entrance set-up

## 06 Belly-Flying Entrances

Basic entrance

Completed belly entrance

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout?
- Did the entrance feel smooth throughout?
- Were you able to control any unwanted movements?
- What can you work on during the next session to improve your entrances?

### What Skill Level Is Next?

While you are learning belly-flying entrances, you will also learn belly-flying exits. Every time you plan to fly on your belly, you will have the opportunity to work on getting better at both of these skills. Once you feel comfortable entering forward on your belly, ask your instructor about how to enter backwards or side-ways on to your belly. Other skills to work on next are 2-way belly-flying and super positioning.

## Static Progression Skills

An IBA Static Progression Coach can coach the skills associated with IBA Back-Fly Level 1 through to Static Flyer Level Pro as detailed within the IBA Flight Progression Chart. In order to commence coaching within the Static Progression, your student must have been signed off as an IBA Flyer Level 1.

At this stage, your flyers will have the knowledge required to learn new flight skills and orientations beginning with back-flying and working through the progression of static flight and as such, you will be required to have a firm grasp of each of the skills within this program.

The following lesson plans and the IBA Flight Tutorials will support you in the delivery of your coaching sessions. They are not necessarily prescriptive but should be viewed as a minimum requirement. In addition, you should ensure that each session has a SMARTER goal that is agreed and clearly understood, and that the session is clearly briefed and debriefed

## Static Progression Lesson Plans

| IBA LEVEL 2 – BACK-FLY<br>LESSON PLAN # 7 | |
|---|---|
| **Flying Skill** | Neutral & Stable Back-Flying Position |
| **Desired Outcome** | At a neutral wind speed setting, fly with full control in a neutral back-flying position, without excessive movement or rotation in any direction. This may require flying skills including heading control, forward and backward control in order to maintain position in the tunnel. |
| **Pre-Requisites** | Completed the IBA Level 1 Flyer Skills |
| **Reference Material** | Flight Tutorial # 14<br>Hand Signals<br>• Knees Up/Knees Down<br>• Relax<br>• Chin Up<br>• Go Up/Go Down<br>• Move Slower/Move Faster<br>• Arm Position<br>• Stop |

| | |
|---|---|
| **Key Points (flyer)** | • Your student's position should be spine straight and torso flat to the airflow<br>• Hips should be bent with thighs 90° to torso<br>• Legs bent at the knee 90°<br>• Knees, shoulder-width apart, arms pressed back on to the wind and chin upences to understand where to stop |
| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student fully briefed on key points and safety factors<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Provide heading and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• The altitude your students fly should not exceed the students level of ability<br>• It is common to have the wind speed low enough that the student doesn't leave the net until they have learned to control heading, forward and backward movements |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 14 Back-Fly Neutral Body Position

### Pre-requisites

Before learning back-flying, you will need to get a brief from your instructor on the differences between entering and exiting the flight chamber to a back-fly position as opposed to a belly-flying position. You will also get information on the specific back-flying safety items. In addition, you must demonstrate each of the eight points of motion for belly-flying and be able to comfortably fly them along with entering and exiting the flight chamber with minimal instructor assistance. Even though back-flying is a different skill set than belly-flying, it is required that you can demonstrate proficiency on your belly before venturing down this path.

### Objectives

The primary objective is to be able to safely and successfully demonstrate that you can hold a neutral and stable back-flying body position. Even though you will initially begin your training while on the net, the end goal for this skill is to show that you can fly this position while hovering at a constant wind speed off the net.

Back-flying is the most important position to be able to fly for any type of free-flying progression. It is considered to be your safety recovery position in the event of instability while learning other positions, so it is important that you become very comfortable in this orientation.

### Preparation

Once your instructor has assisted you into the flight chamber, he or she will position you in the center of the tunnel on your back in the neutral position as briefed. At this point the wind speed will be controlled as such to keep you on the net until you have acquired control. It is likely that you will learn how to use your control surfaces before ever coming up off the net. These steps are taken in order for you to be successful once the wind speed is increased.

### Technique and Drills

*Keep these key elements in mind when learning this drill*

Back-Fly - Neutral

- Your spine should be straight with your torso (from your hips to your shoulders) flat to the relative wind
- Your hips should be bent so that your thighs are at a 90º angle to your torso
- Your legs should be bent at the knee with your shin at a 90º angle to your thigh. Your shins should be parallel to the net.
- Your knees should be approximately shoulder-width apart with your toes pointed upward
- Your arms should extend out from the side of your body and bent at the elbow at 90º. This position should look something like a box shape
- Your arms should be pressed back slightly so they are almost parallel to the net, with the palms of your hands facing upward
- With your back flat to the airflow, your head should be tilted back to aid in this flat position and your gaze should be pointed upward toward the top of the tunnel
- Any corrections made should be small to begin with to learn the balance of control surfaces

Back-Fly Neutral Body Position

## 14 Back-Fly Neutral Body Position

Back-Fly - Neutral

Back-Fly - Neutral

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability while on your back, at a constant wind speed?
- What techniques did you feel comfortable with and what can you improve on during the next session?

### What Skill is Next?

Typically when you first begin to back-fly, your instructor will teach you the methods of controlling yourself while you are on the net before increasing the wind speed and teaching you how to rise off the net. With that said, depending on when you feel comfortable flying off the net in a neutral position, you may or may not have been given the information and already practiced how to control and maintain a heading, turn left and right along with flying forward and backward movement. If you have not learned these skills, then naturally these will be next for you. If you have had some exposure to these skills, then your instructor will encourage you to become more proficient with each of the movements and begin applying more wind speed so that you can quickly become confident at more realistic free-flying speeds.

## IBA LEVEL 2 – BACK-FLY
## LESSON PLAN # 8

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|---|---|
| **Flying Skill** | Back-Flying Forward & Backward |

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|---|---|
| **Desired Outcome** | Successfully move forward and backward using the correct upper and lower body inputs and stopping between movements. Able to maintain altitude, stability and control throughout. |

| | |
|---|---|
| **Pre-Requisites** | Neutral and Stable Back-Flying Position |

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|---|---|
| **Reference Material** | Flight Tutorial #15<br>Hand Signals<br>● Knees Up<br>● Knees Down<br>● Relax<br>● Chin Up<br>● Go Up/Go Down<br>● Move Slower/Move Faster<br>● Arm Position<br>● Stop |

| | |
|---|---|
| **Key Points (flyer)** | **Basic Move**<br>● Extending and retracting legs or arms to start and stop the movements<br>● Knowing how fast to travel and when to initiate the correct input to stop the movement<br>● Maintaining a symmetrical shape<br>● Heading management using small upper body adjustments<br>● Emphasising the act of stopping and returning to a neutral position prior to initiating a new move<br><br>**Advanced Move**<br>● Introduce the combined upper and lower body input and how to balance both to ensure a smooth maneuver<br>● Exaggerated inputs for faster movements<br>● Understand that with additional speed, the additional emphasis on stopping and the body position<br>● Maintain a symmetrical position throughout |

| | |
|---|---|
| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student fully briefed on key points and safety factors<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Provide heading and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Prior to transitioning from your feet to flying with your student, be sure to confirm with the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• The altitude your students fly should not exceed the students level of ability<br>• Understanding that the body movements made while on the net will be more pronounced than when off the net |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 15 Back-Flying Forward & Backward

### Pre-requisites

Back-flying forward and backward movement is one of the primary skills for back-flying that you will need to learn in order to control yourself while flying on your back.

Prior to learning how to move forward and backward while back-flying, you will need to be comfortable in the neutral back-flying position. It is quite possible that you will initially learn how to control this movement while still low to, or even on, the net before your instructor increases the wind speed to have you perform the skill off the net. It is common for people to learn how to control heading before learning to move forward and backward. However, each student learns differently, so it isn't a requirement to learn one before the other.

### Objectives

The primary objective is to be able to safely and successfully begin in a neutral back-flying position, fly yourself forward toward the wall, stop and then fly backward, under control the whole time. Ideally, if you begin learning this skill while you are still on the net, you will eventually want to be at a point where your instructor can increase the wind speed so you can become proficient at flying forward and backward off the net.

### Preparation

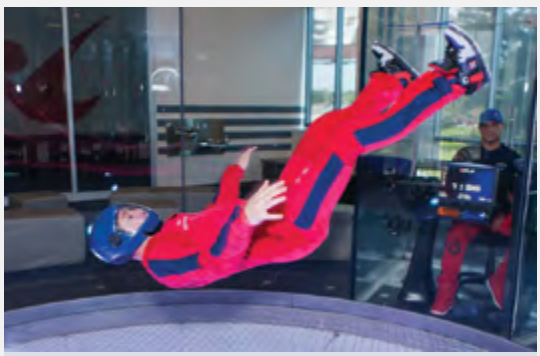
You should plan to enter the tunnel on your back into your neutral back-flying position. Ideally, you will want to position yourself either in the center of the tunnel or at one side, allowing space to complete either the forward or backward movement first. You will want to set yourself up so that you are not moving toward any doorway at any time, as they can be obstacles to overcome.

### Technique and Drills

*Keep these key elements in mind when learning this drill*

Forward

- Begin in a neutral back-fly position, allowing enough space to complete a forward movement
- Forward movement is considered a movement toward your head
- Initiate the movement by extending your legs, keeping your lower legs perpendicular to the direction of the airflow and avoiding raising your feet up too much as your legs extend
- As you straighten your legs, you will need to bend your arms so that your elbows tuck down toward the side of your body



Back-Fly - Forward

- Continuously manage your position to maintain the same altitude for the movement and avoid gaining too much lift or dropping down toward the net
- To stop the movement, reverse the inputs to almost initiate a backward move. Once your drive has stopped, return to a neutral back-flying position
- As you become more comfortable with this move, you can increase the speed of the wind, which can provide more power. You can also adjust your position slightly, by rotating your arms, placing your palms and forearm onto the wind so that your arms stretch down the side of your body. This along with extending your legs will increase the pitch of your body, which will vastly increase speed of your movement. Remember that the faster you are traveling, the more aggressive your stopping input will need to be to avoid contacting the wall

Back-Flying Forward and Backward

## 15 Back-Flying Forward & Backward

### Technique and Drills

*Keep these key elements in mind when learning this drill*

Back-Fly - Backward

Backward

- Begin in a neutral back-flying position, allowing yourself enough room to complete a backward movement
- A backward movement is considered a movement toward your feet
- Initiate the movement by bending your legs, bringing your knees toward your chest slightly and also pressing your feet down toward your bottom
- As you bend your legs, you will need to stretch your arms above your head slightly to help create a slight lifting sensation at your upper body. This will help adjust the pitch of your body to create the drive
- Continuously manage your position so that you maintain the same altitude for the movement and avoid gaining too much lift or dropping down toward the net
- To stop the movement, reverse the inputs to almost initiate a forward move. Once your drive has stopped, return to a neutral back-flying position
- As you become more comfortable with this move, you can increase the speed of the wind, which can provide more power. You can also adjust your position slightly, by fully extending your arms above your head and rolling your head and shoulders back, which will provide a slight arched shape at your upper body. This along with keeping your heels tucked toward your bottom will allow for a steeper body pitch, ultimately giving you more power. Remember, the faster you are traveling, the more aggressive your stopping input will need to be to avoid contacting the wall

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout each move and maintain the same heading and altitude at all times?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Are you at a point where you can have the wind speed increased and adjust your position to move faster?

### What Skill is Next?

Once you can comfortably move forward and backward on your back, you will want to continue working on the key foundations of your back-flying. What skill you learn next will depend on what skills your instructor has had you learn up until this point. If you have not yet learned how to control your heading in a neutral position and turn left and right, this will be the next skill for you to learn. If at this point you are able to hold a stable, neutral position, turn left and right and now move forward and backward, you will learn fall-rate control, flying up and down next.

Back-Flying Forward and Backward

## IBA LEVEL 3 – BACK-FLY
## LESSON PLAN # 9

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|---|---|
| **Flying Skill** | Back-Flying Left & Right Turn |

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|---|---|
| **Desired Outcome** | From a neutral back-flying position, successfully complete turns in both directions, under control, using upper and lower body inputs in a balanced and controlled manner. Turns should be started and finished on a pre-determined heading for accuracy. |

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|---|---|
| **Pre-Requisites** | Neutral and Stable Back-Fly Position |

| | |
|---|---|
| **Reference Material** | Flight Tutorial # 16<br>Hand Signals<br>• Knees Down<br>• Knees Up<br>• Relax<br>• Chin Up<br>• Go Up/Go Down<br>• Turn Left/Right<br>• Move Slower/Move Faster<br>• Arm Position<br>• Stop |

| | |
|---|---|
| **Key Points (flyer)** | **Basic Turns**<br>• All turns should begin and end in a neutral position<br>• Initiate by adjusting arms or lower to direct airflow in the opposite direction to that desired to turn<br>• Maintain a flat torso position<br>• Opposite input to stop turn<br><br>**Advanced Turns**<br>• Simultaneous upper and lower body input to rotate around center point<br>• Exaggerated inputs for faster movements<br>• Use of opposite input to stop the turn |

| | |
|---|---|
| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student fully briefed on key points and safety factors<br>• Appropriate wind speed setting agreed to with the instructor and understanding of communicating adjustments during the session<br>• Provide heading and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• The altitude your students fly should not exceed the students level of ability<br>• Understanding that the body movements made while on the net will be more pronounced than when flying off the net |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 16 Back-Fly Turns

### Pre-requisites

In order to begin learning back-flying left and right turns, you must be proficient in the neutral back-fly position. “Proficient” means that you can fly the neutral back-fly position in a controlled and stable way and you can control both forward and backward movement.

### Objectives

The primary objective is to be able to safely and successfully control both left turns and right turns and to be able to stop the turns on a pre-designated heading.

### Preparation

At the beginning, you will start on the net to demonstrate the correct neutral body position. Following the neutral position, you’ll adjust your body position to start a turn in a specific direction. Then once you’ve completed the rotation, you will adjust your position to stop the turn. You’ll practice this on the net, rotating in both directions. Then we’ll increase the wind speed, allowing you to perform the same skill off the net.

### Technique and Drills

*Keep these key elements in mind when learning this drill*

Beginner (on the net)

- To start a turn, point both ankles in the direction you want your lower body to travel. Your thighs should remain at 90 degrees to your torso with your torso straight throughout.
- To start a turn with your upper body, based upon the direction you want to travel, rotate one arm, placing the palm of that hand into the wind while extending that arm to “push” your upper body in the opposite direction. Your opposite arm will bend with your hand above your head and again, rotating the wrist so the palm of your hand is in the airflow.
- To stop the turn, reverse those moves to create a drive in the opposite direction, and maintain that position until the rotation has stopped.

Turning with Legs

Turning with Arms

Turning with Arms & Legs

Back-Fly Turns

# 16 Back-Fly Turns

## Technique and Drills

*Keep these key elements in mind when learning this drill*

Intermediate (off the net)

- To start a turn, point both ankles in the direction you want your lower body to turn. Increase the angle of your legs by slightly bending at the knee, lowering your ankles to use all of lower leg to help the turn. Your thighs should remain at 90 degrees to your torso with your torso straight throughout.
- Similar to the basic technique, position your arms to create the movement for the required direction.
- Coordinate the use of both your upper body and lower body positions to aim for a more center point turn. Ensure that the lower body is positioned so its drive is opposite to the drive created with your upper body.
- To stop the turn, reverse the positions of your lower and upper body to create a drive in the opposite direction and maintain that position until the rotation has stopped.
- Begin to include picking up grips after each turn and also presenting your leg grips to your coach for grips to be taken.

Advanced (off the net)

- Start and stop the turns with coordinated use of your upper and lower body.
- To increase the level of difficulty, you can practice turning and adjusting altitude to a pre-determined height at the same time, once you have mastered up and down movement.
- You can also learn to move forward / backward while you are turning.
- Prepare some back-fly routines with your coach to build specific formations.

## Post-Flight Questions / Suggestions

- How did your performance match your initial objectives?
- Were you able to maintain control throughout each turn? Were you able to stop with control on the correct heading?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Increase the difficulty level from beginner to intermediate or from intermediate to advance.
- Try multiple turns in succession – e.g. 90° left, 90° right, 90° right, 90° left.

## What Skill is Next?

Once you are able to turn left and right with control and you are able to stop on heading with control every time, the next step in the progression is to learn back-flying, forward and backward movements.

## IBA LEVEL 3 – BACK-FLY
## LESSON PLAN # 10

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|---|---|
| **Flying Skill** | Back-Flying Up and Down |

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|---|---|
| **Desired Outcome** | From a neutral back-flying position, move upward, stop and then move downward in the air column in a controlled manner. Each movement up and down must be completed without moving forward, backward or turning. |

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|---|---|
| **Pre-Requisites** | Back-Flying Left/Right Turns and Forward/Backward Movement |

| | |
|---|---|
| **Reference Material** | Flight Tutorial # 17<br>Hand Signals<br>• Knees Down<br>• Knees Up<br>• Relax<br>• Chin Up<br>• Go Up/Go Down<br>• Move Slower/Move Faster<br>• Arm Position<br>• Stop |

| | |
|---|---|
| **Key Points (flyer)** | **Upward Movement (slow fall rate)**<br>• Begin in a neutral position in the center of the tunnel<br>• Initiate the movement by slightly arching torso<br>• Once movement begins, add balanced arm and leg extension/widening to increase drag to continue to fly up<br>• Continuously manage heading with arm and lower leg input changes<br>• Neutral back-flying position to stop the movement<br><br>**Downward Movement (fast fall rate)**<br>• Start in either a neutral back-flying position or from the slow fall rate position<br>• Initiate by slightly de-arching torso and reducing extension at your arms and legs to reduce drag<br>• Use balanced inputs of the arms and legs to avoid unwanted drive |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student fully briefed on key points and safety factors<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Provide heading and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• If you plan to fly with your student, prior to transitioning from your feet to flying with your student, be sure to confirm with the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance<br>• Only fly to your skill level to avoid any unnecessary risk to yourself or your student<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• The altitude you and your students fly should not exceed the students level of ability<br>• Avoid balling up completely, make small changes to adjust fall rate in a controlled manner |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 17 Back-Fly Up and Down

### Pre-requisites

In order to begin learning upward and downward movement (fall rate adjustment) you must first be comfortable in the neutral back-flying position, confident that you can move forward, backward and can control your heading throughout every flight. Ensuring that you are comfortable with these movements first will mean that when you fly up inside the wind tunnel you can control yourself the entire time, keeping yourself away from the walls.

### Objectives

The primary objective is to be able to safely and successfully demonstrate that you can fly up and down while back-flying. You will need to demonstrate that you can perform these maneuvers while remaining in the center of the tunnel the whole time.

### Preparation

You will start on your back in the center of the wind tunnel, ensuring that your head and your feet are not pointed toward any doorway. Your instructor will have briefed you on height thresholds for you to be aware of, as you will plan to stage the altitudes that you will rise up to.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Beginner

- First you'll learn how to use your arms and legs together
- You will aim to maintain a constant level as the wind speed is adjusted
- You should aim to maintain heading throughout
- Make level changes to a specified altitude and back down to the net
- Level changes mixed with heading changes

Intermediate

- Mixing the use of your arms/legs with your torso
- Use of flattening your torso to help provide more input
- Level changes to a higher pre-determined altitude
- Level changes mixed with forward and backward movement

Advanced

- Level changes toward the top of the flight chamber
- Faster, more aggressive level changes
- Level changes mixed with turns, forward/backward and side slides
- Up and over (verticals) with your instructor

Back-Fly - Up (slow fall-rate)

Back-Fly - Down (fast fall-rate)

## 17 Back-Fly Up and Down

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout?
- Did you feel comfortable using your torso with your arms and legs to generate the most lift?
- Were you able to remain off the walls during the up and down movements?
- Do you feel ready to progress on to Intermediate / Advanced?

### What Skill is Next?

Once you are able to complete the exercises at a basic level, you will progress on to intermediate skills and then finally the advanced skills. Once you are able to comfortably move up and down while back-flying, you will learn back-flying side sliding next.

## IBA LEVEL 4 – BACK-FLY
## LESSON PLAN # 11

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| **Flying Skill** | Back-Flying Side Slides |

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| **Desired Outcome** | From a neutral back-flying position, using balanced and controlled inputs with entire body to shift sideways from one side of the tunnel to the other and stop, in both directions. Side slides should be accomplished on heading without gaining or losing any altitude. |

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| **Pre-Requisites** | Back-Flying Up and Down |

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| **Reference Material** | Flight Tutorial # 18<br>Hand Signals<br>● Knees Down<br>● Knees Up<br>● Relax<br>● Chin Up<br>● Go Up/Go Down<br>● Move Slower/Move Faster<br>● Indicate direction to move Left/Right<br>● Arm Position<br>● Stop |

| | |
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| **Key Points (flyer)** | **Basic Side slide**<br>● Begin in a neutral position either in the center of the tunnel or to one side<br>● Initiate the movement by utilizing balanced upper and lower body inputs<br>● Use similar inputs to those of turning but a different combination to deflect airflow evenly to one side<br>● Manage heading by adjusting/balancing each input<br>● Stop side slide with opposing input<br><br>**Advanced Side slide**<br>● Begin in a neutral position either in the center of the tunnel or to one side<br>● Using the same initial input as the basic method, increase the pitch of your body and apply entire torso and hip pitch to accelerate the direction of travel<br>● With the additional speed, ensure your input to stop the side slide is initiated sooner |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student fully briefed on key points and safety factors<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Provide heading and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• The altitude your students fly should not exceed the students level of ability |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 18 Back-Fly Side-Slides

### Pre-requisites

Before you begin to learn back-fly side-sliding, you will first need to be very comfortable in your neutral back-fly position, off the net at moderate to fast wind speeds, with controlled turns, forward, backward, and up and down movements. At this point, it's likely you will already know how to enter and exit the tunnel on your back, but it is not required.

### Objectives

The primary objective is to be able to safely and successfully side-slide from one side of the wind tunnel to the other, under control the entire time, maintaining a consistent altitude and heading, without contacting the wall at any time.

### Preparation

You will begin back-flying, off the net, at approximately waist level. You should be close to one side of the tunnel and positioned so that you are not facing with your head close to or pointed toward any doorway, as these are obstacles you want to avoid that are sometimes hard to see when you are back-flying.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Basic

- A side-slide will consist of combined movements with your upper and lower body
- For your lower body, rotate both feet so your heels are pointing in the direction you wish to travel
- Push your trailing arm away from your body slightly and your leading arm will shift to a position above your head to create drive for your upper body
- Manage your inputs so that you maintain a consistent heading
- Turn your head slightly so that you look in the direction of your side-slide
- Oppose all inputs in order to stop the slide
- You should plan to stop your slide early enough so that you don't come in to contact with the wall on the opposite side

Back-Fly Side-Slide

Back-Fly Side-Slide

## 18 Back-Fly Side-Slides

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Advanced

- A more advanced side-slide requires techniques to provide more body pitch which in turn produces a faster result. Keep in mind that the faster you travel, the sooner you must apply a stopping force so that you don't contact the tunnel wall
- Similar to the basic technique, you will need to combine upper and lower body inputs for the best results
- To increase the drive with your lower body, you will slightly bend your knees, driving your heels down in to the airflow as well as rotate your lower leg so that your shins are in the airflow, creating a wing surface from your feet to your knees
- To increase the drive with your upper body, push your trailing arm away from your body slightly, but rotate your leading arm so that your palm is now by your leading hip facing down to the airflow, and driving that elbow down in to the wind
- You can rotate your shoulders slightly, so that your leading shoulder is lower than your trailing shoulder
- All of your upper body inputs should be positioned so that your leading elbow through your shoulders to your trailing hand are close to being in a straight line

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout, maintaining a constant speed, heading and altitude?
- Did you feel the difference in power from the basic to the advanced technique?
- What techniques did you feel comfortable with and what can you improve on during the next session?

### What Skill is Next?

During the entire time you are learning back-flying skills, you will continually improve on the last skill you learned as you learn a new skill. It is common that you will learn how to enter and exit the wind tunnel on your back early on in your back-fly progression. If this is the case, then it is advisable that you become very comfortable flying all of the back-flying skills at wind speeds that you will likely be learning to sit-fly at. Discuss this with your instructor.

The next skill to learn at this point can either be the basic sit-flying position or 2-way back-flying. Both are extremely important skills to develop, especially if competing in free-fly is your ultimate goal!

## IBA LEVEL 2 – BACK-FLY
## LESSON PLAN # 12

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| **Flying Skill** | Back-Flying Entrances & Exits |

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| **Desired Outcome** | Safely enter the flight chamber in to a neutral back-flying body position with minimal assistance from the tunnel instructor. Approach the doorway safely and in control at the optimal altitude and exit the tunnel with minimal assistance |

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| **Pre-Requisites** | Back-Fly Up and Down |

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| **Reference Material** | Flight Tutorial # 19 & 20<br>Hand Signals<br>● Knees Down<br>● Knees Up<br>● Relax<br>● Chin Up<br>● Go Up/Go Down<br>● Move Slower/Move Faster<br>● Arm Position<br>● Stop |

| | |
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| **Key Points (flyer)** | **Entrance**<br>● Begin in the doorway holding the door frame facing back to the airflow<br>● Gently ease back on to the airflow with chin up and flat torso<br>● Release and stretch arms out in to the airflow to manage the descent<br>● Push off the floor and use balanced inputs to fly to the center of the tunnel<br><br>**Exit**<br>● Start in a neutral back-flying position, feet toward the door way at approximately 3 feet above the net<br>● Initiate a slow backward (feet first) movement to the door<br>● Allow feet to descend to the floor and use upper body slow fall rate technique to rotate to vertical |

| | |
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| **Key Points (coach) Focus Areas** | • On-duty instructor is briefed on the activity<br>• Student fully briefed on key points and safety factors<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Provide heading and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• The altitude your students fly should not exceed the students level of ability<br>• Maintain heading control with small movements of lower body |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 19 Back-Fly Entrance

### Pre-requisites

First, in order to begin to learn back-fly entrances, you'll need to be comfortable and signed-off by your instructor for all of the belly-flying maneuvers. Your instructor will also brief you on the basics of back-fly bodyflight. Typically you'll learn back-fly entrances at the same time that you learn the neutral back-fly body position.

### Objectives

The main objective is to be able to safely and successfully enter the wind tunnel in to your neutral back-flying body position with minimal hands-on assistance by the wind tunnel instructor.

### Preparation

At the beginning of every flight when you are back flying, you'll have the opportunity to practice this new entrance technique. If you wish to utilize one or multiple flight rotations working on just the entrance and exit skills, then that may be possible.
You will first need to set up in the doorway with your back facing the airflow, crouching down low and holding on to the doorframe. As you begin to lean back on to the airflow, keep your head tilted back so that your upper body is in a flat position to allow a slow descent down toward the net. Once your arms are extended as you lean back, you will release the doorframe with one hand at a time, placing each of your arms back on to the airflow, again ensuring a position to descend slowly to the net. As you lower yourself to the net, push away from the doorframe with your feet and finally raise your feet so that you assume the neutral back-fly position.

### Technique and Drills

*For a successful entrance, allowing for minimal assistance from your instructor, you should aim to do the following:*

- Start in a balanced stance at the edge of the entrance door edge, back to the airflow.
- Crouch down low.
- Lean back into the wind keeping the back-fly position with your head back.
- Keep your arms up to catch wind as you release the doorframe.
- Once in the wind in a back-fly position, gently push off the edge of the door with feet.

Back-Fly Entrance

Back-Fly Entrance

Back-Fly Entrance

Back-Fly Entrance

## 19 Back-Fly Entrance

### Post-Flight Questions / Suggestions

- How did you feel entering the tunnel using the different technique?
- Are you able to make the entrance smoother, slower/faster?
- Do you feel under control throughout the entrance?
- What techniques can you work on to ensure you reach all your goals?

### What Skill is Next?

Once you feel comfortable entering at one set wind speed, try entering at speeds slightly slower and slightly faster to allow for better overall range. The next skill to learn in your progression is back-fly exits.

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## 20 Back-Fly Exit

### Pre-requisites

Prior to learning back-fly exits in the tunnel, you'll need to be comfortable with the following:

- The neutral back-flying position
- Controlling your heading
- Forward and backward movement
- Up and down movement

In the beginning, while you are learning these maneuvers, your instructor will be more hands-on in assisting you to the exit door. Once you can comfortably perform all of the back-flying maneuvers, you'll be able to utilize these skills to fly yourself toward the doorframe and complete the exit procedure with little instructor assistance.

### Objectives

The primary objective is to be able to safely and successfully exit the wind tunnel, controlling your back-flying position throughout, with minimal hands-on assistance from the tunnel instructor.

### Preparation

You will start in the center of the wind tunnel in a neutral back-flying position. First, using your heading adjustment skills, you will first need to rotate yourself so that your feet are pointed toward the doorway, adjusting your altitude so that you are approximately 2-3 feet above the net (staying low will ensure that when your feet pass the doorframe they do not fall too far down to the floor).

Once you are positioned correctly, adjust your position to fly backwards (feet first) toward the doorframe. When your feet break the plane of the doorway, the lack of airflow will cause your feet to drop down to the door edge. This will begin the rotation of your body from a horizontal position to a vertical position. To finish the exit, you will extend your arms slightly and tilt your head back, creating a "cup" with your upper body area so that lift is created placing you upright. You can use your hands on the doorframe to steady yourself as you stand up.

It is important that the speed of your exit is slow throughout so that you can maintain control at all times.

### Technique and Drills

*In order to be successful in exiting the wind tunnel with minimal assistance from your instructor, you should aim to do the following:*

- Exit the wind tunnel going feet first with your feet landing on the edge of the doorframe.
- When you reach the doorframe ensure you stop the backward movement.
- Once your feet are on the floor at the doorframe, extend your arms to gain lift.
- As you stand up, keep your legs bent and aim to be vertical in a squatting position.
- Once you are vertical at the door, stand up and grasp the doorframe with your hands for stability if necessary

Back-Fly Exit

Back-Fly Exit

Back-Fly Exit

## 20 Back-Fly Exit

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain control throughout the exit procedure?
- What can you improve on during the next session?
- Do you still require assistance from the instructor for the exit?

### What Skill is Next?

Once you are comfortable with your back-flying position, maneuvering yourself, and entering and exiting the tunnel while back flying, the next skill you will learn is the belly-to-back barrel roll transition.

## IBA LEVEL 2 – BACK-FLY
## LESSON PLAN # 13

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| **Flying Skill** | Barrel Roll Transitions (half and full) |

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| **Desired Outcome** | From a neutral belly/back-flying position execute either a half barrel roll or full barrel roll transition and end in a defined neutral position. Transitions should be completed without gaining or losing any altitude, any unwanted drive toward the wall and remain on the original heading |

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| **Pre-Requisites** | Completed all individual Belly-Flying and Back-Flying skills |

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| **Reference Material** | Flight Tutorial # 64<br>Hand Signals<br>• Legs Straight<br>• Legs Bent<br>• Knees Down<br>• Knees Up<br>• Relax<br>• Chin Up<br>• Go Up/Go Down<br>• Move Slower/Move Faster<br>• Arm Position<br>• Stop |

| | |
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| **Key Points (flyer)** | • Back-to-Belly ½ Barrel Roll<br>• Initiate the transition using lower body (knee) inputs first<br>• Allow the upper body to follow and slightly extend arms forward to keep upper body high<br>• Stop on heading in a neutral back-flying position<br>• Focus on keeping legs bent/neutral to avoid typical forward drive<br>• Belly-to-Back ½ Barrel Roll<br>• Initiate the transition using lower body (knee) inputs first<br>• Allow the upper body to follow and slightly extend arms forward to keep upper body high<br>• Stop on heading in a neutral belly-flying position<br>• Focus on keeping legs bent/neutral to avoid typical forward drive<br>• Full Barrel Roll<br>• Initiate the transition using lower body (knee) inputs first<br>• Allow the upper body to follow and slightly extend arms forward to keep upper body high<br>• Use momentum of the rotation to continue through the back-fly orientation<br>• Stop on heading in a neutral belly-flying position<br>• Focus on keeping legs bent/neutral to avoid typical forward drive |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student fully briefed on key points and safety factors<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Provide heading, altitude and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Remain on your feet allowing the instructor to spot as necessary<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance<br>• The altitude for the transition should be low to the net<br>• Be aware of strong potential for forward (head first direction) drive<br>• Ensure that your student focuses on initiating all barrel roll transitions with their lower body first and allow their upper body to follow to prevent any head low pitch tendencies and forward drive |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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# 64 Full Barrel Roll

## Pre-requisites

There are two types of full barrel rolls: Belly-to-belly and back-to-back. Being proficient in both orientations is thus required so as to master this skill. A well-performed barrel roll involves particularly the use of your legs, therefore having good "leg awareness" in both orientations will facilitate the learning process (such as being able to perform leg turns). Finally, you will need to have completed the ½ barrel roll transitions prior to learning the completion of the full rotations.

## Objectives

Intend to accomplish the following while performing a full barrel roll:

- Keep the same level throughout the entire maneuver; do not sink, or gain altitude.
- Aim to stay centered in the tunnel. Avoid drifting forwards or backwards.
- You should end the barrel roll facing the same direction you began (remain on heading).

## Preparation

Set yourself up in the center of the tunnel, at roughly chest height above the net. Your instructor might want to hold you during the first attempts, so be sure to wait for the signal before beginning the maneuver. At first you will need to demonstrate 1/2 barrel rolls, specifically, from your belly to your back, then from your back to your belly, to ensure proper form. You will subsequently attempt the full barrel roll, making sure you keep your heading while maintaining level flight..

## Technique and Drills

*Keep these key elements in mind when learning this skill:*

- From your belly, bring your knee straight down, then cross it under the opposite leg. This will begin to roll you to your back.
- Simultaneously, straighten out your arm across your body in the direction of the barrel roll (if you are bringing your right knee down, then use your right arm, and vice versa). This will prevent any forward drive and assist in inducing the roll.
- From your back, bring one knee over the other and rotate back to your belly.

Once you link both belly-to-back and back-to belly transitions into one smooth, continuous move, you will have performed a full barrel roll.

- If you find yourself drifting forwards, your legs might be too straight, or your arms not far out enough.
- Keep your chin up throughout the entire maneuver in order to maintain a reference point and hold your heading!

Belly Fly

Barrell Roll

Back Fly

Full Barrel Roll

# 64 Full Barrel Roll

Back Fly

Barrell Roll

Belly Fly

## Post-Flight Questions / Suggestions

- Were you able to perform a full barrel roll in one continuous motion, starting either on your belly as well as your back?
- Were you able to maintain level flight throughout the entire maneuver?
- Were you able to remain centered in the tunnel? Do you find yourself drifting forwards? In this case, your legs might be too straight, or your arms not far out enough.
- Were you able to maintain a reference point and keep your heading?
- What could you improve on during the next session?

## What Skill is Next?

Once you are comfortable with full barrel roll maneuvers, you will most likely begin experimenting with other belly/back transitions or even tricks depending on your skill level. Never hesitate to ask your instructor what drills or moves could bring you closer to your own personal goals. Also, make sure to allow some time to yourself in the tunnel to be creative with what you know already. It is not only fun, but will make you a more confident flyer!

## IBA LEVEL 2 – BACK-FLY
## LESSON PLAN # 14

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| **Flying Skill** | Belly/Back Transitions Over the Feet |

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| **Desired Outcome** | Complete a transition beginning in either a belly or back-flying neutral position, over the feet and ending in the opposite neutral position. Transitions should be completed under control without any excessive drive toward the wall, any heading change, or gain/loss in altitude |

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| **Pre-Requisites** | Completed all individual belly-flying and back-flying skills |

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| **Reference Material** | Flight Tutorial # 23 & 24<br>Hand Signals<br>• Legs Straight<br>• Legs Bent<br>• Knees Down<br>• Knees Up<br>• Relax<br>• Chin Up<br>• Go Up/Go Down<br>• Move Slower/Move Faster<br>• Arm Position<br>• Stop |

| | |
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| **Key Points (flyer)** | **Belly-to-Back, Back Flip**<br>• At waist height above the net, initiate the transition by increasing surface area at upper body<br>• As lift begins, drive knees toward chest<br>• Allow rotation to occur and prepare for stopping<br>• Exaggerated input to stop with head back arms stretched and pressed back on to the wind with torso slightly arched, keeping knees bent<br>• Once rotation stops, return to a neutral position<br><br>**Back-to-Belly, Front Flip**<br>• At waist height above the net, initiate the transition by increasing surface area at upper body<br>• As lift begins, with knees bent, drive feet under your body with head back<br>• Allow rotation to occur and prepare for stopping<br>• Exaggerated input to stop with arms stretched forward on to the wind with torso slightly flat<br>• Once rotation stops, return to a neutral position |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student fully briefed on key points and safety factors<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Provide heading, altitude and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Remain on your feet allowing the instructor to spot as necessary<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance<br>• The altitude for the transition should be approximately waist height above the net<br>• Be aware of students straightening their legs, creating over-rotation as they transition to their back<br>• Be aware of student continuing to arch their torso, creating an over-rotation as they transition to their belly<br>• Explain to your student about avoiding a pause too long in a vertical orientation which can lead to a rapid descent toward the net |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 23 Back-to-Belly Front Flip

### Pre-requisites

This transition is one of the first that you will learn where you rotate over your feet. At first it can feel unusual to pass through a vertical orientation, especially in the early stages of learning vertical balance. However, learning this skill will help with learning vertical flight positions, such as sit-flying, later in your progression. Prior to learning this skill, you will need to be a confident belly and back flyer and have learned the ½ barrel roll transitions from your belly to your back and also from your back to your belly.

### Objectives

The primary objective is to be able to safely and successfully start in a neutral back-flying body position in the center of the tunnel and perform a back-to-belly front flip transition, ending in a neutral belly-flying position, still in the center of the tunnel, and at the same altitude and same longitudinal heading that you started on.

### Preparation

You will need to begin in a neutral back-flying position in the center of the tunnel, and as with all other new maneuvers, avoid having the doorway either in front of or behind you. You will want to start this transition a little higher off the net than you did with the barrel roll transitions to allow yourself enough room for your feet to pass underneath you as you come over.

### Technique and Drills

*Keep these key elements in mind when learning this skill:*

- Begin in the center of the tunnel in a neutral back-flying position
- Initiate this transition by inducing two separate inputs at the same time
- With your upper body, roll your head back slightly and press your arms back onto the wind, which will cause your upper chest to arch slightly. This will allow you to create lift at your upper body.
- With your lower body you will need to drive your feet down and underneath your torso, pulling them back behind you.
- Completing both your upper and lower body inputs at the same time will cause a rotation around your waist, which should be the center of the rotation.
- Keep you legs and knees wide throughout the rotation to allow for better stability as you pass through a vertical orientation
- As you approach the end of the rotation, plan to end on your belly in a neutral position
- To help stop the rotation on your belly, keep your legs bent and slightly extend your arms to provide the braking power
- Once the rotation has completely stopped, return to your neutral belly-flying position

Back-to-Belly Front Flip

Back-to-Belly Front Flip

Back-to-Belly Front Flip

## 23 Back-to-Belly Front-Flip

Back-to-Belly Front Flip

Back-to-Belly Front Flip

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to transition smoothly, staying on the initial heading and altitude?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Were you able to transition without any drive or over rotation?

### What Skill is Next?

It is common that when you begin to learn the back-to-belly front flip transition, your instructor will also teach you the belly-to-back backflip transition at the same time. This allows you to combine learning two skills during the same session and completing one skill automatically sets you up to learn the next skill right away. So although the next maneuver to learn once completing the back-to-belly front flip is the belly-to-back backflip, you will likely be at a point where you feel comfortable doing both of them at the same time. If this is the case, the next skill you will learn will be the belly-to-back back flip transition.

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## 24 Belly-to-Back Back Flip

### Pre-requisites

It is likely that you will learn this transition at the same time you learn the back-to-belly front flip transition as learning the two together will allow for easier set up and greater efficiency of your time.
Prior to learning this skill you will need to be a confident belly and back-flyer and have learned the ½ barrel roll transitions from your belly to your back and also from your back to your belly.

### Objectives

The primary objective is to be able to safely and successfully start in a neutral belly-flying body position in the center of the tunnel and perform a belly-to-back backflip, transition and ending in a neutral back-flying position, still in the center of the tunnel, and at the same altitude and same longitudinal heading that you started on.

### Preparation

You will need to begin in a neutral belly-flying position in the center of the tunnel, and as with all other new maneuvers, avoid having the doorway either in front of or behind you. You will want to start this transition a little higher off the net than you did with the barrel roll transitions to allow yourself enough room for your feet to pass underneath you as you pass over.

### Technique and Drills

*Keep these key elements in mind when learning this skill:*

- Begin in the center of the tunnel in a neutral belly-flying position
- Initiate this transition by inducing two separate inputs at the same time
- With your upper body, extend your arms forward and create a slight de-arch with your shoulders at your chest. This will allow you to create lift at your upper body.
- With your lower body, drive your knees down and underneath your torso, pulling them up toward your chest
- Completing both your upper and lower body inputs at the same time will cause a rotation around your waist, which should be the center of the rotation.
- Keep you legs and knees wide throughout the rotation to allow for better stability as you pass through a vertical orientation
- As you approach the end of the rotation, plan to end on your back in a neutral position
- To help stop the rotation on your back, keep your legs bent and slightly extend your arms to provide the braking power along with keeping your head back to ensure your spine is straight
- Once the rotation has completely stopped, return to your neutral back-flying position

Belly-to-Back Back Flip

Belly-to-Back Back Flip

Belly-to-Back Back Flip

## 24 Belly-to-Back Back Flip

Belly-to-Back Back Flip

Belly-to-Back Back Flip

Belly-to-Back Back Flip

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to transition smoothly, staying on the initial heading and altitude?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Were you able to transition without any drive or over rotation?

### What Skill is Next?

Ideally at this stage, you should feel confident with your belly-to-back backflip and also your back-to-belly front flip transitions as typically these transitions are taught at the same time. If this is not the case for you, begin or continue working on the transition that you are least comfortable with. The next transition in your progression will be the belly-to-back front flip.

**IBA LEVEL 2 – BACK-FLY**
**LESSON PLAN # 15**

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| **Flying Skill** | Back-Flying 2-Way and Verticals |

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| **Desired Outcome** | Demonstrate control while back-flying with another person, using correct techniques and complete vertical movement exercises. This may be completed as an individual with a coach/instructor or another competent flyer who is also a competent back-flyer. |

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| **Pre-Requisites** | All Individual Back-Flying Movements |

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| **Reference Material** | Flight Tutorial # 27 & 28<br>Hand Signals<br>• Knees Down<br>• Knees Up<br>• Relax<br>• Chin Up<br>• Go Up/Go Down<br>• Move Slower/Move Faster<br>• Arm Position<br>• Stop |

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| **Key Points (flyer)** | • Understanding where the other flyer is at all times and maintaining visual contact<br>• Begin with basic skills, one flyer stationary and the other performing skills and then switching<br>• Maintaining the same level when performing up and down skills<br>• Increase the complexity when the flyers demonstrate proficiency<br>• Understanding the timing of vertical drills and appropriate movements and speeds<br>• Emphasising the act of stopping and returning to a neutral position prior to initiating a new move<br>• If at any time a flyer loses situational awareness or demonstrates loss of control, fly low to the net and away from the situation |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student(s) fully briefed on key points and safety factors<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Provide heading, altitude and reference points to complete the skills briefed<br>• Avoid facing directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• If you plan to fly in place of a second flyer, prior to transitioning from your feet to flying with your student, be sure to confirm with the instructor<br>• Remind students of the importance of allowing the duty instructor unobstructed access to each flyer<br>• Flyers should fly what has been briefed and to their skill level<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• The altitude you and your students fly should not exceed the students level of ability<br>• Understanding of how to respond to un-expected burbles<br>• Explain to your student(s) the necessity to understand where each flyer is at all times to avoid un-necessary collisions<br>• Discuss the timing of any vertical moves and an appropriate plan for direction of the movement |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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# 27 Back-Fly 2-Way

## Pre-requisites

Before the tunnel instructor will allow you to back-fly with another flyer, you will need to demonstrate proficiency at certain skills. These skills are:

- Maintaining a stable, neutral back-flying position
- Heading control (left/right turns)
- Up and down control
- Forward and backward control
- Side-sliding
- Entering and exiting with minimal instructor assistance

Being proficient at these skills is important because when you are flying with another person, you will obviously have less space in which to maneuver and you must able to control your body in that smaller amount of space.

Other than the personal flying skills, your instructor will also look to see that you and your chosen flying partner are suitably matched to fly together so that the wind speed required is close to the same.

## Objectives

The primary objective is to be able to safely and successfully back-fly with another flyer at the same time, with each flyer maintaining control throughout the entire flight rotation. Both flyers should be able to orient themselves so that they can maintain visual contact throughout the flight and maintain the same altitude, avoiding any situations where one flyer is above another, which could cause unwanted collisions.

## Preparation

Both flyers will begin in the staging area. You will discuss with your instructor the most appropriate order for entering the chamber and then each flyer will enter, one at a time. After the first flyer has entered, that person will need to make sure there is enough free space for the second to enter.

Once both flyers have successfully entered the air flow, you will begin your 2-way flight low to the net, on the same level, before rising to your desired flying altitude.

## Technique and Drills

*Keep these key elements in mind when learning this skill*

Beginner

- Begin on-level with your partner
- Fly side-by-side with each other, as this is the easiest way to maintain eye contact while you become familiar with managing fall rate and movements
- Together practice going up and down while remaining side-by-side
- Play a slow follow-the-leader drill where one person performs a skill (e.g. 360° turn) and the other flyer follows along
- Be sure to always know where the doorways are as they are more difficult to see while you are back-flying

Back-Fly 2-Way Beginner

## 27 Back-Fly 2-Way

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Next Level

- Once you become comfortable, build some simple formations, so both flyers get the opportunity to present grips and also take grips on the other flyer
- Before you pick up any grips on your flying partner, be sure that you are both on the same level
- After you adjust heading to build different formations, be sure that you stop any movement prior to picking up any grips on your partner

BB-07 Back Side Body

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout and not collide unintentionally?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Are you ready to begin learning some more difficult back-flying formations?

### What Skill is Next?

Once you and your flying partner are comfortable back-flying with each other and you feel confident building formations and that you have a strong awareness of each other as you fly, the next skill is to begin learning vertical moves while back-flying.

## IBA LEVEL 2 – BACK-FLY
## LESSON PLAN # 16

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| **Flying Skill** | Walking |

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| **Desired Outcome** | At a neutral wind speed setting, walk safely in the tunnel and able to stop movement in a controlled manner |

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| **Pre-Requisites** | Signed-off as safe to progress through IBA Flyer Progression by an IBA Instructor |

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| **Reference Material** | Flight Tutorial # 13<br>Hand Signals<br>• Straight Body Position<br>• Face this Way<br>• Forward/Backward<br>• Hips Forward/Hips back<br>• Relax<br>• Chin Up<br>• Move Slower/Move Faster<br>• Arm Position<br>• Stop |

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|---|---|
| **Key Points (flyer)** | • Maintain a straight vertical position throughout to avoid unwanted drive<br>• Take small steps initially until control and comfort is established<br>• Chin up, eyes looking forward<br>• Lean upper body in the opposite direction to the desired direction of travel, keeping your hips over your heels<br>• Keep your weight on your heels and not your toes<br>• When using arms to increase the speed of the drive use caution and avoid excessive pitch |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student fully briefed on key points and safety factors<br>• Appropriate flight gear issued to the student<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Provide heading and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance<br>• Use caution with excessive student body pitch resulting in loss of control<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• Start wind speed low (belly speeds) until the student demonstrates control and understanding<br>• Student to stop before reaching the tunnel walls, leaving enough room to complete the maneuver |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 13 Walking

### Pre-requisites

Prior to learning how to walk inside the tunnel, you will first at a minimum need to be comfortable completing all of the eight points of motion while belly-flying. Also, if you are planning to begin learning to sit-fly after learning to walk, you will need to be able to comfortably back-fly all of the eight points of motion. These skills, along with a safety briefing on walking and being in a vertical position in the tunnel, will prepare you for learning this skill.

### Objectives

The primary objective is to be able to safely and successfully enter the tunnel on your feet, and comfortably walk forward and backward using the airflow to assist your movement while avoiding fighting your body against the wind. You will also learn how to use your arms to control the speed of your movements, understanding how they can assist with moving sideways and with controlling your heading. These skills will be key elements in helping you be successful with all of your upright flying (for example, sit-flying).

### Preparation

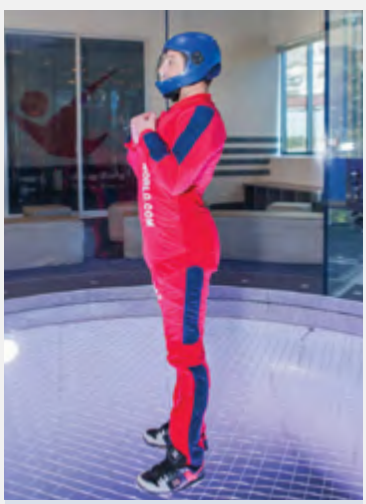
You will start in the doorway facing the airflow. Once your instructor signals you to enter, you will step in and approach the center of the tunnel. Your instructor will have you adjust your heading so that you are not facing a doorway, or have one behind you, as these can present an obstacle when learning this skill. During the early stages of learning how to walk, you will notice that the wind speed is set low to help you with control. Once you have demonstrated control and stability, the instructor will raise the speed of the wind in small increments.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Forward

- Begin in a neutral position with your body completely straight and not leaning onto the wind at all
- Keep your arms bent and tucked into your torso
- Your hips should remain over your feet the entire time to keep you planted to the net
- While flexing around your hips, lean your upper body back, placing the top of your spine and shoulders on to the airflow, this will direct the airflow, causing a forward drive
- As you feel the “push” of the wind moving you forward, you will begin to take small steps in that direction as you normally would when walking
- To stop the forward movement, switch your position past the vertical, neutral position and lean forward, placing your chest on the airflow while at the same time adjusting your footing to stop moving



Walking - Neutral

# 13 Walking

## Technique and Drills

*Keep these key elements in mind when learning this skill*

Backward

- Begin in a neutral position with your body completely straight and not leaning onto the wind at all
- Keep your arms bent and tucked in to your torso
- Your hips should remain over your feet the entire time to keep you planted to the net
- While flexing around your hips, lean your upper body forward, placing your chest and the front of your shoulders onto the airflow. This will direct the airflow, causing a backward drive
- As you feel the "push" of the wind moving you backward, you will begin to take small steps in that direction as you normally would when walking
- To stop the backward movement, switch your position past the vertical, neutral position and lean backward placing your upper back and shoulders on the airflow while at the same time adjusting your footing to stop moving

Walking - Forward

Advanced Walking

- As you begin to feel comfortable walking forward and backward, the instructor will increase the speed of the wind closer to more free fly type speeds
- As the speed of the wind increases, you will notice each input you make has more power and can produce much faster movements
- Be sure to control your body position to avoid contacting the walls
- You can raise your arms up above your head and as you lean in to the wind, the extension of your arms will be an extension of the wing you are flying, creating more power, which is more speed
- You can place yours arms down on to the wind similar to the position of sit-flying and begin to learn how to utilize your upper body for movements while still walking

Walking - Backward

## Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout, remaining on your feet and in control at all times?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Were you able to increase the speed of the wind and continue to stay in control and use your arms extended to feel the extra power?

## What Skill is Next?

Olf you're learning how to walk in order to coach belly-flying, then we encourage you to learn the neutral back-flying position next or learn how to transition from your feet to you neutral belly-flying position and then back to your feet again. Discuss these with your instructor.

If you are progressing down the free-flying path, you should already be confident back-flying, so the next skill you will learn is the neutral sit-flying position. Discuss with your instructor what skill is the best for you to begin learning next.

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## IBA LEVEL 3 – STATIC PROGRESSION
## LESSON PLAN # 17

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|---|---|
| **Flying Skill** | Neutral and Stable Sit-Flying Position |

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| **Desired Outcome** | At a neutral wind speed setting correctly fly a neutral and stable sit-fly position without movement or rotation in any direction and in the correct flying position. There are variations on this position that are used for added stability and resiliency in flight and taking "docks" such as the sit daffy and knee flying. Sit-flying is typically taught at lower speeds from the net and can even be started using repetition of the Level 2 over-the-feet transitions or even carving. |

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| **Pre-Requisites** | Completed IBA Back-Flying Level 2 |

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| **Reference Material** | • Flight Tutorial # 29<br>• Hand Signals<br>• Face this way<br>• Knees up/Knees down<br>• Hip Positioning<br>• Relax<br>• Chin Up<br>• Slow Down/Speed Up<br>• Arm Position<br>• Back Fly/Transition<br>• Stop |

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| **Key Points (flyer)** | • Maintain a symmetrical body position<br>• Feet flat on the net, knees bent at 90°<br>• Thighs parallel to the net, hips bent at 90°<br>• Straight back with shoulders slightly pressed back<br>• Arms out stretched flat to the wind, bent slightly and chin back<br>• Make small corrections to balance the position<br>• Understanding to bail to a neutral back-flying position if they become unstable |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student fully briefed on key points and safety factors<br>• Appropriate flight gear issued to the student<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood. Begin on the net at slower speeds prior to increasing<br>• Student must demonstrate control before increasing the wind speed<br>• Prioritize correcting the body position before increasing the speed of the wind.<br>• Provide heading, altitude and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance. Allow them direct access to your student at all times<br>• Use caution with excessive student body pitch resulting in loss of control<br>• Emphasis on bail process to a neutral back-flying position and never to a belly-flying position<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• Start wind speed low (enough to support vertical position) until the student demonstrates control and understanding<br>• Avoid reaching for the net with your feet, aggressively changing the angle of your feet, or standing quickly for stability |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 29 Sit-Fly Neutral Body Position

### Pre-requisites

Before attempting the neutral sit-fly position, you should be able to maintain a stable back-fly position, controlling any movements while flying at higher speeds. You should be comfortable with all points of motion while back-flying at these speeds. You will also need to be able to walk in to and out of the tunnel unassisted.

### Objectives

The objective is to establish and maintain a neutral sit-fly position. The position should be flown in place, on level, and on a consistent heading. The ultimate goal is to be able to sit-fly, stable off of the net, flying in wind speeds that are most common when free flying.

### Preparation

Correct Body Position: Your head should be positioned so that you are looking forward, your chin back. Your shoulders should be back, chest slightly arched, and spine straight with an arch in the upper back. Your arms should be placed at shoulder height, with your elbows slightly bent. Your hips and knees should both be at 90º angles, with your toes pointing forward and your feet flat. It should look as if you're sitting in a chair.

You can practice the correct body position by sitting on a bench against a wall. When it is time to fly, walk into the tunnel and assume the practiced position with your feet planted on the net and arms spread as briefed. Always maintain 90º at your hips and knees; if you feel unstable or any unwanted drive is produced, transition to your back, stabilize and then use the trained back-to-sit front flip transition to recover to the sit-flying position. Avoid opening your hips or standing up as it can create a large forward drive if uncontrolled.

### Technique and Drills

*Keep these key elements in mind when learning this drill*

To build the correct body position, you should start by practicing with your feet planted on the net and then work on exercises to isolate different parts of the body flying in the correct orientation. Some examples of these exercises are:

- Sitting on the net with no arms in the wind
- One leg up
- Stability exercises with your instructor
- Movements forward and backward
- Range of motion
- Bending and extending your arms to find lift
- Feeling what happens when you move your hips forward and backward

Sit-Fly Neutral

As you become more comfortable with these exercises, the wind speed should slowly be increased to the point where your feet come off the net and you can practice maintaining level, heading, and position within the tunnel. Remember the importance of keeping your hips and knees at 90 degrees. Eventually, you should be comfortable flying at speeds that are most commonly used for free flying.

Sit-Fly Neutral Body Position

## 29 Sit-Fly Neutral Body Position

### Post-Flight Questions / Suggestions

- How did your performance match your initial objectives?
- Were you able to maintain control throughout an entire flight rotation?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- How was your endurance during the session? Were you able to rely more on your legs and less on your arms for lift and support to help avoid tiring yourself out?
- Do we need to continue to visit foundation maneuvers such as back-flying or walking?

Sit-Fly Neutral

### What Skill is Next?

Once you have a stable, neutral sit-fly position you will progress on to learning different directions of movement. The next skill will be forwards and backwards movement while sit-flying.

## IBA LEVEL 3 – STATIC PROGRESSION
## LESSON PLAN # 18

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|---|---|
| **Flying Skill** | Sit-Flying Forward and Backward |

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| **Desired Outcome** | Successfully move forward, stop and move backward and stop using the correct upper and lower body inputs and maintain control throughout. When any forward or backward movement is conducted, the flyer should remain at the same altitude and in a stable body position for each movement. |

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| **Pre-Requisites** | Neutral and Stable Sit-Flying Position |

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| **Reference Material** | Flight Tutorial # 30<br>Hand Signals<br>• Face this way<br>• Knees up/Knees down<br>• Hip Positioning<br>• Relax<br>• Chin Up<br>• Slow Down/Speed Up<br>• Arm Position<br>• Back Fly/Transition<br>• Stop |

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| **Key Points (flyer)** | **Basic Forward & Backward**<br>• Maintain a symmetrical body position<br>• Stay low to the net to perform the skill and make slight adjustments for slow movements to begin<br>• Keep lower body neutral and use upper body<br>• Lean upper body back to the wind like walking forward to create the necessary drive<br>• To stop a forward drive, lift your knees up, reducing surface area and return to the net without reaching for it<br>• Lean upper body forward, chest toward the wind for backward drive<br>• To stop use the opposing input<br>• To stop a backward drive, use the opposing input<br>• Bail to a neutral back flying position if they become unstable<br><br>**Advanced Forward & Backward**<br>• Maintain neutral position<br>• Initiate forward drive using upper body and apply heels down and slightly pushed forward to exaggerate the input<br>• For backward drive, lean upper body chest toward the wind, wide legs and feet slightly pushed down to exaggerate the input<br>• Each movement should be a gradual progression to understand stability and limits |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student fully briefed on key points and safety factors<br>• Appropriate flight gear issued to the student<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood. Begin on the net at slower speeds prior to increasing<br>• Student must demonstrate control before increasing the wind speed<br>• Prioritize correcting the body position before increasing the speed of the wind<br>• Provide heading, altitude and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance. Allow them direct access to your student always<br>• Use caution with excessive student body pitch resulting in loss of control<br>• Emphasis on bail process to a neutral back-flying position and never to a stand or belly-flying position<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• Ensure your students are taking gradual steps to increase movement speed and are not rushing<br>• Sit-fly forward and backward movements can create an increased amount of drive, so starting and stopping slowly and smoothly is important |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 30 Sit-Fly Forward and Backward

### Pre-requisites

Prior to learning sit-fly forward and backward, you will need to have learned all of the required belly-flying and back-flying skills. You will also need to have a stable neutral sit-flying position. Like other orientations, you will begin each new skill from your neutral body position, so you will need to make sure that your neutral position is solid. While you are learning the neutral sit-fly position, your coach might also teach you how to transition from your back-fly to sit-fly and also from your sit-fly to your back fly-positions. Although not necessary, knowing these movements can be helpful when it comes time for you to learn forward and backward moves, as you have had practice controlling the upper surface of your back.

### Objectives

The primary objective is to be able to safely and successfully begin in a neutral sit-flying position off the net, move forward, stop and move backward, and stop, returning to neutral.

### Preparation

You will begin on one side of the tunnel, in your neutral sit-flying position, at a wind speed that will allow you to be off the net comfortably. Your back should be close to the wall, leaving the majority of the tunnel in front of you for movement. Once you have completed your forward move, you will want to stop on the opposite side of the tunnel, leaving the same amount of space between you and the wall in front of you to prepare for a backward move.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Forward

- From a neutral position, your lower body will remain neutral until you are comfortable and have shown proficiency with the movement
- Push your shoulders back, placing your upper back more into the airflow to produce drive
- Maintain shoulder-width apart with your legs/knees
- Your arms will remain in a neutral position throughout
- Keep your head rotated back with your eyes looking forward
- To stop the forward drive, you will move your upper body forward past neutral, leaning your chest into the airflow to oppose the input, as you would to start a backward movement
- To increase the speed of the movement once you have demonstrated the ability to do so, you can push your heels down and slightly forward to help create more of a wing during the forward movement

Sit-Fly Forward

Sit-Fly Forward

Sit-Fly Forward and Backward

## 30 Sit-Fly Forward and Backward

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Backward

- Begin in a neutral position, similar to the forward. You will only use your upper body and keep your lower body neutral until you have learned the movement and are comfortable enough to introduce more power
- You will need to spread your knees slightly wider than shoulder-width apart in order to allow the airflow to meet your chest
- Lean your body forward, presenting your chest to the airflow
- Your arms will remain out in their neutral position to begin
- As you lean forward, you will need to rotate your head back slightly so that you can look forward and not down
- To stop the movement, you will push your upper body back past neutral, leaning your upper back in to the airflow, similar to beginning a forward movement
- To increase the speed of the movement once you have demonstrated the ability to do so, you can push your heels down and slightly backward, exposing the inside of your legs to the airflow to help create more of a wing during the backward movement.

Sit-Fly Backward

Sit-Fly Backward

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout each movement without gaining or losing altitude, or changing heading?
- Are you ready to increase the speed of the movements by applying more advanced techniques?
- What can you work on to improve the movements or the stop?

### What Skill is Next?

Once you are comfortable flying forward and backward while sit-flying, then you're ready to begin learning left and right turns along with up and down movement.

## IBA LEVEL 3 – STATIC PROGRESSION
## LESSON PLAN # 19

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| **Flying Skill** | Sit-Flying Left and Right Turns |

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| **Desired Outcome** | Successfully complete turns in either direction under control throughout using upper and lower body inputs in a balanced and controlled manner. Turns should be started and finished on a pre-determined heading for accuracy. |

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| **Pre-Requisites** | Neutral and Stable Sit-Flying Position |

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| **Reference Material** | Flight Tutorial # 31<br>Hand Signals<br>• Face this way<br>• Knees up/Knees down<br>• Hip Positioning<br>• Relax<br>• Chin Up<br>• Slow Down/Speed Up<br>• Arm Position<br>• Back Fly/Transition<br>• Stop |

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| **Key Points (flyer)** | **Basic Turns**<br>• Begin in a neutral position in the center of the tunnel<br>• Gain lift in a neutral position before turning if doing a turn off the net, otherwise lean back slightly on heels before turning on the net<br>• Use lower leg shifting foot out in the direction of desired rotation, or tilt arms to deflect airflow for desired direction<br>• Start with small turns and progress<br>• Stop turns using opposing input<br>**Advanced Turns**<br>• Begin in a neutral position in the center of the tunnel<br>• In addition to lower body input tilt arms to deflect airflow for desired rotation<br>• Balance upper and lower body input to produce a smooth turn<br>• Use opposing input to stop turns |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student fully briefed on key points and safety factors<br>• Appropriate flight gear issued to the student<br>• Appropriate wind speed setting agreed with the instructor and understanding of communicating adjustments during the session. Begin on the net at slower speeds prior to increasing<br>• Student must demonstrate control before increasing the wind speed<br>• Prioritize correcting the body position before increasing the speed of the wind.<br>• Provide heading, altitude and reference point to complete the skills briefed<br>• Sit-fly turns can be taught using the net either in a standing or sitting position, one leg at a time or by using the arms<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance. Allow them direct access to your student always<br>• Use caution with excessive student body pitch resulting in loss of control<br>• Emphasis on bail process to a neutral back-flying position and never to a belly-flying position<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• Ensure your students are taking gradual steps to increase amount of rotation<br>• Ensure your student is not leaning forward during the turn |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 31 Sit-Fly Turning

### Pre-requisites

Prior to learning how to turn while sit-flying, you will first need to be able to comfortably control a neutral sit-flying position, flying that position at a wind speed suitable for sustained flight. You will also need to be able to fly forward and backward comfortably while sit-flying.

These moves, along with all of the back-flying maneuvers and belly-to-back transitions, will greatly improve your sit-flying generally.

### Objectives

The main objective for this skill is to be able to safely and successfully control both left and right turns while maintaining a sit-flying orientation. You will begin by learning 90º turns and understanding how to start and stop the turns with control before advancing to 360º turns. Once you can demonstrate turning and remaining in control throughout, you will then learn up and down moves.

### Preparation

You will start in the center of the wind tunnel, either on or off the net based upon your instructor's direction. At first you will complete small (90º) turns using your lower body only. If you plan to begin on the net, you will first need to raise off the net, place the input to turn in the desired direction, return to neutral once you have reached the desired heading, and then return to the net in order to reset and begin the next turn. If you are starting by flying off the net, then you will place the input to start your turn, reach the desired heading, then return to a neutral position and continue to manage your neutral body position in order to maintain your altitude.

While learning the move, it is preferred that you stop one turn before you start the next turn. This will ensure that you are maintaining control throughout.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Basic (usually beginning on the net)

- Start by determining what direction you want to turn
- Start the turn by tilting your leading foot sideways out in the direction you plan to turn (right turn, use your right foot and left turn use your left foot)
- Keep the 90º angle at your knee
- Turn 90º and then return to neutral in order to stop
- Keep you knees shoulder width apart throughout the turn
- Once the turn has stopped return down to the net and reset

Intermediate (usually beginning on the net)

- You can begin either on the net or off the net and start in your neutral position
- This time you will use only your arms to turn
- Start the turn by rotating your arms so that your leading elbow points down and your trailing elbow is pointed up
- Begin with 90º turns and also work on building to 180º turns individually using your arms and then your legs

Sit-Fly Turning

Sit-Fly Turning

## 31 Sit-Fly Turning

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Advanced (off the net)

- Begin off the net for advanced turns
- Combine the use of your legs and your arms to turn
- Start with 180º turns and progress on to 360º turns
- As you become comfortable you can build the speed of the turns. Use opposite inputs to stop the turns on the desired heading.


Sit-Fly Turning

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to turn in both directions and maintain stability? Did you feel comfortable using individual and combined upper / lower body inputs?
- What techniques did you feel comfortable with and what can you improve on during the next session?

### What Skill is Next?

Once you are comfortable turning while sit-flying, then up and down (fast fall / slow fall) movement can be learned next. Other movements such as side slides and sit-fly carving will come later. More advance maneuvers such as turning while doing verticals or taking docks are other great skills to work on to improve your overall freeflying abilities.

## IBA LEVEL 3 – STATIC PROGRESSION
## LESSON PLAN # 20

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| **Flying Skill** | Sit-Flying Up and Down |

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| **Desired Outcome** | Starting from a neutral sit position, move upward, stop and down in the neutral air column in a controlled manner. Each movement up and down must be completed without moving forward, backward or turning. |

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| **Pre-Requisites** | Sit-Flying Left/Right Turn and Forward/Backward Movement |

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| **Reference Material** | Flight Tutorial # 32<br>Hand Signals<br>• Face this way<br>• Knees up/Knees down<br>• Knees closer/wider<br>• Hip Positioning<br>• Relax<br>• Chin Up<br>• Slow Down/Speed Up<br>• Arm Position<br>• Back Fly/Transition<br>• Stop |

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| **Key Points (flyer)** | **Upward Movement**<br>• Begin in a neutral position in the center of the tunnel low to or on the net<br>• Increase surface area by spreading feet apart and knees closer to expose the inside of the legs<br>• Additional lift from the upper body by slightly leaning back on the airflow and spreading arms<br>• Balance any unwanted drive by adjust the position of the legs<br>• Stop upward movement by returning to neutral or introducing a downward movement<br>**Downward Movement**<br>• Begin in a neutral position in the center of the tunnel<br>• Reduce surface area by sitting upright, pulling in arms<br>• Close feet bringing legs more in line closer together<br>• Balance upper and lower body input to produce a smooth descent<br>• Stop downward movement by introducing an upward (slow-fall) input |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student fully briefed on key points and safety factors<br>• Appropriate flight gear issued to the student<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood. Begin on the net at slower speeds prior to increasing<br>• Student must demonstrate control before increasing the wind speed<br>• Prioritize correcting the body position before increasing the speed of the wind.<br>• Provide heading, altitude and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance. Allow them direct access to your student always<br>• Use caution with excessive student body pitch resulting in loss of control<br>• Emphasis on bail process to a neutral back-flying position and never to a belly-flying position<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• Ensure your students are taking gradual steps to increase amount of up/down movement and stopping prior to contact with the net |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 32 Sit-Fly Up and Down

### Pre-requisites

Like other orientations, learning fall rate control (up and down) is a key component to being a well-rounded flyer. Being proficient at this skill allows you to be able to fly with many other different individuals of different sizes and weight. Prior to learning how to go up and down in the tunnel, it is preferred that you are proficient at your neutral and stable sit-flying position, able to control and maintain a heading as well as turn left and right, and are able to move forward and backward under control.

### Objectives

The primary objective is to be able to safely and successfully in a sit-flying position adjust your body position to be able to gain altitude (slow fall rate) and then re-adjust your position to move down again (fast fall rate). The goal is to be able to complete these moves while maintaining the same heading and also to make each move straight up and straight down without moving forward or backward.

### Preparation

You will enter the flight chamber in a sit-flying position, facing a direction that does not place a doorway either in front or behind you. Start in the center of the tunnel slightly above the net. How much altitude you gain once you start the maneuver will depend on the speed of the wind that you are most comfortable flying in while you are sit-flying. Discuss with your instructor the speed of the wind that you are flying at and what to expect.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Up (slow fall rate)

- Begin in the center of the tunnel in your neutral sit-flying position
- Initiate the upward movement by slightly spreading your legs wide to expose the inside of your legs to the airflow. This exposure of surface area will create the drag you need to reduce the fall rate, thus giving you lift
- Press your arms and hands down slightly on the wind to help further slow your fall rate (note: your wrists shouldn't press down any lower than your shoulders)
- Once you have reached the desired altitude, you will need to constantly manage your body position to maintain that altitude

Sit-Fly Upward

Sit-Fly Upward

Sit-Fly Up and Down

## 32 Sit-Fly Up and Down

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Down (fast fall rate)

- Begin in the center of the tunnel at an altitude that you feel comfortable rising to in your slow fall body position
- Start your downward movement by relaxing your arms so they raise slightly above your shoulders (note: be careful not to let your arms raise too high as this can cause instability)
- Reduce the surface area at your lower body by narrowing your legs to a more streamline position
- Once you have reached your desired altitude, you will need to manage your position in order to maintain that altitude

Sit-Fly Downward

Sit-Fly Downward

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability performing both the up and down moves?
- What techniques did you feel comfortable with and what can you improve on during the next session?

### What Skill is Next?

Once you are proficient at sit-flying up and down moves, you are almost through the 8 points of motion. Your next skill set to begin learning will be sit-fly side-slides.

## IBA LEVEL 3/4 – STATIC PROGRESSION
## LESSON PLAN # 21

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| **Flying Skill** | Sit-Flying Side Slides |

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| **Desired Outcome** | Using balanced and controlled inputs with the upper and lower body shift sideways from one side of the tunnel to the other and stop in both directions. This move should be accomplished without gaining or losing any altitude and remaining on heading. |

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| **Pre-Requisites** | Sit-Flying Up and Down |

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| **Reference Material** | Flight Tutorial # 33<br>Hand Signals<br>● Face this way<br>● Knees up/Knees down<br>● Move Right/Left<br>● Hip Positioning<br>● Relax<br>● Chin Up<br>● Slow Down/Speed Up<br>● Arm Position<br>● Back Fly/Transition<br>● Stop |

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| **Key Points (flyer)** | ● Begin either in the center of the tunnel or to one side<br>● Initiate a side slide using combined upper and lower body inputs<br>● Bend the arm and lower the elbow based upon the direction selected to travel<br>● Trailing arm will extend and raise to assist deflecting airflow<br>● Based upon the selected direction, the leading leg is lowered and trailing leg lifted<br>● Use balanced upper and lower body inputs to produce a smooth slide<br>● Stop side slide by using an opposing input |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student fully briefed on key points and safety factors<br>• Appropriate flight gear issued to the student<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood. Begin on the net at slower speeds prior to increasing<br>• Student must demonstrate control before increasing the wind speed<br>• Prioritize correcting the body position before increasing the speed of the wind.<br>• Provide heading, altitude and reference point to complete the skills briefed<br>• The control inputs for the student vary or can be combined using the upper and lower body and can be taught using the net as a starting and stopping point in the beginning<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance. Allow them direct access to your student always<br>• Use caution with excessive student body pitch resulting in loss of control<br>• Emphasis on bail process to a neutral back-flying position and never to a belly-flying position<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• Ensure your students are taking gradual steps to increase the speed of the movement |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 33 Sit-Fly Side Slide

### Pre-requisites

Before you begin to learn sit-fly side-sliding, you will first need to be very comfortable in your neutral sit-fly position, off the net at moderate to fast wind speeds, with controlled turns, and with forward, backward, and up and down movements completed. At this point, it's likely you will already know how to enter and exit the tunnel while sit-flying, but it is not required.

### Objectives

The primary objective is to be able to safely and successfully side-slide from one side of the wind tunnel to the other, under control the entire time, maintaining a consistent altitude and heading, without contacting the wall at any time.

### Preparation

You will begin sit-flying, off the net, at approximately waist level. You should be close to one side of the tunnel and positioned so there is no doorway in the flight path of your side slide as this can present an obstacle.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

- Begin this maneuver on one side of the tunnel leaving space to complete a side-sliding maneuver
- The side-slide maneuver needs to be created by combining upper and lower body inputs. This will help to keep a balanced slide throughout
- Initiate the side-slide by bending your leading arm and pressing your leading elbow down in to the wind; this will create a "pull" type feel against the airflow
- Your trailing arm will need to be slightly extended and raised to "release" the airflow to help cause the drive
- At the same time that you initiate with your upper body, you will need to create drive with your lower body, first by lowering your leading leg, pressing that foot down in to the wind
- As you lower your leading leg, you will also need to angle that leg, sliding your leading foot outward, which will expose your inner thigh of that leading leg to the wind. This "rudder" effect will create drive for your lower body
- Ensure to keep your spine straight throughout the slide avoiding leaning in to the wind
- Maintain balanced upper and lower body inputs at all times to ensure a straight slide that doesn't turn
- To stop the side-slide, you will need to initiate a slide in the opposite direction to create the braking action you need
- Once the movement has stopped, return to a neutral sit-flying body position

Sit-Fly Side Slide

Sit-Fly Side Slide

Sit-Fly Side Slide

## 33 Sit-Fly Side Slide

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout each side-slide?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Did you have a preferred direction to slide? What can you do differently to be proficient going both directions?

### What Skill is Next?

During the entire time you are learning sit-flying skills, you will continually improve on the last skill you learned as you learn a new skill. It is common that you will learn how to enter and exit the wind tunnel in your sit-flying position early on in your progression. If this is the case, then it is advisable that you become very comfortable flying all of the sit-flying skills at a range of wind speeds.

Depending on what skills you have already learned, the next skill will either be the back-to-sit transition or–if you are already comfortable transitioning from flat orientations to sit-flying, the sit-to-sit front flip.

## IBA LEVEL 3 – STATIC PROGRESSION
## LESSON PLAN # 22

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| **Flying Skill** | Sit Transitions and Vertical Formation Skydiving (VFS) Preparation |

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| **Desired Outcome** | Safe transitions between a neutral back flying position and sit-flying position in different combinations. The transitions need to be executed in a smooth manner on a defined level without any unwanted drive or rotation. For VFS preparation a student must demonstrate each of the individual skills of the basic sit-flying maneuvers and transitions. |

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| **Pre-Requisites** | Sit-Flying Side Slides |

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| **Reference Material** | Flight Tutorial # 34, 35, 37, 38, 40, 41<br>Hand Signals<br>● Face this way<br>● Knees up/Knees down<br>● Hip Positioning<br>● Relax<br>● Chin Up/Down<br>● Slow Down/Speed Up<br>● Arm Position<br>● Back Fly/Transition<br>● Stop |

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| **Key Points (flyer)** | **Back-to-Sit Transition**<br>• Begin and end in the center of the tunnel<br>• Initiate with simultaneous input of upper and lower body<br>• Simultaneously rotate head back to raise upper body, press heels down to drive lower body down<br>• Keep hips bent at 90°<br>• End in a neutral sit-flying position<br>• Return to back flying by relaxing upper body rolling shoulders forward<br>• Allow feet to raise placing to your neutral back flying position<br>**Sit-to-Sit Front Flip**<br>• Begin and end in the center of the tunnel in a neutral sit-flying position<br>• Maintain transition flow until the end of the maneuver without stopping<br>• Tuck upper down between legs<br>• Avoid bringing knees to chest<br>• Keep arms spread for stability<br>**Sit-to-Sit Back Flip**<br>• Begin and end in the center of the tunnel in a neutral sit-flying position<br>• Slight lift off the net and initiate with leg extension out toward wall<br>• As the transition begins collapse upper body, shoulder rolled forward and chin down<br>• Force knees up toward chest as transition becomes inverted and finish with chin up<br>• Avoid tucking arms in<br>• Maintain transition flow until the end of the maneuver without stopping<br>**Sit-to-Sit Cartwheel**<br>• Begin and end in the center of the tunnel in a neutral sit-flying position<br>• Initiate with slight lift off the net<br>• Visual reference is important<br>• Tuck in leading arm, keeping shoulder back<br>• Allow lower body to sweep out to the opposite side of upper body<br>• Maintain transition flow until the end of the maneuver without stopping<br>**VFS Preparation**<br>• Complete each individual movement skill<br>• Safely complete each back flying and sit-flying transition<br>• Prepare some basic VFS routines combining a selection of the skills |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student(s) fully briefed on key points and safety factors<br>• Appropriate flight gear issued to the student<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood. Begin on the net at slower speeds prior to increasing<br>• Student must demonstrate control before increasing the wind speed<br>• Prioritize correcting the body position and skill execution before increasing the speed of the wind.<br>• Provide heading, altitude and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance. Allow them direct access to your student(s) always<br>• Use caution with excessive student body pitch resulting in loss of control<br>• Emphasis on bail process to a neutral back-flying position and never to a belly-flying position<br>• Emphasis on learning transitions and continuing through the transition without stopping until complete<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• Ensure your students are taking gradual steps to increase the speed of the movement<br>• Explain the importance of eye contact to ensure that levels and proximity are maintained<br>• Be sure your students understand the importance of situational awareness to avoid inadvertent collisions at high wind speeds<br>• Practice routines outside of the flight chamber environment to prepare them for each session and also begin a routine of "dirt diving" to ensure clarity of each flight |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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# 34 Back-to-Sit Transition

## Pre-requisites

Being able to transition from your back-flying position to your neutral sit flying position is not only an integral part of your free flying abilities but this maneuver is a key component to learning the neutral sit-fly position. It is common that during the early stages of learning the neutral sit-fly position, your instructor will teach you the back-to-sit transition as a way of regaining a vertical position after recovering to your back-fly.

Prior to learning this transition, you will need to:

- Be proficient in your neutral back-flying position
- Be proficient in the 8 points of motion at the same wind speed you are learning to sit-fly
- Have knowledge and feeling of the basic sit-flying position

## Objectives

The primary objectives are to be able to 1) safely and successfully begin in a neutral back-flying position off the net at a similar wind speed that you are learning to sit fly at; 2) transition from your back-fly position through a 90º forward rotation up to a neutral sit flying position and; 3) finish without any forward or backward movement.

## Preparation

You will start in the center of the wind tunnel in a neutral back-flying position, facing so that a doorway is not in front of or behind you. Plan to be approximately waist to chest high above the net so that your lower body has space to fly once the transition is complete.

## Technique and Drills

*Keep these key elements in mind when learning this skill*

- Begin in a neutral back-fly position off the net
- Initiate the transition by first driving your heels down toward the net. This will allow the lower body to descend to start the rotation
- Keep your hips bent at all times during the transition so that the angle between your thighs and your torso remains 90º
- As you lower your heels, rotate your head back and press your arms back to create lift at your upper body
- Once you become vertical, assume the neutral sit-flying position and continually adjust that position as necessary to avoid over-rotating the transition
- Avoid straightening your legs or standing up at any time during or after completing the transition as this can initiate rapid unwanted movement

## Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout the entire transition?
- Were you able to transition without standing or creating any movement?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Are you able to perform the transition at slow and fast wind speed?

## 34 Back-to-Sit Transition

Back-to-Sit Transition

Back-to-Sit Transition

Back-to-Sit Transition

Back-to-Sit Transition

### What Skill is Next?

You may learn this transition early in your sit-flying progression along with the sit-to-back back flip. Learning one will naturally set you up to learn the other. The nature of learning these transitions is to allow for a safer progression, so that you are comfortable "bailing" to your back-fly position any time that you feel unstable learning to sit-fly. Once you have completed the back-to-sit transition and the sit-to-back transition, your next transition to learn is the belly-to-sit transition.

Back-to-Sit Transition

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## 35 Sit-to-Back Transition

### Pre-requisites

As part of your sit-fly progression, you will learn the sit-to-back transition along with the back-to-sit transition. The sit-to-belly transition maneuver allows you to safely "bail" from a sit-flying position (due to any instability) to an orientation and position that you are familiar with and can control.

### Objectives

The primary objective is to be able to safely and successfully transition from a neutral sit-flying position in the center of the tunnel off the net to your neutral back-flying position through a 90º backward rotation.

### Preparation

You will begin this maneuver in the center of the tunnel, in a neutral sit-flying body position at an appropriate wind speed to support you off the net. It is also possible that your instructor may teach you this skill while you are still learning the neutral sit-fly position still on the net. Either way, the maneuver is completed the same way.

You will need to set up so that you are not facing a door way or have one positioned behind you.

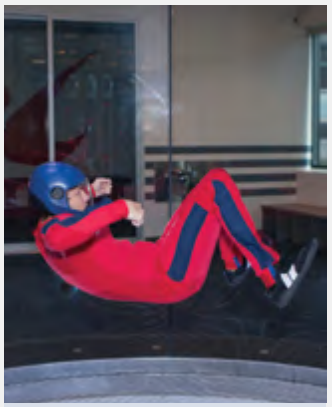
### Technique and Drills

*Keep these key elements in mind when learning this skill*

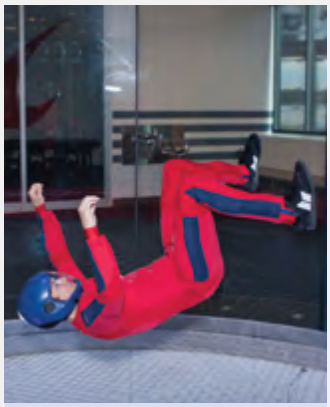
- Begin in the center of the tunnel in a neutral sit-fly position either on or off the net
- Initiate this transition by first relaxing your upper body and shoulders, allowing your shoulders to roll forward and your chest to de-arch. This will allow your upper body to start descending
- Keep your hips bent throughout the rotation, maintaining a 90º bend between your thighs and your torso
- Allow your legs to slowly rotate up, finishing with your lower leg perpendicular to the airflow
- Stop the rotation by rotating your head and arms back against the wind to create a brake
- Once the rotation has stopped, return to a neutral back-flying position

Sit-to-Back Transition

Sit-to-Back Transition



Sit-to-Back Transition



Sit-to-Back Transition

Sit-to-Back Transition

## 35 Sit-to-Back Transition

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout the transition?
- Were you able to transition without moving forward or backward?
- What techniques did you feel comfortable with and what can you improve on during the next session?

### What Skill is Next?

You may learn this transition early in your sit-flying progression along with the back-to-sit transition. Learning one will naturally set you up to learn the other. The nature of learning these transitions is to allow for a safer progression, so that you are comfortable “bailing” to your back-fly position any time that you feel unstable learning to sit-fly. Once you have completed the back-to-sit transition and the sit-to-back-transition, your next transition to learn is the belly-to-sit transition.

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## 37 Sit-to-Sit Front Flip

### Pre-requisites

The sit-to-sit front flip is the first "full" transition in the progression where you start and end in the same position. It is an exciting step for every flyer as it opens many opportunities for your free flying progression and usually will provide that key ingredient that takes your flying to the next level!

Prior to learning this transition, you will need to be an already capable sit-flyer, able to demonstrate a consistently stable neutral position at a range of different wind speeds along with all of the movements.

### Objectives

The primary objective is to be able to safely and successfully perform a sit-to-sit front flip transition beginning and ending in the center of the tunnel at the same predetermined heading and altitude throughout.

### Preparation

You will enter the flight chamber into a neutral sit-flying position, facing a direction that does not present a doorway either in front of or behind you. Your instructor will initially have you low to or on the net to perform some transitions until he or she is confident that you are able to perform this maneuver at higher wind speeds off the net.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

- Begin in the center of the tunnel, low to or on the net, in a neutral sit-flying position
- Initiate the rotation by dropping your head down between your knees
- Try to avoid raising your knees to your head as this can slow the rotation
- You will need to keep your arms out the entire time for better stability
- As you rotate, your body will be in a "balled" position
- As the rotation nears completion, you will need to open up your position to be able to stop into your neutral sit-flying position
- When you approach a vertical orientation at the end of the transition, assume your neutral position
- Be sure to keep your shoulders rolled back and your chin up at the end of the rotation to avoid any unwanted over-rotation

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout the entire transition?
- When you completed each rotation were you on the same altitude and heading as you were when you started?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Are you able to complete the transition at higher and lower wind speeds?

## 37 Sit-to-Sit Front Flip


Sit-to-Sit Front Flip


Sit-to-Sit Front Flip


Sit-to-Sit Front Flip


Sit-to-Sit Front Flip


Sit-to-Sit Front Flip


Sit-to-Sit Front Flip

### What Skill is Next?

Once you begin to feel comfortable performing this transition, your instructor may start to increase the wind speed for you to be able to learn to fly a tighter position maintaining altitude despite the added wind speed. Your instructor may fly in front of you and have you perform the front flip transition to demonstrate flying with another person in a VFS type scenario.

As your comfort level increase performing this transition, the next skill you will begin to learn is the sit-to-sit backflip.

Sit-to-Sit Front Flip

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## 38 Sit-to-Sit Backflip

### Pre-requisites

The sit-to-sit backflip, like the front flip will open bigger opportunities for your flight progression, it is also a transition that will help to bring together a lot of routine type maneuvers. It will be a stepping-stone to learning to transition to head-down flight and a key technique to master for any skill that requires your to transition backwards over your head.

Prior to learning this maneuver you will need to be competent at all of the basic sit-flying moves along with the sit-to-sit front flip transition.

### Objectives

The primary objective is to be able to safely and successfully perform a sit-to-sit backflip transition beginning and ending in the center of the tunnel at the same predetermined heading and altitude throughout.

### Preparation

You will enter the flight chamber in to a neutral sit-flying position, facing a direction that does not present a doorway either in front of or behind you. Your instructor will initially have you low to or on the net to perform some transitions until he or she is confident that you are able to perform this maneuver at higher wind speeds off the net.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

- Begin in the center of the tunnel in a neutral sit-flying body position
- Initiate the transition by relaxing your arms and upper body creating a “de-arched” type position through your chest
- This will allow your upper body to descend
- Keep your chin off your chest with your head in a neutral / straight position
- As you start to rotate, tuck your knees toward your chest to aid in accelerating the rotation
- As the rotation ends and you become vertical again, stop the rotation by assuming your neutral sit-flying position
- Avoid over-rotating by ensuring your head and shoulders are back against the airflow to provide the lift required to act as a brake

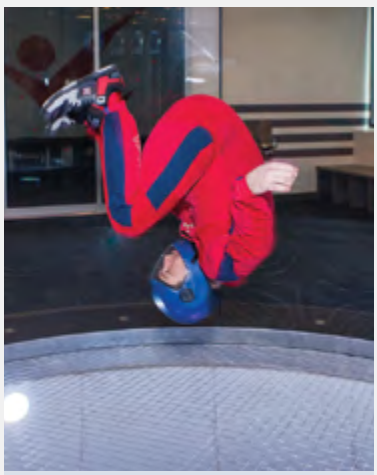
### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout the entire transition?
- When you completed each rotation were you on the same altitude and heading as you were when you started?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Are you able to complete the transition at higher and lower wind speeds?

## 38 Sit-to-Sit Backflip


Sit-to-Sit Backflip


Sit-to-Sit Backflip


Sit-to-Sit Backflip


Sit-to-Sit Backflip


Sit-to-Sit Backflip

**What Skill is Next?**

With another transition complete, your flying skills and progression will be rapidly increasing. It is possible that you are already flying with another sit-flyer and beginning to learn some parts of the 2-way VFS dive pool. Great news!! The next skill for your progression will be the sit-to-sit cartwheel.

Sit-to-Sit Backflip

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## 40 Sit-Fly In-Face Carving

### Pre-requisites

Sit-fly carving is a skill that incorporates multiple different skills and puts them together, using a delicate balance of numerous inputs. You will use this skill a lot when flying with multiple sit-flyers, during vertical formation skydiving (VFS) rounds, and also during routine flights.

Prior to learning this skill, you will need to have mastered all of the 8 points of motion for sit-flying and be comfortable transitioning to your back and recovering to your sit-flying position at high wind speeds. Any sit-to-sit transitions are a bonus but are not necessary to begin learning this skill.

### Objectives

The primary objective is to be able to safely and successfully combine multiple inputs that will create a movement that is circular in motion around the outer edge of the tunnel while facing the center the entire time. You will aim to be able to “carve” in both directions at a range of diameters (small or large circles)

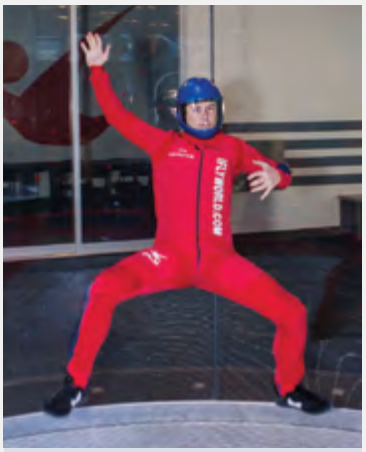
### Preparation

You will start in a sit-flying position, close to the edge of the tunnel with your back roughly 2-3 feet away from the tunnel wall and facing the center of the tunnel. Your coach will either fly opposite to you or stand in the center of the tunnel to provide a point of reference for you.

### Technique and Drills

*Keep these key elements in mind when learning this skill:*

- Begin in a neutral sit-flying position on one side of the tunnel, facing the center
- Begin this maneuver by starting a side-slide in the direction you most prefer
- As you start to slide toward the wall, you will next start a small turn to maneuver away from the wall while still side-sliding
- As you continue to rotate around the outside of the tunnel, you will add in a slight forward movement to ensure you remain off the wall and generate the power for the carve
- Consistently manage the 3 separate inputs to maintain a constant speed and circle throughout
- Keep your spine straight, avoiding leaning in to the carve as this can slow you down
- Manage the spread of your surface area to maintain a constant altitude throughout
- Stop the carve by initiating a carve in the opposite direction
- A tight carve (smaller circle) will require more turn and forward drive than the slide input as opposed to a wide carve (large circle) which will require more slide input than the turn and forward drive



Sit-Fly In-Face Carving

Sit-Fly In-Face Carving

Sit-Fly In-Face Carving

## 40 Sit-Fly In-Face Carving

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to fly a smooth stable carve consistently?
- Are you able to fly small and large circles?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Did you have a preferred direction to travel? What can you do differently to be proficient going both ways?

### What Skill is Next?

As you near the end of the individual sit-flying skills, there are still many more aspects of each skill that you might be able to improve on in order to continue to master them. As you become more familiar with each skill and you begin to put a flight routine together, you will naturally become more comfortable with each skill.

If you haven't already begun learning sit-fly out-face carving, this will be your next move. If you have, then you may be ready to begin learning the head-down progression. Discuss with your instructor the next best skill for you.

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## 41 Sit-Fly Out-Face Carving

### Pre-requisites

Sit-fly carving is a skill that incorporates multiple different skills, putting them together using a delicate balance of numerous inputs. You will use this skill mostly during vertical formation skydiving (VFS) flights, routine flying, and flying with other sit-flyers.

Prior to learning this skill, you will need to have mastered all of the 8 points of motion for sit-flying and be comfortable transitioning to your back and recovering to your sit-flying position at high wind speeds. Any sit-to-sit transitions are a bonus but are not necessary to begin learning this skill.

### Objectives

The primary objective is to be able to safely and successfully combine multiple inputs that will create a movement that is circular in motion around the outer edge of the tunnel with your torso facing out toward the tunnel wall and your back facing toward the center of the tunnel the entire time. You will aim to be able to “carve” in both directions at a range of diameters (small or large circles).

### Preparation

You will start facing the tunnel wall in a sit-flying position, close to the edge of the tunnel with your body roughly 2-3 feet away from the tunnel wall. Your head should be turned to look in the direction that you will carve. Your coach may either stand inside the tunnel for visual reference, or may have you just practice alone.

### Technique and Drills

*Keep these key elements in mind when learning this skill:*

- Begin in a neutral sit-flying position on one side of the tunnel, facing the tunnel wall
- Begin this maneuver by starting a side-slide in the direction you most prefer
- As you start to slide toward the wall, you will next start a small turn with your leading arm to maneuver away from the wall while still side-sliding
- As you continue to rotate, you will add in a slight backward movement to ensure you remain off the wall and generate the power for the carve
- Consistently manage the 3 separate inputs to maintain a constant speed and circle throughout
- Keep your spine straight, avoiding leaning into the carve as this can slow you down
- Manage the spread of your surface area to maintain a constant altitude throughout
- Stop the carve by initiating a carve in the opposite direction
- A tight carve (smaller circle) will require more turn and forward drive than the slide input as opposed to a wide carve (large circle) which will require more slide input than the turn and forward drive

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to fly a smooth stable carve consistently?
- Are you able to fly small and large circles?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Did you have a preferred direction to travel? What can you do differently to be proficient going both ways?

Sit-Fly In-Face Carving

## 41 Sit-Fly Out-Face Carving


Sit-Fly Out-Face Carving


Sit-Fly Out-Face Carving


Sit-Fly Out-Face Carving

### What Skill is Next?

This is the final skill in the sit-flying progression. This is not to say that you are now an expert sit-flyer; it simply means you have the individual tools to help you master sit-flying. Continue to practice each skill, flying with different people, challenging yourself at different wind speeds to become an all around great flyer. Once you have demonstrated to your instructor that you are competent at sit-flying, you can begin the head-down progression.

## IBA LEVEL 4 – STATIC PROGRESSION
## LESSON PLAN # 23

| | |
|---|---|
| **Flying Skill** | Neutral and Stable Head-Down Position |

| | |
|---|---|
| **Desired Outcome** | At a neutral wind speed setting fly a neutral head-down position without movement or rotation in any direction and in the correct flying position. There are multiple different flying positions for this orientation, the most common are daffy and shelf. |

| | |
|---|---|
| **Pre-Requisites** | Completed IBA Level 3 Skills |

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|---|---|
| **Reference Material** | Flight Tutorial # 42 & 43<br>Hand Signals<br>• Face this way<br>• Knees up/Knees down<br>• Hip Positioning<br>• Relax<br>• Chin Up<br>• Slow Down/Speed Up<br>• Arm/Leg Positioning<br>• Bail<br>• Release/Grip Net<br>• Daffy/Shelf/Straddle positions<br>• Stop |

| | |
|---|---|
| **Key Points (flyer)** | **On the Net**<br>• Set up toward the center of the tunnel<br>• Assume head-down position (as briefed) on the net, holding the net<br>• Once net is released do not re-grip<br>• Symmetrical body position important for stability and control<br>• Understand how to control forward/backward movement and heading control<br>• Bail process if student becomes unstable or signalled<br>**Off the Net**<br>• Demonstrate stable position on the net first<br>• Can be accomplished either through a transition or from raising off the net<br>• Intentional small movements<br>• Demonstrate control of movements to counter drives<br>• Bail process if student becomes unstable or signalled<br>• Not using the net, the wall or another person for stability or control |

| | |
|---|---|
| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student(s) fully briefed on key points and safety factors specific to learning head-down flight;<br>• Set-up process on the net<br>  ○ Signal to release the net<br>  ○ Body position<br>  ○ Indication to "bail"<br>  ○ Explanation of the bail process<br>  ○ Coach signal to bail<br>  ○ Maintain within arm's reach of the instructor when flying off the net until approved<br>  ○ Process if the head goes through the net<br>• Appropriate flight gear issued to the student<br>• Appropriate wind speed setting agreed with the instructor and understanding of communicating adjustments during the session. Begin on the net at slower speeds prior to increasing<br>• Student must demonstrate control before increasing the wind speed<br>• Prioritize correcting the body position and skill execution before increasing the speed of the wind.<br>• Provide heading, altitude and reference point to complete the skills briefed<br>**Daffy**<br>• Legs evenly spread forward/backward knees bent (based upon wind-speed and student)<br>• Control with the legs prior to introducing arm input<br>• Straight spine keeping the hips above the head with head in line<br>• Arms spread wider than leg position to avoid burbling the legs<br>**Shelf**<br>• Both legs pressed back behind the flyer, knees bent<br>• Straight spine keeping the hips above the head<br>• Head back slightly to prevent forward drive<br>• Arms forward, hands close together with elbows bent<br>**Other Points**<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance. Allow them direct access to your student(s) always<br>• Use caution with excessive student body pitch resulting in loss of control<br>• Emphasis on bail process to a neutral back-flying position and never to a belly-flying position<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• Ensure your students are taking gradual steps to increase the speed of the movement |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 42 Supported Head-Down

### Pre-requisites

Learning head-down will be one of the most challenging yet fun things you will do in the tunnel. It will be a time consuming goal to attain, but the reward will certainly be worth the effort! Head-down flight is the final static orientation in the progression; it will open many doors for your flying career and help complete you as a fully rounded flyer.

Prior to beginning the head-down progression, you will need to be very competent at:

- All belly-flying skills
- All back-flying skills
- All sit-flying skills
- At least the sit-to-sit front flip transition (knowing all sit-to-sit transitions is preferred)

You will also need to receive a full safety briefing from the tunnel instructor and a body position and skill briefing from a head-down coach.

### Objectives

The primary objective is to be able to safely and successfully fly a static neutral head-down position off the net at moderate to fast wind speeds, with minimal assistance from your tunnel instructor.

### Preparation

Prior to entering the flight chamber to begin this skill, it is important that you discuss with your instructor the specific plan for once you are inside. You will be directed in which way to face and set up on the net. When given the appropriate signal from the instructor, you will, while holding the net, rotate your body and place your head on the net. During the supported head-down position of your progression, your instructor will have at least one grip on you at all times.

Once your body stabilizes, you will be given the signal to release the net one hand at a time and assume a comfortable, neutral flying position.

Whether you are in the early stages of learning this skill and remain on the net, or whether you have some experience and are learning to fly a neutral position off the net, you will set up the same way each time.

### Technique and Drills

*Keep these key elements in mind when learning this skill:*

On the net

- Set up on the net, head down holding the net
- At first, for orientation, start in a “straddle” (legs wide) position, and then switch to a “daffy” (one leg in front and one behind) position
- The “straddle” position is an easier position to begin head down to get a feel for supporting yourself on the net upside down and practicing the “bail.” The “daffy” position is more difficult but provides the right amount of lift and control initially. Later in your progression you may learn a “hybrid” type position which is a mix of the two, based upon your consistent fall rate and finally the “shelf or stall” position which is more commonly used for VFS flying
- For the “straddle” position, your legs will be straight, and spread as wide as possible (laterally)
- For the “daffy” position, your designated front and rear leg will be spread wide (longitudinally), both legs will be bent at approximately 90° to ensure that they are balanced in the wind
- Once you are stable, you coach will give you the signal to release the net one hand at a time. It is done in this manner to ensure that you maintain stability throughout the release process. Once you release you will relax your arms, initially close to your sides

Supported Head-Down

## 42 Supported Head-Down

- With your arms from the relaxed position, slightly raise them to about shoulder height with a slight bend at the elbow
- The position of your head can have an effect on the line of your body, which ultimately can affect the pitch of your body in the wind causing unwanted drive. Try to avoid having your chin down toward your chest exposing your back to the wind; this can cause a forward drive. Having your head rotated back too far can expose too much of your chest and create a backward drive
- If you are signaled to do so, or if you feel any large instabilities, you will need to "bail" to your back or through to your sit-flying position
- The "bail" is completed by tucking your head forward toward your chest and performing a front flip type maneuver
- You will repeat these steps until your instructor and coach feel you are stable and ready to begin lifting off the net
- During each rotation, you will learn to balance each aspect of your position: your torso straight, your arms spread, your front and your back leg. Maintaining constant control of each unit of your position will allow you to maintain controlled neutral flight with no movement

"Daffy" Position

"Shelf" Position

Supported Head-Down

Off the Net:

- Your coach and instructor will discuss with you prior to your learning to fly your position off the net
- They will ensure that you are able to control your position in the wind speed required for you to fly off the net
- Begin in a neutral position on the net and await the instruction to lift
- To begin to raise off the net, you will need to evenly spread each part of your flying surface area to create the lift required
- Initially you will only have enough wind speed for you to lift off the net and not so much that instability can create a fast drive
- During each flight rotation, your instructor will gradually increase the wind speed after you demonstrate stability and safe practices
- Make continuous small adjustments to your body position to maintain your relative position inside the tunnel
- If you encounter any large drives or if your coach instructs you, then "bail" immediately to a sit-flying position
- The instructor will continue to have one grip on you throughout the entire process
- You will repeat the process until your instructor and coach feel comfortable with you progressing to basic head-down

Supported Head-Down

## 42 Supported Head-Down

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability on the net and progress to flying off the net at moderate wind speeds?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Are you able to demonstrate correct bailing procedures?
- Are you ready to be released?

### What Skill is Next?

Learning head-down is challenging both mentally and physically. There is no doubt that at certain times each session you will become fatigued. Your coach will be able to recognize this and key you to continue to work and build other flight skills such as sit-flying and other transitions that require more work. This is normal. Once you start to master head-down flight and you are flying off the net with minimal assistance from the tunnel instructor, the next step in your progression is to learn basic head-down, which will be head-down flight with the tunnel instructor releasing you solo.

**IBA LEVEL 4 – STATIC PROGRESSION**
**LESSON PLAN # 24**

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|---|---|
| **Flying Skill** | Head-Down Left & Right Turns |

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| **Desired Outcome** | Complete turns in either direction under control throughout using upper and lower body inputs in a balanced and controlled manner. Turns should begin and end on a pre-determined heading for accuracy. |

| | |
|---|---|
| **Pre-Requisites** | Head-Down Neutral & Stable Body Position |

| | |
|---|---|
| **Reference Material** | Flight Tutorial # 47<br>Hand Signals<br>• Face this way<br>• Turn Left/Right<br>• Knees up/Knees down<br>• Hip Positioning<br>• Relax<br>• Chin Up<br>• Slow Down/Speed Up<br>• Arm/Leg Positioning<br>• Bail<br>• Stop |

| | |
|---|---|
| **Key Points (flyer)** | • Initiate by looking and pushing the shoulder back in the desired direction of rotation<br>• Head in line with the spine to maintain a centered position<br>• Leg input not necessary but may be used based upon flying position and rotation speed<br>• Small turns to begin<br>• Stop turns with a neutral position and visual reference on heading<br>• Understand when to bail in relation to stability and position relative to the center of the tunnel |

| | |
|---|---|
| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student(s) fully briefed on key points and safety factors<br>• Appropriate flight gear issued to the student<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood. Begin on the net at slower speeds prior to increasing<br>• Student must demonstrate control before increasing the wind speed<br>• Prioritize correcting the body position and skill execution before increasing the speed of the wind.<br>• Provide heading, altitude and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance. Allow them direct access to your student(s) always<br>• Use caution with excessive student body pitch resulting in loss of control<br>• Emphasis on bail process to a neutral back-flying position and never to a belly-flying position<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• Ensure your students are taking gradual steps to increase the speed of the movement |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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# 47 Head-Down Turning

## Pre-requisites

This skill is one that you will have some familiarity with as you will learn and understand some of the elements while you are learning supported and basic head-down flight. Your natural body position will determine what your coach will have had you focus on during the learning stages of your neutral position. You will be familiar in the methods of controlling your heading and stopping any unwanted turns in order to demonstrate control.

Prior to learning specific left and right turns, you will first need to ensure that you have a stable neutral head-down position.

## Objectives

The primary objective is to be able to safely and successfully begin in a neutral head-down position off the net, then on your coach's signal, begin a turn to the left, stop on a specified heading them turn to the right and stop on your original heading. You will start making small 90º turns and work your way up through 180º turns and then 360º turns in both directions.

You should be able to complete each turn without gaining or losing any altitude, moving forward or backward or needing to "bail" for any instability.

## Preparation

You will need to set yourself up in the center of the tunnel, head down at roughly waist height above the net. Upon direction from your coach, you will initiate either a left or a right turn to a specified heading. Once you stop turning, you will need to be in a neutral position to set yourself up for the next turn.

We recommend you start with small turns and ensure you have control of them before progressing on to larger rotations.

## Technique and Drills

*Keep these key elements in mind when learning this skill*

- Begin in the center of the tunnel, in your neutral "daffy" flying position
- Be sure to have a plan for which direction to turn to better understand how you will adjust your body position
- Angle the lower part of your front leg into the wind to create a rudder effect which will assist in initiating the turn
- Slightly turning your head to look in the direction of the turn will aid the rotation
- Stop the turn by angling your lower leg in the opposite direction, creating a brake
- Once the turn has stopped, return to a neutral position

Head-Down Turning

Head-Down Turning

## 47 Head-Down Turning

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability for turns in both directions?
- Can you complete the turns without creating any forward/backward movements or gaining/losing altitude?
- Were you able to turn and stop on the correct heading each time?
- What techniques did you feel comfortable with and what can you improve on during the next session?

Head-Down Turning

### What Skill is Next?

Once you are comfortable turning while sit-flying, then up and down (fast fall / slow fall) movement can be learned next. Other movements such as side slides and sit-fly carving will come later. More advance maneuvers such as turning while doing verticals or taking docks are other great skills to work on to improve your overall freeflying abilities.

| IBA LEVEL 4 – STATIC PROGRESSION<br>LESSON PLAN # 25 | |
|---|---|
| **Flying Skill** | Head-Down Forward & Backward Movement |
| **Desired Outcome** | Move forward, stop and move backward and stop using the correct upper and lower body inputs and maintain control throughout. When any forward or backward movement is conducted, the goal is to ensure that the flyer remains at the same altitude and in a stable body position for each movement. |
| **Pre-Requisites** | Head-Down Neutral & Stable Body Position |
| **Reference Material** | Flight Tutorial # 46<br>Hand Signals<br>• Face this way<br>• Move Forward/Backward<br>• Knees up/Knees down<br>• Hip Positioning<br>• Relax<br>• Chin Up<br>• Slow Down/Speed Up<br>• Arm/Leg Positioning<br>• Bail<br>• Stop |
| **Key Points (flyer)** | • Start in the center of the tunnel<br>• Depending on the body position, use upper or lower body to initiate and stop movement<br>• Maintain awareness of position relative to the center of the tunnel<br>• Stop prior to making contact with the wall |

| | |
|---|---|
| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student(s) fully briefed on key points and safety factors<br>• Appropriate flight gear issued to the student<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Student must demonstrate control before increasing the speed of the movement<br>• Provide heading, altitude and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance. Allow them direct access to your student(s) always<br>• Use caution with excessive student body pitch resulting in loss of control<br>• Emphasis on bail process to a neutral back-flying position and never to a belly-flying position<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• Ensure your students are taking gradual steps to increase the speed of the movement<br>• Focus placed on stopping movements |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 46 Head-Down Forward and Backward

### Pre-requisites

This skill is one that you will have some familiarity with as you will learn and understand the majority of the elements while you are learning supported and basic head-down flight. Your natural body position will determine what your coach will have had you focus on during the learning stages of your neutral position. You will be familiar in the methods of stopping any unwanted forward and/or backward drive in order to demonstrate control.

Prior to learning specific forward and backward movements, you will need to ensure that you have a stable neutral head-down position first.

### Objectives

The primary objective is to be able to safely and successfully begin in a neutral head-down position off the net, then on the signal from your coach, fly forward approximately 3-5 feet from your original position and stop. Next, on the signal from your coach, fly backward 3-5 feet back to your starting point. You should be able to complete each movement without losing your heading, gaining or losing any altitude, or needing to “bail” for any instability.

### Preparation

You will need to set yourself up in the center of the tunnel, head down at roughly waist height above the net. On your coach’s signal, you will initiate either a small forward or backward movement, which will place you close to one side of the tunnel. Ensure that the movements you are planning to perform provide you with enough space to complete the movement without contacting the tunnel wall. It is always recommended that you not fly forward any closer than 2 feet from the wall. This will allow your head to clear the wall if you need to “bail” to your sit-fly for any reason.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Forward

- You will begin in a head-down, neutral position with enough space in front of you to perform this maneuver. Ideally you will start with your back close to the tunnel wall
- Initiate the forward movement by extending your back leg and pushing your arms slightly back
- Keep your spine straight throughout the entire movement
- Stop the movement before reaching the opposite side of the tunnel by returning your back leg to neutral, extending your front leg slightly, and returning your arms to neutral
- Use small inputs to begin with until you become comfortable with this movement

Head-Down Nutral

Head-Down Forward

Head-Down Forward and Backward

## 46 Head-Down Forward and Backward

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Backward

- Begin in a head-down, neutral position with enough space behind you to perform this maneuver. Ideally you will start with approximately 2 feet between you and the tunnel wall
- Initiate the backward movement by extending your front leg out and pushing your arms slightly forward
- Keep your spine straight throughout the entire movement
- Stop the movement before reaching the opposite side of the tunnel by returning your front leg to neutral, extending your back leg slightly, and returning your arms to neutral
- Use small inputs to begin with until you become comfortable with this movement

Sit-Fly Backward

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability for both movements consistently?
- Can you complete the movements without turning, gaining or losing altitude?
- What techniques did you feel comfortable with and what can you improve on during the next session?

### What Skill is Next?

During the learning phase of supported and basic head-down, you will have the opportunity to become familiar with some of the concepts of each of the head-down movements. This is because your coach will be giving you some insights in to each of these skills to help you master the neutral body position. As you become a more competent head-down flyer, you will master each of the movement skills as your coach gives you specific headings or heights to maintain and move to at certain speeds.

While mastering the forward and backward skill, your coach will also have you mastering up / down movement as well as heading control. Once you feel comfortable with these skills, you will next work on head-down turns.

## IBA LEVEL 4– STATIC PROGRESSION
## LESSON PLAN # 26

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| **Flying Skill** | Head-Down Up & Down Movement |

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| **Desired Outcome** | Starting in a neutral head-down position, move upward, stop and down in the air column in a controlled manner. Each movement up and down must be completed without moving forward, backward or turning. |

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| **Pre-Requisites** | Head-Down Neutral & Stable Body Position |

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| **Reference Material** | Flight Tutorial # 45<br>Hand Signals<br>• Face this way<br>• Knees up/Knees down<br>• Hip Positioning<br>• Relax<br>• Chin Up<br>• Slow Down/Speed Up<br>• Arm/Leg Positioning<br>• Bail<br>• Stop |

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| **Key Points (flyer)** | **Upward Movement**<br>• Begin in the center of the tunnel<br>• Increase surface area with balanced arm and leg inputs<br>• Spine straight<br>• Stop within arm's reach of the instructor<br>**Downward Movement**<br>• Begin in the center of the tunnel<br>• Decrease surface area with balanced arm and leg inputs<br>• Spine straight<br>• Stop prior to the net |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student(s) fully briefed on key points and safety factors<br>• Appropriate flight gear issued to the student<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood. Begin on the net at slower speeds prior to increasing<br>• Student must demonstrate control before increasing the wind speed<br>• Prioritize correcting the body position and skill execution before increasing the speed of the wind.<br>• Provide heading, altitude and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance. Allow them direct access to your student(s) always<br>• Use caution with excessive student body pitch resulting in loss of control<br>• Emphasis on bail process to a neutral back-flying position and never to a belly-flying position<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• Ensure your students are taking gradual steps to increase the speed of the movement |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 45 Head-Down Up and Down

### Pre-requisites

This skill is one that you will have some familiarity with as you will learn and understand the majority of the elements while you are learning supported and basic head-down flight. You will find that most of your time learning to fly head-down skills early on has been based around learning to fly up and off the net. Prior to learning how to fly up and down in a head-down orientation, you will need to ensure that you have a stable neutral head-down position first.

### Objectives

The primary objective is to be able to safely and successfully begin in a neutral head-down position off the net, then, when signaled by your coach, fly up approximately 3-6 feet from your original altitude and stop. Then, when signaled by your coach again, fly down 3-6 feet back to your starting altitude. You should be able to complete each movement without losing your heading, moving forward or backward or needing to “bail” for any instability.

### Preparation

You will need to set yourself up in the center of the tunnel head down. You can begin the upward movement from either on the net or just a small distance above the net. If you are starting the downward movement, you will need to set yourself up in the center of the tunnel, head down, with enough space between you and the net to perform the movement without landing on the net. It will be important that you are able to stop yourself before reaching the net.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Up (slow fall rate)

- You will begin in the center of the tunnel, in a neutral head-down position, approximately 2-3 feet above the net
- You will plan to use balanced inputs of your body’s surface area to create lift
- Initiate the upward movement by extending your “daffy” position (spreading your front and rear leg as far apart as possible) to maximize the amount of lift potential
- As the lift begins, you will need to extend your arms out sideways
- Your arms can raise slightly, but no higher than your shoulders at any time
- Maintain balance with your inputs as your rise, to control any unwanted forward or backward movements or turns
- To stop an upward movement, you will slightly reduce the additional surface area to reduce the lift and maintain the desired altitude

Head-Down Upward

Head-Down Up and Down

## 45 Head-Down Up and Down

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Down (fast fall rate)

- Begin in the center of the tunnel approximately 6 feet above the net. Depending on the position required for you to fly at that altitude, you can either be in a neutral or slow-fall position to begin the downward movement
- You will want to reduce the surface area at your arms by relaxing and lowering them and at your legs by reducing the spread between your front and back leg in your “daffy” position
- Maintain balance with your inputs as you descend, to control any unwanted forward or backward movements or turns
- To stop your downward movement, you will use the same inputs to initiate an upward movement and then once you have stopped, you will need to manage your position to maintain the desired altitude

Head-Down Neutral

Head-Down Downward

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability when flying up and down?
- During the up and down movements did you encounter any forward or backward drive?
- What techniques did you feel comfortable with and what can you improve on during the next session?

### What Skill is Next?

During the learning phase of supported and basic head-down you will have the opportunity to become familiar with some of the concepts of each of the head-down movements. This is due to the fact that it will be necessary for your coach to give you some insights in to each of these skills to help you master the neutral body position. As you become a more competent head-down flyer, you will begin to master each of the movement skills, as your coach will give you specific headings or heights to maintain and move to at certain speeds.

While mastering the up and down skill, your coach will also have you mastering forward and backward movement and as well as heading control.

## IBA LEVEL 4– STATIC PROGRESSION
## LESSON PLAN # 27

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| **Flying Skill** | Head-Down Side Slides |

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| **Desired Outcome** | Shift sideways from one side of the tunnel to the other using balanced and controlled inputs. This move should be accomplished without gaining or losing any altitude and remaining on heading. |

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| **Pre-Requisites** | Head-Down Movements: Up/Down, Left/Right Turns & Forward/Backward |

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| **Reference Material** | Flight Tutorial # 48<br>Hand Signals<br>• Face this way<br>• Slide Left/Right<br>• Knees up/Knees down<br>• Hip Positioning<br>• Relax<br>• Chin Up<br>• Slow Down/Speed Up<br>• Arm/Leg Positioning<br>• Bail<br>• Stop |

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| **Key Points (flyer)** | • Start in the center of the tunnel<br>• Initiate by tilting arms to deflect airflow<br>• Maintain heading using visual references<br>• Stop prior to contacting the wall |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student(s) fully briefed on key points and safety factors<br>• Appropriate flight gear issued to the student<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood. Begin on the net at slower speeds prior to increasing<br>• Student must demonstrate control before increasing the wind speed<br>• Provide heading, altitude and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance. Allow them direct access to your student(s) always<br>• Use caution with excessive student body pitch resulting in loss of control<br>• Emphasis on bail process to a neutral backflying position and never to a belly-flying position<br>• The control inputs vary during head-down side slides depending on the body position the student is flying in<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• Ensure your students are taking gradual steps to increase the speed of the movement |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 48 Head-Down Side Slide

### Pre-requisites

This skill, like the other head-down movements, is one that you will have some familiarity with from having learned supported and basic head-down flight. Your natural body position will determine what your coach will have had you focus on during the learning stages of your neutral position.

You will be familiar with the methods of controlling any unwanted side-slides in order to demonstrate control. Prior to learning specific side-slides, you will first need to ensure that you have a stable neutral head-down body position.

### Objectives

The primary objective is to be able to safely and successfully begin in a neutral head-down position off the net, then on your coach's signal, side-slide to either your left or right and stop before contacting the wall, and then to repeat in the opposite direction. You will aim to complete each side-slide without gaining or losing any altitude, moving forward or backward, and also maintaining a consistent heading throughout.

### Preparation

You will need to set yourself up either in the center of the tunnel or on one side to begin a slide in the direction where there is most space, head down, at roughly waist height above the net. On your coach's signal, you will initiate a side-slide to either your left or right. Upon approaching the tunnel wall, you will stop the slide, return to a neutral position, and be set up to start a side-slide in the opposite direction.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

- Begin in a neutral head-down position either in the center of the tunnel or on one side
- You will initiate the slide by ruddering the lower part of your front leg into the wind to create drive
- With your upper body, you will slightly "tilt" your arms, by slightly bending and raising your leading arm and extending and relaxing your trailing arm
- You will need to keep your spine straight throughout the entire maneuver
- To stop the side-slide, oppose the inputs to create a brake
- Be sure to initiate the stop of your slide soon enough to avoid contacting the tunnel wall
- Once you have stopped moving, return to a neutral body position

Head-Down Side Slide

Head-Down Side Slide

Head-Down Side Slide

## 48 Head-Down Side Slide

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability for side-slides in each direction?
- Are you able to side-slide without driving forward or backward, or losing your heading?
- Did you maintain the same altitude throughout the entire side slide?
- What techniques did you feel comfortable with and what can you improve on during the next session?

### What Skill is Next?

During the learning phase of supported and basic head-down you will have the opportunity to become familiar with some of the concepts of each of the head-down movements. This is because your coach will give you some insights in to each of these skills to help you master the neutral body position. As you become a more competent head-down flyer, you will master each of the movement skills as your coach has you practice specific movements.

While perfecting your side-slide moves, your coach will also have you working on the other head-down movements. Once you feel comfortable with these skills, you will begin to learn the sit-to-head transitions next.

## IBA LEVEL 4– STATIC PROGRESSION
## LESSON PLAN # 28

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| **Flying Skill** | Head-Down Transitions |

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| **Desired Outcome** | There are a range of different transitions within the head-down module mixed between starting in a sit-fly position and ending head-down, or vice versa or beginning in a head-down position and completing a full transition and ending in head-down position.<br>Even though the specifics of flying each transition vary slightly, all transitions are to be completed:<br>● In a smooth manner<br>● While maintaining control<br>● Without any unwanted movement; forward, backward or heading change<br>● Any excessive gain or loss of altitude |

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| **Pre-Requisites** | Stable Head-Down Position On or Off the Net |

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| **Reference Material** | Flight Tutorial # 49 - 56<br>Hand Signals<br>● Face this way<br>● Knees up/Knees down<br>● Hip Positioning<br>● Relax<br>● Chin Up<br>● Slow Down/Speed Up<br>● Arm/Leg Positioning<br>● Bail<br>● Go/Stop<br>● Daffy/Shelf<br>● Stop |
| **Key Points (flyer)** | **Head-to-Sit Front Flip**<br>● Begin in the center of the tunnel<br>● Initiate with chin to the chest<br>● Relax lower body<br>● End in neutral sit-fly position<br>**Sit-to-Head Front Flip**<br>● Begin in the center of the tunnel<br>● Initiate by pushing upper body down between knees<br>● Allow lower body to lift up focusing on a strong neutral head-down position to stop<br>● Understanding of timing for opening of body position to stop rotation<br>● Visual reference points to aid in stopping<br>● Stop in a neutral head-down position and continuously flying to counteract movements |

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| **Key Points (flyer) continued** | **Sit-to-Head Back Flip**<br>• Begin in the center of the tunnel<br>• Initiate by rolling shoulders forward and allow upper body to fall back<br>• Allow lower body to lift up focusing on a strong neutral head-down position to stop<br>• Understanding of timing and technique for opening of body position to stop rotation<br>• Visual reference points to aid in stopping<br>• Stop in a neutral head-down position and continuously flying to counteract movements<br>**Head-to-Sit Back Flip**<br>• Begin in the center of the tunnel or close to a wall with room behind the flyer<br>• Timing of input is important<br>• Key input elements; chin up, knees tucked toward chest, arms relaxed down/back<br>• Finish in a neutral sit-flying position<br>**Sit-to-Head Cartwheel**<br>• Begin in the center of the tunnel<br>• Initiate by tucking in the leading arm and pressing shoulder back<br>• Allow lower body to lift up focusing on a strong neutral head-down position to stop<br>• Understanding of timing and technique for opening of body position to stop rotation<br>• Visual reference points to aid in stopping<br>• Stop in a neutral head-down position and continuously flying to counteract movements<br>**Head-to-Sit Cartwheel**<br>• Begin in the center of the tunnel<br>• Initiate by tilting your head in the desired direction of rotation<br>• Relax the arm of the descending side<br>• Allow your lower body to fall<br>• Finish in a strong neutral sit-flying position<br>**Head-to-Head Front Flip**<br>• Reference Head-to-Sit Front Flip and Sit-to-Head Front Flip<br>• The complete transition is a combination of the two individual maneuvers together<br>• Head-to-Head Cartwheel<br>• Reference Head-to-Sit Cartwheel and Sit-to-Head Cartwheel<br>• The complete transition is a combination of the two individual maneuvers together<br>• Head-to-Head Back Flip<br>• Reference Head-to-Sit Back Flip and Sit-to-Head Back Flip<br>• The complete transition is a combination of the two individual maneuvers together |

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| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student(s) fully briefed on key points and safety factors<br>• Appropriate flight gear issued to the student<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood. Begin on the net at slower speeds prior to increasing<br>• Student must demonstrate control before increasing the wind speed<br>• Prioritize correcting the body position and skill execution before increasing the speed of the wind.<br>• Provide heading, altitude and reference point to complete the skills briefed<br>• Full head to head transitions must be accomplished upon successful completion of the half transitions<br>• Avoid facing your student directly toward or away from the doorway<br>• Enter the flight chamber only when given the "OK" by the instructor<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance. Allow them direct access to your student(s) always<br>• Use caution with excessive student body pitch resulting in loss of control<br>• Emphasis on bail process to a neutral back-flying position and never to a belly-flying position<br>• Emphasis on learning transitions and continuing through the transition without stopping until complete<br>• Avoid overloading your students with too much information during their early development and learning basic skills<br>• Ensure your students are taking gradual steps to increase the speed of the movement |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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## 49 Sit-to-Head Front Flip

### Pre-requisites

When you finish learning basic head-down and can fly head-down by raising off the net with no assistance from the tunnel instructor, you are ready to begin learning the transition from sit-flying to head-down. The step-by-step learning process for head-down is similar to the step-by-step phases of mastering a solid body position. Now you are ready to start putting together one vertical flying position with another and ultimately building a seamless flying display.

### Objectives

The primary objective is to be able to safely and successfully transition from a neutral sit-flying position through a front flip maneuver and finish in a neutral head-down position in the center of the tunnel without generating any lift or movement.

### Preparation

You will start in the center of the tunnel in a neutral sit-flying position. For your early transitions, your instructor will manage the speed of the wind so it is appropriate for the orientations but not so high that you gain any altitude during the move. Your instructor will be assisting you early on and will aim to keep you approximately waist to chest height above the net.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

- Begin in the center of the tunnel in a neutral sit-flying position
- You should focus on rotating around your waist line; your upper and lower body should switch places
- Initiate the transition by rotating your head forward and pushing your upper body forward and down toward your knees
- Keep your arms spread out from your side for stability
- As you start to rotate, ensure that your body stays small in a “balled” up type position, this will help you avoid any lift or drive
- Once your head and shoulders are down and your upper body becomes vertical, you will need to anchor it down and pick a reference point on the tunnel wall to look at to help stop your upper body
- As your upper body stops rotating, allow your lower body to hinge around your upper body and open up
- To stop the rotation, use a lot of input with your back leg, extending it out in to the wind for maximum lift
- To prevent over-rotating and “falling off your head,” you can slightly roll your head back and look slightly lower in the tunnel, which will keep you from exposing your back to the wind
- Once the rotation has stopped, assume a neutral head-down flying position
- Manage the speed of the rotation. Remember: too slow can present lifting and driving potentials and too fast can present over-rotation potentials

## 49 Sit-to-Head Front Flip

Sit-to-Head Front Flip

Sit-to-Head Front Flip

Sit-to-Head Front Flip

Sit-to-Head Front Flip

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to consistently transition without creating any unwanted lift or drive?
- Are you ready to perform the transitions with an assisted grip by the instructor?
- What techniques did you feel comfortable with and what can you improve on during the next session?

### What Skill is Next?

This maneuver is one of a few sit-to-head transitions that you will learn. Usually it is the first one to learn due to the fact that most flyers will be comfortable performing a front flip type move. It won't necessarily by the most common maneuver you select when transitioning to your head, but still a vital skill to be able to perform.

The next skill for you to learn once you become comfortable with this is the sit-to-head cartwheel.

Sit-to-Head Front Flip

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## 50 Sit-to-Head Cartwheel

### Pre-requisites

At this point in your progression, you should be confident at flying up off the net in a head-down orientation, controlling any movements, and you may even have been trained to fly the sit-to-head front flip transition. Now you are ready to begin learning the sit-to-head cartwheel maneuver.

This skill is one that may be more commonly used when flying or skydiving with others as you are able to complete the entire maneuver and keep a visual reference with the person or people you are flying with at all times.

### Objectives

The primary objective is to be able to safely and successfully transition from a neutral sit-flying position through either a left or right rotating maneuver to finish in a neutral head-down position in the center of the tunnel without generating any lift or movement.

### Preparation

You will start in the center of the tunnel in a neutral sit-flying position. For your early transitions, your instructor will manage the speed of the wind so it is appropriate for the orientations but not so high that you gain any altitude during the move. Your instructor will be assisting you early on and will aim to keep you approximately waist to chest height above the net.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

- Begin in the center of the tunnel in a neutral sit-flying position slightly above the net
- Pick the direction that you feel most comfortable rotating to. If you are transitioning up to your “daffy” position, then typically whichever is your front leg will be the direction you travel. For example, if your left leg is your front leg in “daffy,” then your transition will rotate to your left.
- Pick a reference point on the wall to focus on which will help you with maintaining an altitude and heading
- Initiate the rotation by collapsing your leading arm to lose the lift in that area and allow your upper body to drop
- Aim to keep your shoulders straight and square and your spine straight for the whole rotation
- With your lower body, bring your front “daffy” leg across the front of your body to help your lower body get lift to rotate it up
- You should focus on the rotation of the transition happening around your waist point; your upper and lower body should switch places
- As the rotation begins, be sure to keep your body relatively small and “balled up” so that you do not expose too much surface area, which will cause you to lift through the transition
- As you reach your head down orientation, rudder your front leg against the airflow to create a brake to stop the rotation
- Assume a neutral head-down position once the rotation has stopped

## 50 Sit-to-Head Cartwheel


Sit-to-Head Cartwheel


Sit-to-Head Cartwheel


Sit-to-Head Cartwheel


Sit-to-Head Cartwheel


Sit-to-Head Cartwheel

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to consistently transition without creating any unwanted lift or drive?
- Are you ready to perform the transitions without an assisted grip by the instructor?
- What techniques did you feel comfortable with and what can you improve on during the next session?

### What Skill is Next?

This maneuver is one of a few sit-to-head transitions that you will learn; this is a commonly used transition when free flying with others as you can maintain a visual reference on others as you complete the maneuver. Ideally, you will practice rotating in both directions. Being able to fly your “daffy” with either leg forward will help to facilitate this. It isn’t necessary to be able to go both directions; you will have a naturally preferred direction you will likely always lean towards.

The next skill for you to learn once you become comfortable with this is the sit-to-head back flip.

Sit-to-Head Cartwheel

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## 51 Sit-to-Head Backflip

### Pre-requisites

At this point in your progression, you should be confident at flying up off the net in a head-down orientation, controlling any movements, and also have been trained to fly both the sit-to-head front flip and the sit-to-head cartwheel transitions. Now you are ready to begin learning the sit-to-head backflip maneuver.

A variant of this skill is very commonly used in tunnel flying and skydiving to transition between sit-flying and head-down. People who aren't as confident completing a cartwheel maneuver will tend to fly a backflip rotation with a slight turn, which will allow them to maintain a visual reference throughout the transition.

### Objectives

The primary objective is to be able to safely and successfully transition from a neutral sit-flying position through a backflip maneuver and finish in a neutral head-down position in the center of the tunnel without generating any lift or movement.

### Preparation

You will start in the center of the tunnel in a neutral sit-flying position. For your early transitions, your instructor will manage the speed of the wind so it is appropriate for the orientations but not so high that you gain any altitude during the move. Your instructor will be assisting you early on and will aim to keep you approximately waist to chest height above the net. Your head-down position must be very solid and you should be comfortable with the sit-to-sit backflip transition. These elements will set you up for a more successful sit-to-head transition.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

- Start in the center of the tunnel in a neutral sit-flying position slightly off the net
- Allow your arms and your shoulders to relax forward slightly; this will allow your upper body to initiate the transition and fall backwards
- Try to avoid rotating your head back or arching your chest as these may prevent your upper body from descending
- As you start to rotate, allow the wind to lift your legs with the surface area that is presented and begin to adjust your legs toward their "daffy" position
- As you near the end of the rotation, pick a reference point on the wall of the tunnel to aid in stopping your torso from rotating
- To stop the rotation, extend your front "daffy" leg into the airflow and also push your arms forward slightly to brake against the wind
- You should focus on the rotation of the transition happening around your waist point; your upper and lower body should switch places
- Assume a neutral head-down position once the rotation has stopped

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to consistently transition without creating any unwanted lift or drive?
- Are you ready to perform the transitions without an assisted grip by the instructor?
- What techniques did you feel comfortable with and what can you improve on during the next session?

## 51 Sit-to-Head Backflip


Sit-to-Head Backflip


Sit-to-Head Backflip


Sit-to-Head Backflip


Sit-to-Head Backflip


Sit-to-Head Backflip

### What Skill is Next?

This maneuver is one of a few sit-to-head transitions that you will learn and is a commonly used transition when free flying with others. Ideally, you have had the opportunity to practice and become competent with the other sit-to-head transitions, giving you different options to maneuver to head-down flight depending on the circumstance.

During the learning stages of each of these transitions to head-down, it is possible that you will have already been given some opportunity to begin also learning the rest of the head-to-sit transitions other than the standard “bailing” move the head-to-sit front flip. If this is the case great! If not, then the next skills for you to begin are the head-to-sit cartwheel and the head-to-sit backflip.

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## 52 Head-to-Sit Cartwheel

### Pre-requisites

The head-to-sit cartwheel is a transition that can be taught simultaneously with the sit-to-head cartwheel transition, as it allows for fairly seamless learning to rotate up and then rotate in the opposite direction back down again. It isn't necessary to do this, and some students may learn it completely separately; either way is acceptable.

Any transition that rotates from head-down to sit-fly can be considered a "bailing" maneuver, although most will focus on the front flip to be the "bail." Being comfortable with the cartwheel rotation from head-to-sit will allow you to maneuver between these vertical orientations while maintaining visual contact with the people with whom you are flying. Prior to learning this transition, you should be comfortable flying head-down in a neutral position off the net with no assistance from the tunnel instructor (basic head-down). If you are learning the sit-to-head transitions, that is a bonus, but not necessary.

### Objectives

The primary objective is to be able to safely and successfully transition from a neutral head-down position off the net, through a clockwise or counter clockwise rotation, to a neutral sit-flying position, finishing at the same altitude and on the same heading as when you started.

### Preparation

You will begin this maneuver in the center of the tunnel, flying head-down in a neutral position approximately 3-5 feet above the net. Your coach will set up in front of you and give you the direction to travel and a signal to begin.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

- Begin in the center of the tunnel, in a neutral head-down flying position at roughly chest height above the net
- Pick a visual reference point on the tunnel wall in front of you to help you maintain a heading throughout the rotation. You can also use eye contact with your instructor or coach if he or she is in front of you for the maneuver
- The direction you rotate will usually depend on which leg is forward as you fly your "daffy" position. For a position that has your left leg as your front leg, you will rotate clockwise (your front leg is ultimately your leading leg around the transition)
- Initiate the transition by tilting your head to your leading shoulder (for a clockwise rotation, your head will tilt over toward your right shoulder)
- At the same time you will relax your left arm so you can reduce drag on that side of your body
- These two inputs will start the motion required for the transition
- As you start to rotate, you will need to tuck your front "daffy" leg (in this scenario, your left leg) closer to your body to help keep it from creating any drag for your rotation
- As you become upright, you will open out your body into a neutral sit-flying position to stop the rotation
- If your neutral head-down position has you flying with your right leg as the front in your "daffy," then the techniques are the same but everything described above is mirrored

## 52 Head-to-Sit Cartwheel

Head-to-Sit Cartwheel

Head-to-Sit Cartwheel

Head-to-Sit Cartwheel

Head-to-Sit Cartwheel

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to complete the transition and maintain the same heading and altitude as when you started?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Are you comfortable transitioning in both directions?

### What Skill is Next?

Begin able to transition from head-down flight to your sit-flying position via any of the transitions will make you a well-rounded flyer. No matter what the move might be, having different options to be able to accomplish the same goal will be key.

At this point you should be comfortable completing both the head-to-sit front flip and cartwheel. Your next skill will be the head-to-sit backflip transition.

Head-to-Sit Cartwheel

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## 53 Head-to-Sit Backflip

### Pre-requisites

Unlike the cartwheel transition, learning the head-to-sit backflip usually is not taught at the same time that another transition is being taught. The main reason is that this maneuver has more challenges and requires 100% focus to complete it successfully without creating an unsafe situation. It is not recommended to attempt this maneuver without a clear plan and briefing by your tunnel instructor.

Prior to learning this transition, ensure that you have discussed the plan with your instructor about the set up and completing the maneuver. You will need to demonstrate that you are a stable head-down flyer and that you can also complete at least these head-down flight moves:

- Forward and backward
- Up and down
- Left and right turns
- Head-to-sit front flip and cartwheel

### Objectives

The primary objective is to be able to safely and successfully transition from a neutral head-down position off the net, through a backward rotating maneuver, to a neutral sit-flying position, finishing at the same altitude and on the same heading as when you started.

### Preparation

You will likely set yourself up for this maneuver by being slightly forward from the center of the tunnel. This will allow more space behind you for clearance for your head to transition up. This will provide you with an extra safeguard if any backward movement is present through the transition. Some other methods can be used to teach this skill, including: starting with a slight forward drive and then initiating the move or starting slightly higher in the tunnel and beginning a small downward move before initiating the rotation. Either is acceptable. Be sure to discuss an exact plan with your instructor prior to beginning this skill.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

- Begin in the center of the tunnel in a neutral head-down flying position approximately 6-8 feet above the net
- Initiate the rotation by completing three inputs simultaneously. These inputs are: relaxing your arms down slightly toward your sides, rotating your head back, and tucking your knees forward toward your chest
- As you become upright, you will stop the rotation in a neutral sit-flying position

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to complete the transition and maintain the same front/back heading and altitude as when you started?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Are you able to complete the transition without generating any forward or backward movement?

## 53 Head-to-Sit Backflip


Head-to-Sit Backflip


Head-to-Sit Backflip


Head-to-Sit Backflip

### What Skill is Next?

Begin able to transition from head-down flight to your sit-flying position via any of the transitions will make you a well-rounded flyer. No matter what the move might be, having different options to be able to accomplish the same goal will be key.

At this point you should be comfortable completing all of the head-to-sit transitions, and next you will move on to learning the head-to-head transitions.

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## 54 Head-to-Head Front Flip

### Pre-requisites

Now that you are able to complete all of the head-to-sit and sit-to-head transitions individually, it is time for you to begin putting these moves together. As you begin learning the 2-way VFS dive pool, these moves will be important maneuvers to have under your belt.

Prior to learning this skill, you will want to be proficient at the following free-flying moves:

- All head-down moves (8 points of motion)
- Sit-to-head front flip
- Head-to-sit front flip

Also, being confident with the other sit-to-head and head-to-sit transitions would be a bonus, but is not required to begin learning this new skill.

### Objectives

The primary objective is to be able to safely and successfully complete a full front flip transition from your neutral head-down position and back again to your neutral position head-down.

### Preparation

Looking at this in a basic sense, the full head-to-head front flip is similar to placing both the head-to-sit front flip and then sit-to-head front flip together as one complete move.

You will begin in the center of the tunnel in a neutral head-down position with enough space between you and the net to complete the transition. Your instructor will set the speed of the wind at your most comfortable free-flying speed.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

- Begin in the center of the tunnel in a neutral head-down position, approximately six feet above the net
- Initiate the transition by first tucking your head forward, placing your chin to your chest
- As the rotation begins, your torso will start to “ball” up. This will help continue the rotation and also help stop any lift throughout the transition
- Your body position will remain tight and small until you reach a point where your torso becomes vertical again
- As the rotation nears the end, you will need to open your position toward your neutral head-down flying position, as this will help initiate the stop
- Use your legs to help in stopping the rotation by initially pushing them back into the airflow to counter the rotation
- As the transition slows, return your legs to a neutral head-down position

## 54 Head-to-Head Front Flip


Head-to-Head Front Flip


Head-to-Head Front Flip


Head-to-Head Front Flip


Head-to-Head Front Flip


Head-to-Head Front Flip


Head-to-Head Front Flip

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to complete the transition and maintain the same heading and altitude as when you started?
- What techniques did you feel comfortable with and what can you improve on during the next session?

### What Skill is Next?

If you're ultimate passion is to begin learning the VFS dive pool, then it will be necessary to be proficient at this skill along with the other head-to-head transitions. Once you are comfortable flying this maneuver, then you will next begin to learn the head-to-head cartwheel.

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## 55 Head-to-Head Cartwheel

### Pre-requisites

Now that you are able to complete all of the head-to-sit and sit-to-head transitions individually, it is time for you to begin putting these moves together. As you begin learning the 2-way VFS dive pool, these moves will be important maneuvers to have under your belt.

Prior to learning this skill, you will want to be proficient at the following free-flying moves:

- All head-down moves (8 points of motion)
- Sit-to-head cartwheel
- Head-to-sit cartwheel

Also, being confident with the other sit-to-head and head-to-sit transitions would be a bonus, but is not required to begin learning this new skill.

### Objectives

The primary objective is to be able to safely and successfully complete a full cartwheel transition from your neutral head-down position and back to your neutral position head-down.

### Preparation

Looking at this in a basic sense, the full head-to-head cartwheel is similar to placing both the head-to-sit cartwheel and then sit-to-head cartwheel together as one complete move. You will need to ensure that you are comfortable performing both of these individual moves in both directions prior to learning the full head-to-head cartwheel, so that it is easier to place two together, giving you a full un-interrupted rotation.

You will begin in the center of the tunnel in a neutral head-down position with enough space between you and the net to complete the transition. Your instructor will set the speed of the wind at your most comfortable free flying speed.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

- Begin in the center of the tunnel in a neutral head-down position approximately 6 feet above the net
- For visual reference, pick a heading that is directly in front of you on the tunnel wall. If your
- instructor / coach is in front of you, then eye contact with that person will work as a visual reference as well.
- Initiate the rotation by tilting your head sideways toward your leading shoulder (if your chosen rotation is clockwise then your head will tilt toward your right shoulder and vice versa)
- As your head begins to move, relax your opposite arm to reduce the drag on that side of your body
- As the rotation begins, slightly tuck your arms and legs in to reduce overall drag. This will help to avoid any drive and keep you rotating around a central point
- As you pick up speed around the rotation, allow the momentum to carry your body around, bringing you back to a vertical head-down orientation
- As you approach a head-down orientation, open your body position to neutral head-down flight beginning with your legs and then following with your arms

## 55 Head-to-Head Cartwheel


Head-to-Head Cartwheel


Head-to-Head Cartwheel


Head-to-Head Cartwheel


Head-to-Head Cartwheel


Head-to-Head Cartwheel


Head-to-Head Cartwheel

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to complete the transition and maintain the same heading and altitude as when you started?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Are you comfortable completing this transition in both directions?

### What Skill is Next?

If you're ultimate passion is to begin learning the VFS dive pool, then it will be necessary to be proficient at this skill along with the other head-to-head transitions. Once you are comfortable completing this skill, then you will next begin to learn the head-to-head backflip.

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## 56 Head-to-Head Backflip

### Pre-requisites

Now that you are able to complete all of the head-to-sit and sit-to-head transitions individually, the other two head-to-head transitions, this will be your final skill as part of learning all of the head-to-head transitions.

As mentioned in earlier lesson plans, learning the 2-way VFS dive pool will require you to be competent at flying these moves.

Prior to learning this skill, you will want to be proficient at the following free-flying moves:

- All head-down moves (8 points of motion)
- Sit-to-head back flip
- Head-to-sit back flip

This is the final head-to-head transition in the progression, so being competent at the other head-to-head transitions will be beneficial prior to learning this skill.

### Objectives

The primary objective is to be able to safely and successfully complete a full backflip transition from your neutral head-down position and back to your neutral position head-down.

### Preparation

Looking at this in a basic sense, the full head-to-head backflip is similar to putting together both the head-to-sit backflip and then sit-to-head backflip as one complete move.

You will begin in the center of the tunnel in a neutral head-down position with enough space between you and the net to complete the transition. Your instructor will set the speed of the wind at your most comfortable free flying speed.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

- Begin in the center of the tunnel in a neutral head-down flying position approximately six feet above the net
- You will initiate this transition in a similar fashion to how you started the head-to-sit back flip. Rotate your head back, slightly relax your arms, and tuck your knees forward toward your chest
- As you reach the halfway point passing through a head-up orientation, you will adjust your position for the final part of the rotation
- Return your head from a tilted back position to a more neutral straight position. Slightly roll your shoulders forward and continue to keep your arms slightly relaxed
- These changes above along with the moment of your initiation will be key factors in continuing the rotation back to a head-down orientation
- As you approach head-down flight, open your position back to a neutral “daffy” position, stopping the rotation by extending your front leg, pressing against the wind for brakes
- You can also push your arms forward slightly to help assist in stopping the rotation if necessary
- Once the rotation has stopped, return to a neutral head-down flying position

## 56 Head-to-Head Backflip


Head-to-Head Backflip


Head-to-Head Backflip


Head-to-Head Backflip


Head-to-Head Backflip


Head-to-Head Backflip


Head-to-Head Backflip

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to complete the transition and maintain the same heading and altitude as when you started?
- What techniques did you feel comfortable with and what can you improve on during the next session?

### What Skill is Next?

This maneuver is the final skill in the head-to-head transition series. You should feel comfortable with each of the individual moves for sit-flying, head-down flying and all of the transitions between these two orientations. The next series of skills focuses on using these skills to perform specific sequences when flying with a partner--for example, half-eagle and full eagle--and also dynamic movement skills like carving in-facing and out-facing.

Head-to-Head Backflip

## IBA LEVEL 4– STATIC PROGRESSION
## LESSON PLAN # 29

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| **Flying Skill** | Half and Full Eagles / Reverse Eagles |

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| **Desired Outcome** | These multi-dimensional maneuvers can be performed with another flyer or a coach once the individual specifics of each maneuver has been demonstrated solo.<br>Even though the specifics to flying each maneuver vary slightly, all of these skills are to be completed:<br>● In a smooth manner<br>● While maintaining control<br>● Without any excessive movement; forward, backward or heading change<br>● Without any excessive gain or loss of altitude |

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| **Pre-Requisites** | Head-Down Transitions |

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| **Reference Material** | Flight Tutorial # 57 - 60<br>Hand Signals<br>● Face this way<br>● Relax<br>● Chin Up<br>● Slow Down/Speed Up<br>● Arm/Leg Positioning<br>● Move Up/Down<br>● Look at me<br>● Go/Stop |

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| **Key Points (flyer)** | **Half Eagle**<br>● Head-down flyer initiates sequence<br>● Head-down flyer transitions under the sit-flyer and will end in a sit-flying position<br>● Sit-flyer transitions over head-down flyer and will end in a head-down position<br>● Maintain eye contact throughout<br>**Half Reverse Eagle**<br>● Head-down flyer initiates sequence<br>● Head-down flyer transitions over the sit-flyer and will end in a sit-flying position<br>● Sit-flyer transitions under the head-down flyer and will end in a head-down position<br>● Maintain eye contact throughout |

| | |
|---|---|
| **Key Points (flyer) continued** | **Full Eagle**<br>• Head-down flyer initiates sequence<br>• Head-down flyer initially transitions under the sit-flyer and will switch roles to the sit-flyer for the second half of the maneuver<br>• Sit-flyer transitions over the head-down flyer and will switch roles to the head-down flyer for the second half of the maneuver<br>• Maintain eye contact throughout<br>**Full Reverse Eagle**<br>• Head-down flyer initiates sequence<br>• Head-down flyer initially transitions over the sit-flyer and will switch roles to the sit-flyer for the second half of the maneuver<br>• Sit-flyer transitions under the head-down flyer and will switch roles to the head-down flyer for the second half of the maneuver<br>• Maintain eye contact throughout |
| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student(s) fully briefed on key points and safety factors<br>• Appropriate flight gear issued to the student<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Awareness of the student and their transitions/movement with potential for performing the skill incorrectly and needing to compensate<br>• Prioritize correcting the body position and skill execution before increasing the speed of the wind.<br>• Provide heading, altitude and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance. Allow them direct access to your student(s) always<br>• Use caution with excessive student body pitch resulting in loss of control<br>• Understanding of the burbles and how it affects stability and the overall maneuver<br>• Emphasis on bail process to a neutral back-flying position and never to a belly-flying position<br>• Ensure your students are taking gradual steps to increase the speed of the movement<br>• Be sure your students understand the importance of situational awareness throughout each of these moves in order to avoid unwanted collisions<br>• Explain the grip plan and the timing for these maneuvres to ensure that the move is completed correctly. This will help your students avoid gaining too much separation throughout the move<br>• Explain the importance of eye contact throughout the entire move to assist keeping the individuals close |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |

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# 57 Half Eagle

## Pre-requisites

The half-eagle is the first vertical multi-dimensional maneuver that you will learn to perform with a partner. First, you will need to be comfortable flying solo the individual parts of this maneuver: a sit-to-head front flip and also the head-to-sit front flip. It will be important that you are comfortable "bailing" to a sit-flying position without gaining any altitude, and that when you bail, you do so without moving across the tunnel at all.

## Objectives

The primary objective is for two flyers to be able to:

- Safely and successfully begin by facing each other with one flyer head-down and the other sit-flying
- Transition while continuing to face each other throughout the maneuver
- When the maneuver is complete you should mirror each other's positions while facing each other
- Maintain close proximity to each other throughout the entire maneuver

## Preparation

Begin by performing the transitions solo, starting on one side of the tunnel, facing the center. You will end the maneuver still facing the center, but on the opposite side of the tunnel facing the opposite direction to that of what you started. Make sure you're comfortable flying each of the roles of a half-eagle without another flyer or the effects of his/her burble. Once confident in your solo transition, your instructor will step in and add a small burble or reference to fly around. For example, the instructor might use his arm to build a visual reference.

Once you begin to fly with the second flyer, make sure you set up facing each other, at the correct altitude, and with the correct distance between you.

## Technique and Drills

*Keep these key elements in mind when learning this skill*

Sit-to-head front flip over the flyer

- Initially, create some forward drive and decrease fall rate slightly to initiate the transition
- Carry just enough momentum to travel smoothly through the other flyer's burble but not too much that it creates extra distance from the other flyer
- Keeping your chin up during the beginning and middle of this transition will help give you the correct body position and ensure you can keep eye contact with the other flyer

Head-to-sit front flip under the flyer

- Create some forward drive and increase fall rate slightly to initiate the transition
- Make sure to fly through the back-fly portion of the transition up to sit-fly without creating too much distance from the other flyer
- Keeping your chin down during the beginning and middle of the transition will help give you the correct body position and allow you to maintain eye contact with the other flyer

Team flying notes

- For the first several attempts at this exercise, it is better to err on the side of a little more separation after the half-eagle
- As you gain more experience, you can allow for less and less separation until you are simply switching places with the other flyer

## 57 Half Eagle


Half Eagle


Half Eagle


Half Eagle


Half Eagle


Half Eagle

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain control throughout the whole maneuver?
- What techniques did you feel comfortable with and what can you improve on during the next session?
- Do you have a preferred “slot” (beginning in sit-fly or beginning in head-down)?
- What skills require more work to improve your weaker position?

### What Skill is Next?

Once you and your partner are comfortable performing the half-eagle maneuver in both “slots,” continue to try to tighten the distance between you throughout the whole move. The next skill to learn is the full eagle and also the half-reverse eagle.

Half Eagle

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## 58 Half-Reverse Eagle

### Pre-requisites

Prior to learning this maneuver with a second flyer, it is best that you are able to fly each separate half of the move solo. In order to complete each separate move, you will need to be very comfortable flying a sit-to-head backflip transition and also a head-to-sit backflip transition, both with no instructor assistance necessary.

It is also ideal that you are comfortable performing both half-eagles and full eagles prior to learning half-reverse eagles, so that you are confident flying such dynamic maneuvers with another person and have experience flying through another flyer's burble while transitioning at the same time. All of these skills are not required but are highly recommended to increase your success level.

### Objectives

The primary objective is to be able to safely and successfully perform a half-reverse eagle transition with another qualified and capable flyer. This skill should be completed while maintaining control throughout the entire transition and maintaining close proximity to the other flyer. Finally, each flyer should aim to be capable of flying both slots for the half-reverse eagle transition

### Preparation

You will need to begin performing each half of the maneuver solo until you feel confident that you are able to complete the move with the second flyer. When you initially set up for the maneuver, you will want to be facing the center of the tunnel, but offset to one side, leaving space on the opposite side for the second flyer. When you are flying with the second flyer you will need to set up so that you are flying at approximately eye level with each other. Prior to flying this full maneuver with a second flyer, your instructor may present a small burble for you as you practice by using an arm or some other part of his/her body. This can help you learn the reference point as well as help you become comfortable flying through the burble for the head-to-sit portion of the move.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

Sit-to-head backflip under the flyer

- Increase fall rate slightly while creating some forward drive to move under the flyer
- Carry just enough momentum to pass smoothly through your back and under the flyer without creating excess separation when you finish
- Keep your chin up during the middle and last part of the transition to help maintain eye contact with the second flyer

Head-to-sit backflip over the flyer

- Create a small amount of forward drive to ensure that you move over the second flyer, but not too much that it causes excess separation when you finish
- Minimize the amount of time passing through the middle of this maneuver--it usually tends to increase your fall rate too much due to the burble
- Try to keep your chin up through the middle and last part of the transition to maintain eye contact with the second flyer

## 58 Half-Reverse Eagle


Half-Reverse Eagle


Half-Reverse Eagle


Half-Reverse Eagle


Half-Reverse Eagle


Half-Reverse Eagle

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to complete the maneuver without creating too much separation?
- Did you manage to stop each transition on eye level?
- What techniques did you feel comfortable with and what can you improve on during the next session?

### What Skill is Next?

Once you are comfortable performing this skill starting from both the head-down and the sit-fly position, then the next skill that you should be looking to learn is the full-reverse eagle. If there are times where a second flyer is not available to perform eagle type maneuvers, you can also learn head-down carving.

Half-Reverse Eagle

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## 59 Full Eagle

### Pre-requisites

Prior to learning full eagles, you will need to be very comfortable performing the half-eagle maneuver in both "slots." Essentially, a full eagle is the same a two half-eagles put together one after the other. It would be beneficial to begin learning this skill will the same person you are comfortable flying with when performing the half-eagle skill; this will provide for better all-around performance throughout.

### Objectives

The primary objective is for two flyers to be able to safely and successfully perform a full eagle maneuver, with both flyers beginning in their specified "slots," ending in their original "slots" at the same altitude, and returning to their neutral positions.

### Preparation

You can first learn this maneuver solo prior to adding the second flyer if you wish. Set up will be on one side of the tunnel facing the center, the same set up as a half-eagle. Ensure that you are comfortable flying the entire movement from beginning to end and ideally beginning in both the sit-fly and head-down orientations. When you begin to fly with the second flyer, make sure you set up facing each other, at the correct altitude, and with the correct distance between you.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

If you set up correctly and visualize the idea of placing two half-eagles together to complete the full eagle, then everything should go as planned. Begin in your most comfortable slot and perform one full eagle to a complete stop. Then, switch roles so that you begin in the opposite orientation and perform one full eagle to a stop.

Once you become comfortable with this maneuver, then you may want to perform more than one full eagle, one following the other.

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout the entire maneuver?
- Were you able to maintain eye contact throughout the whole transition?
- tDid you complete the full eagle finishing at the same altitude you started with and with the same distance between you and the other flyer?

### What Skill is Next?

Once you are comfortable completing a full eagle beginning in both slots, the next skills that you will work on are half-reverse and full-reverse eagles. For a change of pace, you might want to learn a different aspect of free-flying, and at this point in your progression you could begin learning In-Face Carving Head-Down.

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## 60 Full-Reverse Eagle

### Pre-requisites

Prior to learning full-reverse eagles, you will need to be very comfortable performing the half-reverse eagle, and you should be able to start and end the half-reverse eagle in both "slots."

### Objectives

The primary objective is for two flyers to be able to safely and successfully perform a full-reverse eagle, with each flyer beginning in his or her specified "slot," and ending in their neutral positions, at the same altitude and in their original "slots."

### Preparation

Essentially, a full-reverse eagle is the same a two half-reverse eagles put together one after the other. It is helpful to begin learning this skill with the same person you are comfortable flying with when performing the half-reverse eagle skill. This will improve all around performance throughout.

You can first learn this maneuver solo prior to adding the second flyer if you wish. Set up will be on one side of the tunnel facing the center, the same set up as a half-reverse eagle. Ensure that you are comfortable flying the entire movement from beginning to end and, ideally, beginning in both the sit-fly and head-down orientations. When you begin to fly with a second flyer, make sure you set up facing each other, at the correct altitude, and with the correct distance between you.

### Technique and Drills

*Keep these key elements in mind when learning this skill*

If you set up correctly and visualize placing two half-reverse eagles together to complete a full-reverse eagle, then everything should go as planned. Begin in your most comfortable slot and perform one full-reverse eagle to a complete stop. Then, switch roles so that you begin in the opposite orientation and perform one full-reverse eagle to a stop.

Once you become comfortable with this maneuver, then you may want to perform multiple full-reverse eagles, one following the other.

### Post-Flight Questions / Suggestions

- How did your performance match the initial objectives?
- Were you able to maintain stability throughout the entire maneuver?
- Were you able to maintain eye contact throughout the whole transition?
- Did you complete the full-reverse eagle finishing at the same altitude as where you began and with the same distance between you and the other flyer?

### What Skill is Next?

Once you are comfortable completing a full-reverse eagle beginning in both slots, the next skills that you are encouraged to learn are head-down in-face carving and head-down out-face carving. At this point in your flying progression, you are ready to consider 2-way Vertical Formation Skydiving (VFS) flying with a partner. Discuss with your instructor the 2-way VFS dive pool and select some sequences that fit your comfort level to begin training for competition.

## IBA LEVEL 4– STATIC PROGRESSION
## LESSON PLAN # 30

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| **Flying Skill** | 2-Way / 4-Way Vertical Formation Skydiving (VFS) |

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| **Desired Outcome** | Fly selected sequences from each of the relevant dive pools;<br>● 2-Way VFS Advanced<br>● 2-Way VFS Open<br>● 4-Way VFS Intermediate<br>● 4-Way Open<br>By using the IBA Draw Generator, specific sequences may be drawn for each tunnel flight and each flight must be flown with flyers demonstrating control and stability throughout. Although it is not necessary to compete to gain this flyer rating only demonstrate proficiency, it is highly recommended as it provides flyers with a deeper knowledge of the discipline. |

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| **Pre-Requisites** | Head-down Movements: Up/Down, Left/Right Turns & Forward/Backward and Transitions |

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| **Reference Material** | IBA VFS Dive Pool Videos:<br>● 2-Way VFS Advanced<br>● 2-Way VFS Open<br>● 4-Way VFS Advanced<br>● 4-Way Open<br>Hand Signals<br>● Go/Stop<br>● Move Up/Down<br>● Move Faster/Slower<br>● Look/Watch |

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| **Key Points (flyer)** | **Half Eagle**<br>● Head-down flyer initiates sequence<br>● Head-down flyer transitions under the sit-flyer and will end in a sit-flying position<br>● Sit-flyer transitions over head-down flyer and will end in a head-down position<br>● Maintain eye contact throughout<br>**Half Reverse Eagle**<br>● Head-down flyer initiates sequence<br>● Head-down flyer transitions over the sit-flyer and will end in a sit-flying position<br>● Sit-flyer transitions under the head-down flyer and will end in a head-down position<br>● Maintain eye contact throughout |

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| **Key Points (flyer) continued** | **Full Eagle**<br>• Head-down flyer initiates sequence<br>• Head-down flyer initially transitions under the sit-flyer and will switch roles to the sit-flyer for the second half of the maneuver<br>• Sit-flyer transitions over the head-down flyer and will switch roles to the head-down flyer for the second half of the maneuver<br>• Maintain eye contact throughout<br>**Full Reverse Eagle**<br>• Head-down flyer initiates sequence<br>• Head-down flyer initially transitions over the sit-flyer and will switch roles to the sit-flyer for the second half of the maneuver<br>• Sit-flyer transitions under the head-down flyer and will switch roles to the head-down flyer for the second half of the maneuver<br>• Maintain eye contact throughout |
| **Key Points (coach)** | • On-duty instructor is briefed on the activity<br>• Student(s) fully briefed on key points and safety factors<br>• Appropriate flight gear issued to the student<br>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood<br>• Awareness of the student and their transitions/movement with potential for performing the skill incorrectly and needing to compensate<br>• Prioritize correcting the body position and skill execution before increasing the speed of the wind.<br>• Provide heading, altitude and reference point to complete the skills briefed<br>• Avoid facing your student directly toward or away from the doorway<br>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance. Allow them direct access to your student(s) always<br>• Use caution with excessive student body pitch resulting in loss of control<br>• Understanding of the burbles and how it affects stability and the overall maneuver<br>• Emphasis on bail process to a neutral back-flying position and never to a belly-flying position<br>• Ensure your students are taking gradual steps to increase the speed of the movement<br>• Be sure your students understand the importance of situational awareness throughout each of these moves in order to avoid unwanted collisions<br>• Explain the grip plan and the timing for these maneuvres to ensure that the move is completed correctly. This will help your students avoid gaining too much separation throughout the move<br>• Explain the importance of eye contact throughout the entire move to assist keeping the individuals close |
| **Student Debriefing** | • Goals versus outcome of the session<br>• Highlight areas that were positive<br>• Highlight areas of improvement pertinent to the skill being learned<br>• Goal setting for the next session |