



# DYNAMIC PROGRESSION COACH MANUAL

THE INTERNATIONAL BODYFLIGHT ASSOCIATION



# PART 1



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## FOREWARD

Welcome to the *IBA Dynamic 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.

Enjoy your coaching and be safe.

Rusty Lewis  
Director of Safety & Training  
International Bodyflight Association  
2017

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# INTRODUCTION

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## 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](http://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

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## 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.

<b>TRAINING OBJECTIVE</b> <i>What is to be learned?</i>	<b>DESIRED OUTCOME</b> <i>What are the expected, measurable outcomes?</i>	<b>TEACHING</b> <i>What methods should be employed to achieve the desired outcomes?</i>	<b>ASSESSMENT</b> <i>What tool will be used to assess the activity and measure the desired outcome?</i>
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.  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.  Demonstrate and coach the relevant flight skills.  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.  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			
<b>Coach Rating:</b>	IBA Formation Skydiving Coach (for example)		
<b>Candidate:</b>	Nikola Tesla		
<b>Trainer:</b>	Leo Davinci		
<b>Pre-Requisites Confirmed:</b>	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
<b>Development Comments</b>	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.		
<b>Date of Award</b>	<b>Signature</b>		
July 16, 2016	Leo Davinci		



# PART 2



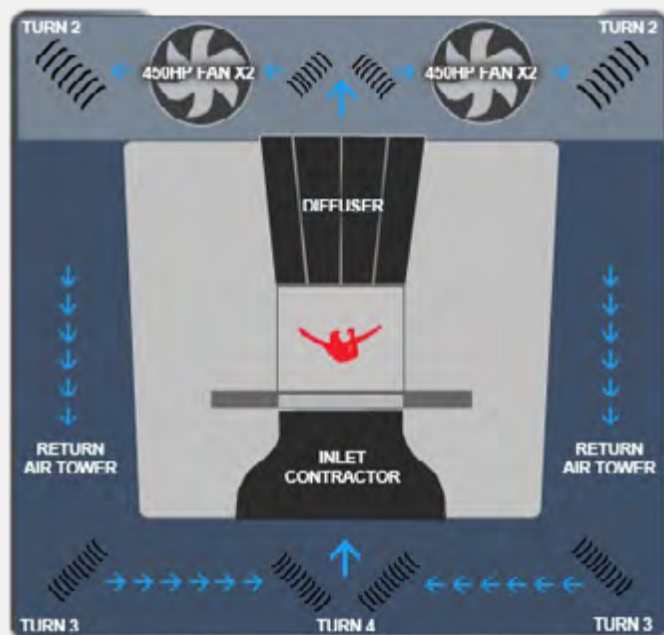
## GENERAL INFORMATION

### 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 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



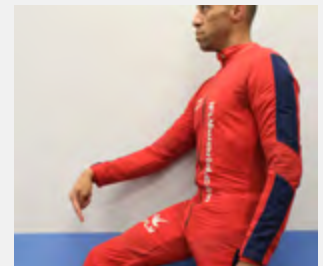
Come down



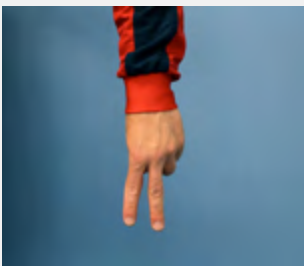
Back fly



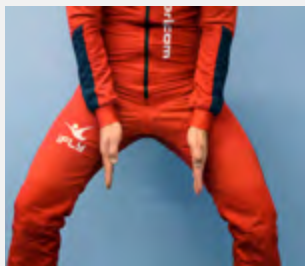
Knees/legs up



Knees/legs down



Stand up



Wider legs



Move slower



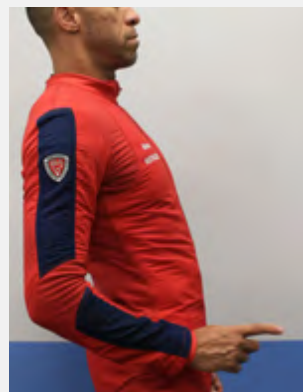
Move faster



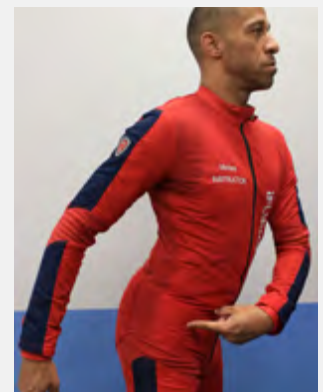
Straight body position



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](http://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 LESSON PLAN # 1

<b>Flying Skill</b>	Neutral & Stable Belly-Flying Position
<b>Desired Outcome</b>	At a neutral wind speed setting, flies with full control in a neutral belly-fly position, without excessive movement or rotation in any direction
<b>Pre-Requisites</b>	Signed-off as safe to progress through IBA Flyer Progression by an IBA instructor
<b>Reference Material</b>	Flight Tutorial # 1 Hand Signals <ul style="list-style-type: none"> <li>• Straighten Your Legs</li> <li>• Bend Your Legs</li> <li>• Relax</li> <li>• Chin Up</li> <li>• Go Up/Go Down</li> <li>• Move Slower/Move Faster</li> <li>• Stop</li> </ul>

<b>Key Points (flyer)</b>	<p><b>Basic Position</b></p> <ul style="list-style-type: none"> <li>• Your student's position should be arched, symmetrical, with head raised &amp; legs shoulder-width apart</li> <li>• Arms bent at a 90° angle with elbows at approximately eye level</li> <li>• Toes pointed with knees slightly higher than hips</li> <li>• Eye contact not necessary--it is more important to be looking straight ahead</li> </ul> <p><b>Advanced Position</b></p> <ul style="list-style-type: none"> <li>• Arched shape similar to the basic position</li> <li>• Legs/feet similar to the basic position</li> <li>• Elbows pushed down, hands closer together and chest raised</li> <li>• Symmetrical position still necessary</li> </ul>
<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student is fully briefed on key points and safety factors</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>• Provide heading and reference point to complete the skills briefed</li> <li>• Do not face your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• Prior to transitioning from your feet to flying with your student, be sure to confirm your actions with the instructor</li> <li>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance</li> <li>• Always fly within your skill level to avoid any unnecessary risk to yourself or your student</li> <li>• Avoid overloading your students with too much information during their early development and learning of basic skills</li> <li>• The altitude at which you and your students fly should not exceed the students level of ability</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



## THE INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 01 Belly-Flying Neutral Body Position

#### Pre-requisites

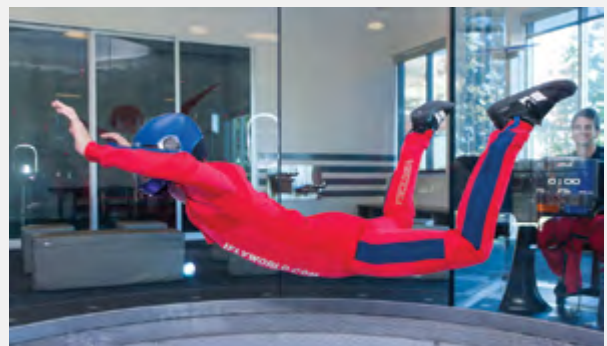
The belly-flying neutral body position is the first position you'll learn as your introduction into the world of body flying. First, your instructor will give you a briefing that will cover all the safety aspects of the tunnel, along with the basic information for beginning the neutral belly-fly position. 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)

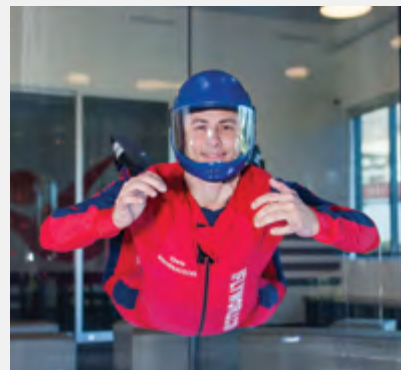
- Most of what you learn during the basic neutral flying position will carry over to learning the advanced "mantis" position
- Maintain the generally arched shape similar to the basic position
- Arms will transition from being at eye level to a more elbows-down, slightly below the shoulders position
- 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.



Belly-Flying Neutral Body Position



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

<b>Flying Skill</b>	Belly-Fly Forward & Backward
<b>Desired Outcome</b>	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
<b>Pre-Requisites</b>	Neutral & Stable Belly-Flying Position (on or off the net)
<b>Reference Material</b>	Flight Tutorial # 2 Hand Signals <ul style="list-style-type: none"> <li>● Straighten Your Legs</li> <li>● Bend Your Legs</li> <li>● Relax</li> <li>● Chin Up</li> <li>● Go Up/Go Down</li> <li>● Move Slower/Move Faster</li> <li>● Stop</li> </ul>
<b>Key Points (flyer)</b>	<p><b>Basic Move</b></p> <ul style="list-style-type: none"> <li>● Extend and retract arms or legs to start and stop the movements</li> <li>● Be aware of the speed of movement and when to initiate the correct input to stop the movement</li> <li>● Maintain a symmetrical and arched shape for stability</li> <li>● Heading management using small upper body adjustments</li> <li>● Emphasize the act of stopping and returning to a neutral position prior to initiating a new move</li> <li>● Eye contact not necessary; it is more important to be looking forward (to distance) for reference</li> </ul> <p><b>Advanced Move</b></p> <ul style="list-style-type: none"> <li>● Introduce combined upper and lower body input and how to balance both movements to ensure smooth flying</li> <li>● Knees wide during forward movement and narrow for backward movement to accelerate the movement</li> <li>● Understand the effect of additional speed and emphasis on stopping and maintaining good body position</li> <li>● Maintain a symmetrical position throughout</li> </ul>

<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>● On-duty instructor is briefed on the activity</li> <li>● Student is fully briefed on key points and safety factors</li> <li>● Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>● Provide heading and reference point to complete the skills briefed</li> <li>● Avoid facing your student directly toward or away from the door-way</li> <li>● Enter the flight chamber only when given the “OK” by the instructor</li> <li>● Prior to transitioning from your feet to flying with your student, be sure to confirm your actions with the instructor</li> <li>● Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance</li> <li>● Always fly within your skill level to avoid any unnecessary risk to yourself or your student</li> <li>● Avoid overloading your students with too much information during their early development and learning of basic skills</li> <li>● The altitude at which you and your students fly should not exceed the students level of ability</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>● Goals versus outcome of the session</li> <li>● Highlight areas that were positive</li> <li>● Highlight areas of improvement pertinent to the skill being learned</li> <li>● Goal setting for the next session</li> </ul>



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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.



## Belly-Flying Forward and Backward

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

<b>Flying Skill</b>	Belly-Fly Left & Right Turns
<b>Desired Outcome</b>	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
<b>Pre-Requisites</b>	Belly-Fly Forward & Backward (on or off the net)
<b>Reference Material</b>	Flight Tutorial # 3 Hand Signals <ul style="list-style-type: none"> <li>• Straighten Your Legs</li> <li>• Bend Your Legs</li> <li>• Relax</li> <li>• Chin Up</li> <li>• Go Up/Go Down</li> <li>• Move Slower/Move Faster</li> <li>• Stop</li> </ul>
<b>Key Points (flyer)</b>	<p><b>Basic Turns</b></p> <ul style="list-style-type: none"> <li>• All turns should begin and end in the neutral position</li> <li>• Initiate by first looking slightly in the direction of the desired turn and then bank the shoulders</li> <li>• Lowest shoulder is the direction of the turn</li> <li>• Arch maintained throughout for stability</li> <li>• Opposite input to stop turn</li> </ul> <p><b>Advanced Turns</b></p> <ul style="list-style-type: none"> <li>• Simultaneous upper and lower body input in order to rotate around center point</li> <li>• Upper body will work the same as for a basic turn. Lower body input is based upon the turn direction and the lowest shoulder</li> <li>• 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</li> <li>• Use of opposite input to stop the turn</li> </ul>



<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student is fully briefed on key points and safety factors</li> <li>• Appropriate wind speed setting is agreed to with the instructor and method of communicating adjustments during the session is understood</li> <li>• Provide heading and reference point to begin and end the turns</li> <li>• Avoid facing your student directly toward or away from the door-way</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• Prior to transitioning from your feet to flying with your student, be sure to confirm your actions with the instructor</li> <li>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance</li> <li>• Always fly within your skill level to avoid any unnecessary risk to yourself or your student</li> <li>• Avoid overloading your students with too much information during their early development and learning of basic skills</li> <li>• The altitude at which you and your students fly should not exceed the students level of ability</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



## THE INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 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.

### Belly-Flying Turning

### 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.



#### Belly-Flying Turning

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

<b>Flying Skill</b>	Belly-Fly Up & Down (Fall Rate Control)
<b>Desired Outcome</b>	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
<b>Pre-Requisites</b>	Belly-Fly Left/Right Turns and Forward/Backward Movement
<b>Reference Material</b>	Flight Tutorial # 4 Hand Signals <ul style="list-style-type: none"> <li>● Straighten Your Legs</li> <li>● Bend Your Legs</li> <li>● Relax</li> <li>● Chin Up</li> <li>● Go Up/Go Down</li> <li>● Move Slower/Move Faster</li> <li>● Stop</li> </ul>
<b>Key Points (flyer)</b>	<p><b>Upward Movement (slow fall rate)</b></p> <ul style="list-style-type: none"> <li>● Begin in a neutral position in the center of the tunnel</li> <li>● Initiate the movement by flattening the torso</li> <li>● Once movement begins, add balanced arm and leg extension to increase drag to continue to fly up</li> <li>● Continuously manage heading with small upper body input changes</li> <li>● Neutral belly-flying position to stop the movement</li> </ul> <p><b>Downward Movement (fast fall rate)</b></p> <ul style="list-style-type: none"> <li>● Start in either a neutral belly-flying position or from the slow fall rate position</li> <li>● Initiate by arching the torso and then reduce drag by bending arms to bring wrists close to the head and bending legs</li> <li>● Balance the movements of the arms and legs to avoid unwanted drive</li> <li>● Chin Up</li> </ul>

<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student is fully briefed on key points and safety factors including the stopping points for upward movement and speed management</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>• Provide heading and reference point to complete the skills</li> <li>• Take action to avoid student drift from the center tunnel position</li> <li>• Avoid facing your student directly toward or away from the door-way</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• Prior to transitioning from your feet to flying with your student, be sure to confirm your actions with the instructor</li> <li>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance</li> <li>• Always fly within your skill level to avoid any unnecessary risk to yourself or your student</li> <li>• Avoid overloading your students with too much information during their early development and learning of basic skills</li> <li>• The altitude at which you and your students fly should not exceed the students level of ability</li> <li>• This skill requires students to fly up the center of the flight chamber, so extreme caution should be exercised in height management.</li> <li>• Start with small adjustments and work up after consistency is demonstrated</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



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

#### Pre-requisites

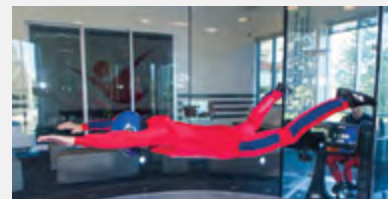
In order to learn upward and downward movement while belly-flying, you first need to be able to belly-fly in a neutral body position, hold that position stable, remain on heading, and control any unwanted forward or backward movement.

#### 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

<b>Flying Skill</b>	Belly-Fly Side-Sliding
<b>Desired Outcome</b>	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
<b>Pre-Requisites</b>	Belly-Fly Up & Down
<b>Reference Material</b>	Flight Tutorial # 5 Hand Signals <ul style="list-style-type: none"> <li>• Straighten Your Legs</li> <li>• Bend Your Legs</li> <li>• Relax</li> <li>• Chin Up</li> <li>• Go Up/Go Down</li> <li>• Move Slower/Move Faster</li> <li>• Stop</li> </ul>
<b>Key Points (flyer)</b>	<p><b>Basic movement</b></p> <ul style="list-style-type: none"> <li>• Begin in a neutral position, either in the center of the tunnel or to one side</li> <li>• Initiate the movement with balanced upper and lower body inputs</li> <li>• Slight lower leading side elbow, shoulder and knee to begin directing airflow</li> <li>• Extend the trailing arm</li> <li>• Manage heading by adjusting each input</li> <li>• Stop side-slide with opposing input</li> </ul> <p><b>Advanced movement</b></p> <ul style="list-style-type: none"> <li>• Begin in a neutral position either in the center of the tunnel or to one side</li> <li>• 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</li> <li>• With the additional speed, ensure your input to stop the side-slide is initiated sooner</li> </ul>

<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>● On-duty instructor is briefed on the activity</li> <li>● Student is fully briefed on key points and safety factors including the stopping points for upward movement and speed management</li> <li>● Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>● Provide heading and reference point to complete the skill</li> <li>● Avoid facing your student directly toward or away from the door-way</li> <li>● Enter the flight chamber only when given the "OK" by the instructor</li> <li>● Prior to transitioning from your feet to flying with your student, be sure to confirm your actions with the instructor</li> <li>● Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance</li> <li>● Always fly within your skill level to avoid any unnecessary risk to yourself or your student</li> <li>● Avoid overloading your students with too much information during their early development and learning of basic skills</li> <li>● The altitude at which you and your students fly should not exceed the students level of ability</li> <li>● This skill requires students to fly up the center of the flight chamber, so extreme caution should be exercised in height management.</li> <li>● Start with small adjustments and work up after consistency is demonstrated</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>● Goals versus outcome of the session</li> <li>● Highlight areas that were positive</li> <li>● Highlight areas of improvement pertinent to the skill being learned</li> <li>● Goal setting for the next session</li> </ul>



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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 your 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**

<b>Flying Skill</b>	Belly-Fly Entrances & Exits
<b>Desired Outcome</b>	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

<b>Pre-Requisites</b>	Belly-Fly Skills: Left/Right Turns, Forward/Backwards, and Up/Down Movement
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<b>Reference Material</b>	<p>Flight Tutorial # 6 &amp; 7 Hand Signals</p> <ul style="list-style-type: none"> <li>● Straighten Your Legs</li> <li>● Bend Your Legs</li> <li>● Relax</li> <li>● Chin Up</li> <li>● Go Up/Go Down</li> <li>● Move Slower/Move Faster</li> <li>● Stop</li> </ul>
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<b>Key Points (flyer)</b>	<p><b>Entrance</b></p> <ul style="list-style-type: none"> <li>● Begin with a stable stance in the staging area at the end of the doorway</li> <li>● Chin up and enter in to the airflow hips low toward the center of the tunnel</li> <li>● Counteract forward movement using arms forward and legs bent technique</li> <li>● Use upper body input to maintain the correct heading to enter straight</li> </ul> <p><b>Exit</b></p> <ul style="list-style-type: none"> <li>● Start in a neutral belly-flying position, facing the door way at approximately 5 feet above the net</li> <li>● Initiate a slow forward movement to the door, avoid reaching for the door frame</li> <li>● Stop at the door, grasp the frame, bend knees down to stand and step out</li> </ul>
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<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>● On-duty instructor is briefed on the activity</li> <li>● Student is fully briefed on key points and safety factors including the stopping points for upward movement and speed management</li> <li>● Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>● Provide heading and reference point to complete the skills</li> <li>● Avoid facing your student directly toward or away from the door-way</li> <li>● Enter the flight chamber only when given the "OK" by the instructor</li> <li>● Prior to transitioning from your feet to flying with your student, be sure to confirm your actions with the instructor</li> <li>● Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance</li> <li>● Always fly within your skill level to avoid any unnecessary risk to yourself or your student</li> <li>● Avoid overloading your students with too much information during their early development and learning of basic skills</li> <li>● The altitude at which you and your students fly should not exceed the students level of ability</li> <li>● This skill requires students to fly up the center of the flight chamber, so extreme caution should be exercised in height management.</li> <li>● Start with small adjustments and work up after consistency is demonstrated</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>● Goals versus outcome of the session</li> <li>● Highlight areas that were positive</li> <li>● Highlight areas of improvement pertinent to the skill being learned</li> <li>● Goal setting for the next session</li> </ul>



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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 or 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

#### Belly-Flying Entrances

## 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.



## Dynamic Progression Skills

An IBA Dynamic Flight Coach can coach the skills associated with IBA Belly-Fly Level 1 through to Dynamic Flyer Level Pro as detailed within the IBA Flight Progression Chart. In order to commence coaching within the Dynamic 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.

## Dynamic Progression Lesson Plans

### IBA LEVEL 2 – BACK-FLY LESSON PLAN # 7

<b>Flying Skill</b>	Neutral & Stable Back-Flying Position
<b>Desired Outcome</b>	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.
<b>Pre-Requisites</b>	Completed the IBA Level 1 Flyer Skills
<b>Reference Material</b>	Flight Tutorial # 14 Hand Signals <ul style="list-style-type: none"> <li>• Knees Up/Knees Down</li> <li>• Relax</li> <li>• Chin Up</li> <li>• Go Up/Go Down</li> <li>• Move Slower/Move Faster</li> <li>• Arm Position</li> <li>• Stop</li> </ul>

<b>Key Points (flyer)</b>	<ul style="list-style-type: none"> <li>• Your student's position should be spine straight and torso flat to the airflow</li> <li>• Hips should be bent with thighs 90° to torso</li> <li>• Legs bent at the knee 90°</li> <li>• Knees, shoulder-width apart, arms pressed back on to the wind and chin upences to understand where to stop</li> </ul>
<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student fully briefed on key points and safety factors</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>• Provide heading and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance</li> <li>• Avoid overloading your students with too much information during their early development and learning basic skills</li> <li>• The altitude your students fly should not exceed the students level of ability</li> <li>• 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</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



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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.

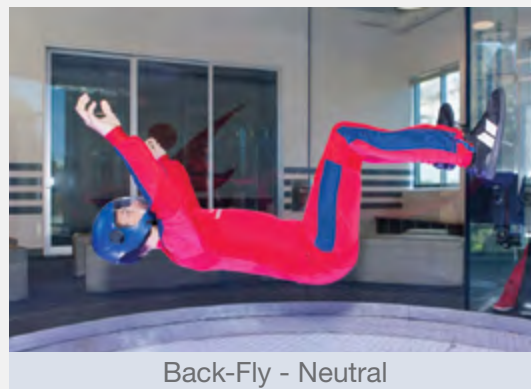
#### Preparation

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*

- 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 90° angle to your torso
- Your legs should be bent at the knee with your shin at a 90° 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 90°. 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

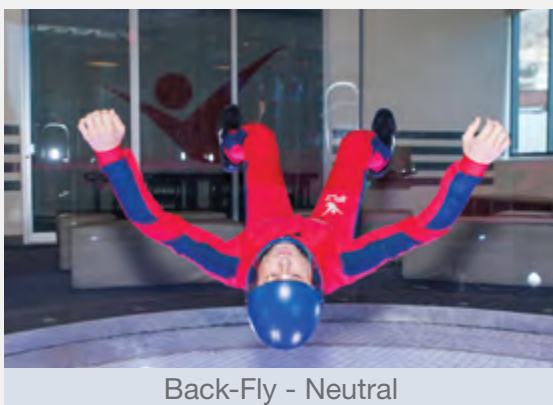


Back-Fly - Neutral

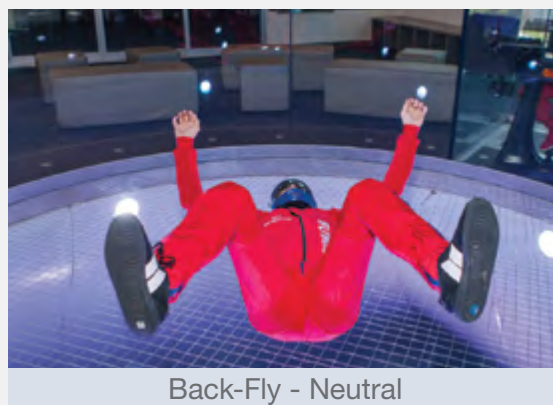
Back-Fly Neutral Body Position



## 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.



Back-Fly Neutral Body Position

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

<b>Flying Skill</b>	Back-Flying Forward & Backward
<b>Desired Outcome</b>	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.
<b>Pre-Requisites</b>	Neutral and Stable Back-Flying Position
<b>Reference Material</b>	Flight Tutorial #15 Hand Signals <ul style="list-style-type: none"> <li>• Knees Up</li> <li>• Knees Down</li> <li>• Relax</li> <li>• Chin Up</li> <li>• Go Up/Go Down</li> <li>• Move Slower/Move Faster</li> <li>• Arm Position</li> <li>• Stop</li> </ul>
<b>Key Points (flyer)</b>	<p><b>Basic Move</b></p> <ul style="list-style-type: none"> <li>• Extending and retracting legs or arms to start and stop the movements</li> <li>• Knowing how fast to travel and when to initiate the correct input to stop the movement</li> <li>• Maintaining a symmetrical shape</li> <li>• Heading management using small upper body adjustments</li> <li>• Emphasising the act of stopping and returning to a neutral position prior to initiating a new move</li> </ul> <p><b>Advanced Move</b></p> <ul style="list-style-type: none"> <li>• Introduce the combined upper and lower body input and how to balance both to ensure a smooth maneuver</li> <li>• Exaggerated inputs for faster movements</li> <li>• Understand that with additional speed, the additional emphasis on stopping and the body position</li> <li>• Maintain a symmetrical position throughout</li> </ul>

<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student fully briefed on key points and safety factors</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>• Provide heading and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• Prior to transitioning from your feet to flying with your student, be sure to confirm with the instructor</li> <li>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance</li> <li>• Avoid overloading your students with too much information during their early development and learning basic skills</li> <li>• The altitude your students fly should not exceed the students level of ability</li> <li>• Understanding that the body movements made while on the net will be more pronounced than when off the net</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



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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
- 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-Fly - Forward

Back-Flying Forward and Backward

## 15 Back-Flying Forward & Backward

### Technique and Drills

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

#### 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



Back-Fly - Backward

### 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.



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

<b>Flying Skill</b>	Back-Flying Left & Right Turn
<b>Desired Outcome</b>	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.
<b>Pre-Requisites</b>	Neutral and Stable Back-Fly Position
<b>Reference Material</b>	<p>Flight Tutorial # 16 Hand Signals</p> <ul style="list-style-type: none"> <li>● Knees Down</li> <li>● Knees Up</li> <li>● Relax</li> <li>● Chin Up</li> <li>● Go Up/Go Down</li> <li>● Turn Left/Right</li> <li>● Move Slower/Move Faster</li> <li>● Arm Position</li> <li>● Stop</li> </ul>
<b>Key Points (flyer)</b>	<p><b>Basic Turns</b></p> <ul style="list-style-type: none"> <li>● All turns should begin and end in a neutral position</li> <li>● Initiate by adjusting arms or lower to direct airflow in the opposite direction to that desired to turn</li> <li>● Maintain a flat torso position</li> <li>● Opposite input to stop turn</li> </ul> <p><b>Advanced Turns</b></p> <ul style="list-style-type: none"> <li>● Simultaneous upper and lower body input to rotate around center point</li> <li>● Exaggerated inputs for faster movements</li> <li>● Use of opposite input to stop the turn</li> </ul>



<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student fully briefed on key points and safety factors</li> <li>• Appropriate wind speed setting agreed to with the instructor and understanding of communicating adjustments during the session</li> <li>• Provide heading and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance</li> <li>• Avoid overloading your students with too much information during their early development and learning basic skills</li> <li>• The altitude your students fly should not exceed the students level of ability</li> <li>• Understanding that the body movements made while on the net will be more pronounced than when flying off the net</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 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

<b>Flying Skill</b>	Back-Flying Up and Down
<b>Desired Outcome</b>	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.
<b>Pre-Requisites</b>	Back-Flying Left/Right Turns and Forward/Backward Movement
<b>Reference Material</b>	Flight Tutorial # 17 Hand Signals <ul style="list-style-type: none"> <li>• Knees Down</li> <li>• Knees Up</li> <li>• Relax</li> <li>• Chin Up</li> <li>• Go Up/Go Down</li> <li>• Move Slower/Move Faster</li> <li>• Arm Position</li> <li>• Stop</li> </ul>
<b>Key Points (flyer)</b>	<p><b>Upward Movement (slow fall rate)</b></p> <ul style="list-style-type: none"> <li>• Begin in a neutral position in the center of the tunnel</li> <li>• Initiate the movement by slightly arching torso</li> <li>• Once movement begins, add balanced arm and leg extension/widening to increase drag to continue to fly up</li> <li>• Continuously manage heading with arm and lower leg input changes</li> <li>• Neutral back-flying position to stop the movement</li> </ul> <p><b>Downward Movement (fast fall rate)</b></p> <ul style="list-style-type: none"> <li>• Start in either a neutral back-flying position or from the slow fall rate position</li> <li>• Initiate by slightly de-arching torso and reducing extension at your arms and legs to reduce drag</li> <li>• Use balanced inputs of the arms and legs to avoid unwanted drive</li> </ul>

<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student fully briefed on key points and safety factors</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>• Provide heading and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• 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</li> <li>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance</li> <li>• Only fly to your skill level to avoid any unnecessary risk to yourself or your student</li> <li>• Avoid overloading your students with too much information during their early development and learning basic skills</li> <li>• The altitude you and your students fly should not exceed the students level of ability</li> <li>• Avoid balling up completely, make small changes to adjust fall rate in a controlled manner</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



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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)

Back-Fly Up and Down



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## 17 Back-Fly Up and Down

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### 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.



Back-Fly Up and Down

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

<b>Flying Skill</b>	Back-Flying Side Slides
<b>Desired Outcome</b>	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.
<b>Pre-Requisites</b>	Back-Flying Up and Down
<b>Reference Material</b>	<p>Flight Tutorial # 18 Hand Signals</p> <ul style="list-style-type: none"> <li>• Knees Down</li> <li>• Knees Up</li> <li>• Relax</li> <li>• Chin Up</li> <li>• Go Up/Go Down</li> <li>• Move Slower/Move Faster</li> <li>• Indicate direction to move Left/Right</li> <li>• Arm Position</li> <li>• Stop</li> </ul>
<b>Key Points (flyer)</b>	<p><b>Basic Side slide</b></p> <ul style="list-style-type: none"> <li>• Begin in a neutral position either in the center of the tunnel or to one side</li> <li>• Initiate the movement by utilizing balanced upper and lower body inputs</li> <li>• Use similar inputs to those of turning but a different combination to deflect airflow evenly to one side</li> <li>• Manage heading by adjusting/balancing each input</li> <li>• Stop side slide with opposing input</li> </ul> <p><b>Advanced Side slide</b></p> <ul style="list-style-type: none"> <li>• Begin in a neutral position either in the center of the tunnel or to one side</li> <li>• 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</li> <li>• With the additional speed, ensure your input to stop the side slide is initiated sooner</li> </ul>

<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student fully briefed on key points and safety factors</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>• Provide heading and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance</li> <li>• Avoid overloading your students with too much information during their early development and learning basic skills</li> <li>• The altitude your students fly should not exceed the students level of ability</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



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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

Back-Fly Side-Slides

## 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

<b>Flying Skill</b>	Back-Flying Entrances & Exits
<b>Desired Outcome</b>	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
<b>Pre-Requisites</b>	Back-Fly Up and Down
<b>Reference Material</b>	Flight Tutorial # 19 & 20 Hand Signals <ul style="list-style-type: none"> <li>● Knees Down</li> <li>● Knees Up</li> <li>● Relax</li> <li>● Chin Up</li> <li>● Go Up/Go Down</li> <li>● Move Slower/Move Faster</li> <li>● Arm Position</li> <li>● Stop</li> </ul>
<b>Key Points (flyer)</b>	<p><b>Entrance</b></p> <ul style="list-style-type: none"> <li>● Begin in the doorway holding the door frame facing back to the airflow</li> <li>● Gently ease back on to the airflow with chin up and flat torso</li> <li>● Release and stretch arms out in to the airflow to manage the descent</li> <li>● Push off the floor and use balanced inputs to fly to the center of the tunnel</li> </ul> <p><b>Exit</b></p> <ul style="list-style-type: none"> <li>● Start in a neutral back-flying position, feet toward the door way at approximately 3 feet above the net</li> <li>● Initiate a slow backward (feet first) movement to the door</li> <li>● Allow feet to descend to the floor and use upper body slow fall rate technique to rotate to vertical</li> </ul>



<b>Key Points (coach) Focus Areas</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student fully briefed on key points and safety factors</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>• Provide heading and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance</li> <li>• Avoid overloading your students with too much information during their early development and learning basic skills</li> <li>• The altitude your students fly should not exceed the students level of ability</li> <li>• Maintain heading control with small movements of lower body</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



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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

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## 19 Back-Fly Entrance

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### 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.



Back-Fly Entrance



## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 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

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## 20 Back-Fly Exit

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### 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.



Back-Fly Exit

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

<b>Flying Skill</b>	Barrel Roll Transitions (half and full)
<b>Desired Outcome</b>	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
<b>Pre-Requisites</b>	Completed all individual Belly-Flying and Back-Flying skills
<b>Reference Material</b>	Flight Tutorial # 64 Hand Signals <ul style="list-style-type: none"> <li>• Legs Straight</li> <li>• Legs Bent</li> <li>• Knees Down</li> <li>• Knees Up</li> <li>• Relax</li> <li>• Chin Up</li> <li>• Go Up/Go Down</li> <li>• Move Slower/Move Faster</li> <li>• Arm Position</li> <li>• Stop</li> </ul>
<b>Key Points (flyer)</b>	<ul style="list-style-type: none"> <li>• Back-to-Belly ½ Barrel Roll</li> <li>• Initiate the transition using lower body (knee) inputs first</li> <li>• Allow the upper body to follow and slightly extend arms forward to keep upper body high</li> <li>• Stop on heading in a neutral back-flying position</li> <li>• Focus on keeping legs bent/neutral to avoid typical forward drive</li> <li>• Belly-to-Back ½ Barrel Roll</li> <li>• Initiate the transition using lower body (knee) inputs first</li> <li>• Allow the upper body to follow and slightly extend arms forward to keep upper body high</li> <li>• Stop on heading in a neutral belly-flying position</li> <li>• Focus on keeping legs bent/neutral to avoid typical forward drive</li> <li>• Full Barrel Roll</li> <li>• Initiate the transition using lower body (knee) inputs first</li> <li>• Allow the upper body to follow and slightly extend arms forward to keep upper body high</li> <li>• Use momentum of the rotation to continue through the back-fly orientation</li> <li>• Stop on heading in a neutral belly-flying position</li> <li>• Focus on keeping legs bent/neutral to avoid typical forward drive</li> </ul>



<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student fully briefed on key points and safety factors</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>• Provide heading, altitude and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• Remain on your feet allowing the instructor to spot as necessary</li> <li>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance</li> <li>• The altitude for the transition should be low to the net</li> <li>• Be aware of strong potential for forward (head first direction) drive</li> <li>• 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</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



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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..

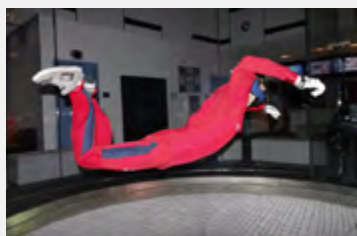
#### Technique and Drills

*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!



Full Barrel Roll

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

<b>Flying Skill</b>	Belly/Back Transitions Over the Feet
<b>Desired Outcome</b>	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
<b>Pre-Requisites</b>	Completed all individual belly-flying and back-flying skills
<b>Reference Material</b>	<p>Flight Tutorial # 23 &amp; 24 Hand Signals</p> <ul style="list-style-type: none"> <li>● Legs Straight</li> <li>● Legs Bent</li> <li>● Knees Down</li> <li>● Knees Up</li> <li>● Relax</li> <li>● Chin Up</li> <li>● Go Up/Go Down</li> <li>● Move Slower/Move Faster</li> <li>● Arm Position</li> <li>● Stop</li> </ul>
<b>Key Points (flyer)</b>	<p><b>Belly-to-Back, Back Flip</b></p> <ul style="list-style-type: none"> <li>● At waist height above the net, initiate the transition by increasing surface area at upper body</li> <li>● As lift begins, drive knees toward chest</li> <li>● Allow rotation to occur and prepare for stopping</li> <li>● Exaggerated input to stop with head back arms stretched and pressed back on to the wind with torso slightly arched, keeping knees bent</li> <li>● Once rotation stops, return to a neutral position</li> </ul> <p><b>Back-to-Belly, Front Flip</b></p> <ul style="list-style-type: none"> <li>● At waist height above the net, initiate the transition by increasing surface area at upper body</li> <li>● As lift begins, with knees bent, drive feet under your body with head back</li> <li>● Allow rotation to occur and prepare for stopping</li> <li>● Exaggerated input to stop with arms stretched forward on to the wind with torso slightly flat</li> <li>● Once rotation stops, return to a neutral position</li> </ul>

<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student fully briefed on key points and safety factors</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>• Provide heading, altitude and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• Remain on your feet allowing the instructor to spot as necessary</li> <li>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance</li> <li>• The altitude for the transition should be approximately waist height above the net</li> <li>• Be aware of students straightening their legs, creating over-rotation as they transition to their back</li> <li>• Be aware of student continuing to arch their torso, creating an over-rotation as they transition to their belly</li> <li>• Explain to your student about avoiding a pause too long in a vertical orientation which can lead to a rapid descent toward the net</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 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 your 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.



Back-to-Belly Front Flip



## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 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 your 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.



Belly-to-Back Back Flip

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

<b>Flying Skill</b>	Back-Flying 2-Way and Verticals
<b>Desired Outcome</b>	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.
<b>Pre-Requisites</b>	All Individual Back-Flying Movements
<b>Reference Material</b>	Flight Tutorial # 27 & 28 Hand Signals <ul style="list-style-type: none"> <li>● Knees Down</li> <li>● Knees Up</li> <li>● Relax</li> <li>● Chin Up</li> <li>● Go Up/Go Down</li> <li>● Move Slower/Move Faster</li> <li>● Arm Position</li> <li>● Stop</li> </ul>
<b>Key Points (flyer)</b>	<ul style="list-style-type: none"> <li>● Understanding where the other flyer is at all times and maintaining visual contact</li> <li>● Begin with basic skills, one flyer stationary and the other performing skills and then switching</li> <li>● Maintaining the same level when performing up and down skills</li> <li>● Increase the complexity when the flyers demonstrate proficiency</li> <li>● Understanding the timing of vertical drills and appropriate movements and speeds</li> <li>● Emphasising the act of stopping and returning to a neutral position prior to initiating a new move</li> <li>● If at any time a flyer loses situational awareness or demonstrates loss of control, fly low to the net and away from the situation</li> </ul>

<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student(s) fully briefed on key points and safety factors</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>• Provide heading, altitude and reference points to complete the skills briefed</li> <li>• Avoid facing directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• 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</li> <li>• Remind students of the importance of allowing the duty instructor unobstructed access to each flyer</li> <li>• Flyers should fly what has been briefed and to their skill level</li> <li>• Avoid overloading your students with too much information during their early development and learning basic skills</li> <li>• The altitude you and your students fly should not exceed the students level of ability</li> <li>• Understanding of how to respond to un-expected burbles</li> <li>• Explain to your student(s) the necessity to understand where each flyer is at all times to avoid un-necessary collisions</li> <li>• Discuss the timing of any vertical moves and an appropriate plan for direction of the movement</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 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 be 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

Back-Fly 2-Way



## 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.



Back-Fly 2-Way



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

<b>Flying Skill</b>	Walking
<b>Desired Outcome</b>	At a neutral wind speed setting, walk safely in the tunnel and able to stop movement in a controlled manner
<b>Pre-Requisites</b>	Signed-off as safe to progress through IBA Flyer Progression by an IBA Instructor
<b>Reference Material</b>	Flight Tutorial # 13 Hand Signals <ul style="list-style-type: none"> <li>● Straight Body Position</li> <li>● Face this Way</li> <li>● Forward/Backward</li> <li>● Hips Forward/Hips back</li> <li>● Relax</li> <li>● Chin Up</li> <li>● Move Slower/Move Faster</li> <li>● Arm Position</li> <li>● Stop</li> </ul>
<b>Key Points (flyer)</b>	<ul style="list-style-type: none"> <li>● Maintain a straight vertical position throughout to avoid unwanted drive</li> <li>● Take small steps initially until control and comfort is established</li> <li>● Chin up, eyes looking forward</li> <li>● Lean upper body in the opposite direction to the desired direction of travel, keeping your hips over your heels</li> <li>● Keep your weight on your heels and not your toes</li> <li>● When using arms to increase the speed of the drive use caution and avoid excessive pitch</li> </ul>

<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student fully briefed on key points and safety factors</li> <li>• Appropriate flight gear issued to the student</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>• Provide heading and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• Avoid placing yourself between the instructor and your student in case the instructor needs to provide immediate assistance</li> <li>• Use caution with excessive student body pitch resulting in loss of control</li> <li>• Avoid overloading your students with too much information during their early development and learning basic skills</li> <li>• Start wind speed low (belly speeds) until the student demonstrates control and understanding</li> <li>• Student to stop before reaching the tunnel walls, leaving enough room to complete the maneuver</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 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

Walking

## 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

#### 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 your 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

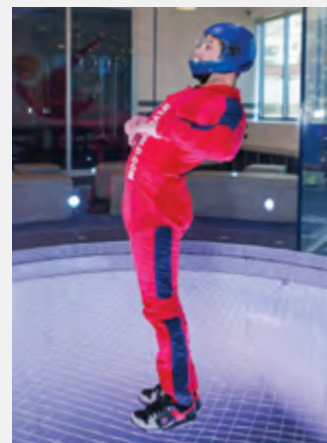
### Post-Flight Questions / Suggestions

- 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?

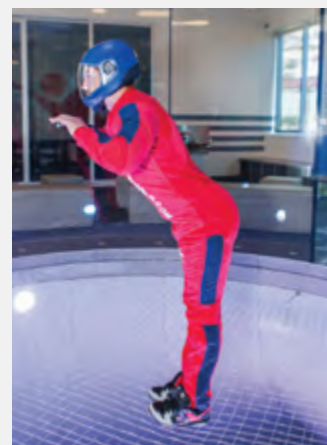
### What Skill is Next?

If 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 your 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.



Walking - Forward



Walking - Backward



Walking

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

<b>Flying Skill</b>	Belly / Back Transitions Over the Head
<b>Desired Outcome</b>	At a comfortable wind speed setting, perform a belly-to-back front flip (layout) transition and a back-to-belly back flip (layout) transition in a controlled manner throughout.
<b>Pre-Requisites</b>	Back-Fly Level 2
<b>Reference Material</b>	<p>Flight Tutorial # 67 &amp; 68 Hand Signals</p> <ul style="list-style-type: none"> <li>• Face this way</li> <li>• Knees up/Knees down</li> <li>• Hips Forward/Hips back</li> <li>• Relax</li> <li>• Chin Up/Down</li> <li>• Move Slower/Move Faster</li> <li>• Arm/Leg Positioning</li> <li>• Back-Fly/Transition</li> <li>• Stop</li> </ul>
<b>Key Points (flyer)</b>	<p><b>Belly-to-Back Front Flip</b></p> <ul style="list-style-type: none"> <li>• Start low to the net, in a belly-flying position toward one side of the tunnel</li> <li>• Initiate an upward movement before a rotation</li> <li>• Straight body throughout rotation focusing on the bottom of the tunnel (chin up)</li> <li>• End in a neutral back-flying position low to the net</li> </ul> <p><b>Back-to-Belly Back Flip</b></p> <ul style="list-style-type: none"> <li>• Start low to the net in a back-flying position flying feet first toward the wall</li> <li>• Initiate an upward movement prior to rotation</li> <li>• Shoulders rolled forward, legs out with body straight to allow lower body rotation</li> <li>• Visually spot the net, continue to rotate to a neutral belly-flying position</li> </ul>

<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student(s) fully briefed on key points and safety factors</li> <li>• Appropriate flight gear issued to the student</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood .</li> <li>• Student must demonstrate control before increasing the wind speed</li> <li>• Prioritize correcting the body position and skill execution before increasing the speed of the wind.</li> <li>• Provide heading, altitude and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• 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</li> <li>• Use caution with excessive student body pitch resulting in loss of control</li> <li>• Commit to completing the transition in its entirety</li> <li>• Avoid overloading your students with too much information during their early development and learning basic skills</li> <li>• Be sure your students are proficient at both back and belly-flying orientations prior to beginning these transitions</li> <li>• If a flyer still requires spotting assistance from the instructor, then the student is not considered ready to fly the skills with a coach or another flyer</li> <li>• Prior to flying with you or another flyer, the student must demonstrate knowledge and ability of the body mechanics required to successfully complete these maneuvers</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 67 Dynamic Belly-to-Back Front Flip

#### Pre-requisites

Before you begin to learn transitions between orientations you should be comfortable and balanced in each of the orientations. To learn to this transition you should be stable and aware in both belly-flying and back-flying orientations. Flying this particular maneuver requires a slightly different body position than traditional back-flying. It requires you to fly with your hips arched and shoulders rolled forward. Doing some exercises to develop this body position are beneficial.

#### Objectives

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

- You should aim to fly this transition with as much control as possible.
- Try to imagine an arc of momentum to give you the time necessary to fly through the transition.
- Begin and end the technique on the same level.
- Try to avoid the natural tendency of putting your chin down in the beginning of the technique, as this will create uncontrolled forward drive.
- Use the action of very slightly de-arching your chest and adding pressure to your palms and arms to create lift, not your hips.
- As you become more comfortable you can experiment with the shape of the layout.

#### Preparation

With this transition you want to imagine an arc of momentum. Knowing how to use this momentum will give you the time necessary to develop the correct body position. You should set up in the center of the tunnel at roughly hip height of the instructor and aim to finish at the same level.

#### Technique and Drills

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

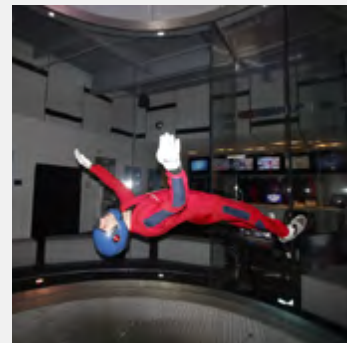
- Start the technique on your belly with your feet close to the tunnel walls. Spread your arms wide and begin to create lift by making your body flat. Straighten your legs to create the rotation.
- Keep your chin up and look down through the center of the cable floor as you pass over the vertical part of the transition. Putting your chin down will drive you blind at the tunnel wall.
- As you pass on to your back, use your hips and legs to stop the energy and assume a neutral back-fly position.



Belly, Generate Lift



Front Flip, Chin Up



Back Fly, Use Legs to Stop

Dynamic Belly-to-Back Front Flip



## 67 Dynamic Belly-to-Back Front Flip

### Post-Flight Questions / Suggestions

- Were you able to remain stable as you moved between orientations?
- Did you start and finish the maneuver on the same level?
- Were you able to avoid creating uncontrollable forward drive?
- Did you keep your chin up and allow the correct body position to create the front flip?

### What Skill is Next?

At this point in your progression, you should be comfortable flying the back-to-belly front flip and now the belly-to-back front flip maneuvers. Now, you can begin to link these skills together in order to complete full layout moves.



Dynamic Belly-to-Back Front Flip



## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 68 Dynamic Back-to-Belly Back Flip

#### Pre-requisites

Before you begin to learn transitions between orientations you should be comfortable and balanced in each of the orientations. To learn to this transition you should be stable and aware in both belly-flying and back-flying orientations. Flying this particular maneuver requires a slightly different body position than traditional back-flying. It requires you to fly with your hips arched and shoulders rolled forward. Doing some exercises to develop this body position is beneficial.

#### Objectives

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

- You should aim to fly this transition with as much control as possible.
- Try to imagine an arc of momentum to give you the time necessary to fly through the transition.
- Begin and end the technique on the same level.
- Try to avoid the natural tendency of arching your chest.
- Use the action of lifting your hips to create the lift, and straightening your legs to create the rotation.
- As you become more comfortable you can experiment with the shape of the layout.

#### Preparation

With this transition you want to imagine an arc of momentum. Knowing how to use this momentum will give you the time necessary to develop the correct body position. You should set up in the center of the tunnel at roughly hip height of the instructor and aim to finish at the same level.

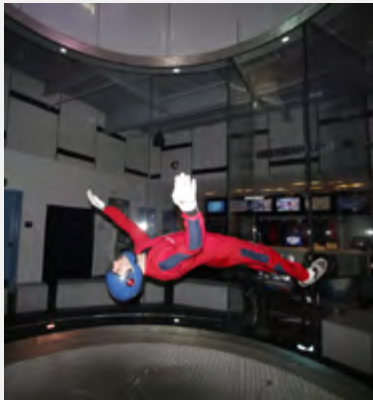
#### Technique and Drills

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

- Start the technique with your head close to the tunnel wall, move toward your feet to help manage the natural tendency to drive uncontrollably forward (toward head).
- Once you create the forward movement and are nearing the wall, create some upward movement. This vertical energy is necessary to manage the momentum throughout the rotation of the transition. Lift your hips, put your head back, and straighten your legs. This body position will drive you over your head toward your belly.
- As you pass over the vertical part of this transition, but not before, you can begin to arch your chest and open your arms to become stable on your belly.

Dynamic Back-to-Belly Back Flip

## 68 Dynamic Back-to-Belly Back Flip



Back Fly



Back Flip



Belly Fly

### Post-Flight Questions / Suggestions

- Were you able to remain stable as you moved between orientations?
- Did you start and finish the maneuver on the same level?
- Were you able to avoid uncontrollable forward drive?
- Did you keep your head back and allow the wind to push you through the technique?

### What Skill is Next?

At this point in your progression, you should be comfortable flying the belly-to-back backflip and now the back-to-belly backflip maneuvers. Now, you can begin to link these skills together in order to complete full layout moves.



Dynamic Back-to-Belly Back Flip

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

<b>Flying Skill</b>	Full Front and Back Layout
<b>Desired Outcome</b>	At a comfortable wind speed setting, perform a full belly-to-belly front flip (layout) transition and a full back-to-back back flip (layout) transition in a controlled manner throughout.
<b>Pre-Requisites</b>	Belly-to-Back Transitions Over the Head
<b>Reference Material</b>	<p>Flight Tutorial # 69 &amp; 70 Hand Signals</p> <ul style="list-style-type: none"> <li>● Face this way</li> <li>● Knees up/Knees down</li> <li>● Hips Forward/Hips back</li> <li>● Relax</li> <li>● Chin Up/Down</li> <li>● Move Slower/Move Faster</li> <li>● Arm/Leg Positioning</li> <li>● Back-Fly/Transition</li> <li>● Stop</li> </ul>
<b>Key Points (flyer)</b>	<p><b>Full Front Layout</b></p> <ul style="list-style-type: none"> <li>● Reference the techniques for belly-to-back front flip and the back-to-belly front flip</li> <li>● Incorporation of horizontal and vertical movement throughout the transition</li> <li>● Seamless connection of the two transitions that compose the maneuver</li> </ul> <p><b>Full Back Layout</b></p> <ul style="list-style-type: none"> <li>● Reference the techniques for back-to-belly back flip and the belly-to-back Back Flip</li> <li>● Incorporation of horizontal and vertical movement throughout the transition</li> <li>● Seamless connection of the two transitions that compose the maneuver</li> </ul>

<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student(s) fully briefed on key points and safety factors</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood .</li> <li>• Student must demonstrate control before increasing the wind speed</li> <li>• Prioritize correcting the body position and skill execution before increasing the speed of the wind.</li> <li>• Provide heading, altitude and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• 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</li> <li>• Ensure your students are taking gradual steps to increase the speed of the movement</li> <li>• Conscious of spatial awareness within the tunnel, specifically to be sure to not make contact with the walls or net</li> <li>• As your students become proficient at these skills, you may wish to fly with them or mix these skills in with others such as carving. In this case, be sure to keep visual contact with your student</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 69 Full Front Layouts

#### Pre-requisites

A Full Front Layout consists of performing two transitions: A belly-to-back front flip, followed by a back-to-belly front flip. Feeling comfortable flying these two transitions is then essential in mastering this skill. While flying these transitions however, you will aim to cover the entire width of the tunnel, which means you will find yourself in a head-down orientation for a brief amount of time. Therefore, being comfortable in head-down orientations, such as static head-down, or flying back layouts are helpful in learning this move.

#### Objectives

Your objectives to properly fly this maneuver should be the following:

- Perform the transitions while covering the entire width of the tunnel, similar to flying a proper full front layout.
- Avoid any sporadic movements, such as a dramatic bend at the hips to induce the transition from your belly to the head-down orientation (a common mistake). As any other move, you should aim to perform the layout in a smooth, controlled manner.
- Keep your chin up through the entire front layout, keeping a visual of the net during most of the maneuver rather than facing the wall in front of you while head down. You should end the first portion of the Full Front Layout on your back while keeping your head back, looking away from your feet. Once you start flying this move with others, keeping your chin up will allow you to keep a visual of them, a very important aspect of dynamic flying.
- When performing the second portion of the Full Front Layout (the transition from your back to end on your belly), avoid pushing on the wind using your arms; be sure to use your back and head to rotate.

#### Preparation

You will begin learning this skill at low wind speeds to ensure proper form. You will set yourself up on your belly on one side of the tunnel. Be sure to wait for your instructor's "thumbs up" before you begin the maneuver. At this time, you will slightly increase your level to follow with a front layout. Refer to the Technique and Drills section to study the proper form. You will then use the momentum as you descend down to your back to fly across the tunnel, and begin the second transition over your feet and back to your belly. Remember that both transitions are to be flown while covering the entire width of the tunnel.

#### Technique and Drills

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

- For the initial belly-to-back transition, it is important to keep your chin up at all times! This brings about a proper head-down orientation while flying across the tunnel, and will provide eventually a visual of any other flyers.
- As you perform the front layout, make sure you refrain from bending at the hips! This is a common mistake. In order to perform the transition smoothly, simply extend your legs while keeping your hips out!
- For the front layout, you will want to keep your arms extended at your sides while on your belly, then bring them up in front of you as you rotate to the head-down orientation.
- Use the momentum of the descent to fly across the tunnel on your back and begin the second transition to your belly. Ensure your head stays back, then open your chest and lean your arms back above your head for lift. Avoid pushing on the wind with your arms.

Full Front Layouts

## 69 Full Front Layouts



Belly Fly



Front Flip, Chin Up



Back Fly Front Flip



Belly Fly

### Post-Flight Questions / Suggestions

- Are you covering the entire width of the tunnel?
- Do you keep your chin up during the entire front layout?
- Do you find yourself bending at the hips to bring about the transition?
- Are you using the momentum of the descent to fly across the tunnel on your back, before beginning the second transition back to your belly?
- Do you find yourself pushing on the wind with your arms, or struggling for lift?
- What techniques do you think you could improve on during the next session?

### What Skill is Next?

Once you master this move, you will begin to learn other dynamic transitions such as head-up and head-down breakers. At this point, you are beginning to build a strong repertoire of different moves and transitions that will expand your world of dynamic flying. Start being creative by combining and mixing these moves! It will make you a stronger, more confident flyer.







## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 70 Full Back Layouts

#### Pre-requisites

A Full Back Layout is the result of the combination of two transitions: a back-to-belly backflip, followed by a belly-to-back backflip. Therefore, being comfortable flying these two transitions is required to learn this skill. The transitions are to be performed while covering the entire tunnel, which entails for the first portion, a brief moment in a head-down orientation. For this reason, being comfortable flying any head-down maneuvers is of course very helpful.

#### Objectives

Your objectives to properly fly this maneuver should be the following:

- Perform a smooth back-to-belly transition over your head, flown across the entire width of the tunnel, while avoiding any sudden, erratic movements (what instructors refer to as “hooking it” or “throwing it”). Flying this maneuver across the entire width of the tunnel means you will find yourself in a head-down orientation for a brief period of time before returning to your belly.
- Use the momentum of the descent to your belly from the first transition to fly across the tunnel, and begin your transition back to your back. Once again, this is to cover the entire tunnel. Avoid pushing on the wind with your arms to induce the transition. Pushing on the wind does not provide any lift.

#### Preparation

When first learning full back layouts, you will begin at a low wind speed while back-flying close to the wall of the tunnel and facing the opposite side. Your instructor could initially be holding on to you to ensure your safety, so make sure you wait for the “thumbs up” before you begin the maneuver. At this point, you will begin to back-fly to the opposite wall while slightly gaining altitude. As you are about to reach the wall, you will perform the transition. A proper layout will require the coordination of multiple body parts: your head, arms, chest, hips, and legs. For this reason this is one of the more difficult moves to master, but then again, nothing worthwhile is ever easy.

Once you find yourself descending back to your belly, use the built-up momentum to fly across the tunnel and begin your transition back to your back. Remember to bring your arms out in front of you for additional lift, rather than relying on the incorrect, instinctual “pushing” on the wind.

#### Technique and Drills

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

- There are a few concepts to understand when it comes to back layouts:
- Your hips control your level during the initial phase while you back-fly across the tunnel. Begin to bring out your hips out to increase the altitude before performing the transition.
- Your legs control the rotation. Extending your legs will rotate your body to the head-down orientation of the transition. This however, needs to take place in conjunction with proper chest and arm positioning to avoid any unwanted, head-down forward drive.
- Your arms are your “brakes.” You should aim to have your arms straight in front of you at the level of your belly while you adopt the head-down orientation. As you approach the opposite wall while head-down, start letting go of the brakes, while looking at the net to begin your descent back to your belly. Having your arms out not only act as your brakes, but ensure your chest is not open, or “popped out,” something you don’t want when first learning back layouts.

Full Back Layouts

## 70 Full Back Layouts

- Your chest plays a major role on forward drive as you transition to head-down. If your chest is completely open, usually meaning your arms are further out to your sides, you will have a strong, undesirable forward drive. Be sure to “cup,” or sink in your chest at first.
- Once you begin the transition, start looking at the net by bringing your chin up, without popping your chest and ensuring your arms stay out in front of you.
- For the second portion of the Full Back Layout, keep the following in mind:
  - Keep your chin up as you descend from the initial layout, and use the built-up speed to fly across the tunnel.
  - Once you’re about to reach the wall, bring your arms out in front of you, slightly cup your chest and keep your head down to induce the lift necessary for the transition back to your back. As stated before, avoid pushing on the wind with your arms and hands.



Back Fly



Back Flip



Belly Fly



Back Flip



Back Fly

### Post-Flight Questions / Suggestions

- Did you perform the layout while covering the entire width of the tunnel?
- Were you able to control the layout in a smooth manner, avoiding any sporadic movements?
- Can you control the speed and level at which you approach the opposite wall in either orientation?
- What part of your body’s surface area do you think you need to work on? Head? Arms? Chest? Hips? Legs?
- Can you use the momentum of the descent from the back layout and fly across the entire width of the tunnel on your belly before performing the second transition?
- Ask your instructor what drills would be most appropriate given your skill level.

### What Skill is Next?

As you begin to truly master this skill, you will understand the reason it is such a favorite move. It is just so much fun! You will then start to learn front layouts, and subsequently, how to enter and exit these maneuvers from different positions and situations.



**IBA LEVEL 3/4 – DYNAMIC PROGRESSION  
LESSON PLAN # 19**

<b>Flying Skill</b>	Belly/Head-Down Out-Face Carving
<b>Desired Outcome</b>	Carve the circumference of the tunnel combining a drive toward the center with a rotation. The flyers head will remain close to the center
<b>Pre-Requisites</b>	Back-Fly Level 2
<b>Reference Material</b>	Flight Tutorial # 74 Hand Signals <ul style="list-style-type: none"> <li>• Face this way</li> <li>• Chin Up/Down</li> <li>• Direction of Rotation</li> <li>• Move Slower/Move Faster</li> <li>• Arm/Leg Positioning</li> <li>• Look</li> <li>• Stop</li> </ul>
<b>Key Points (flyer)</b>	<ul style="list-style-type: none"> <li>• Initiate with a side slide</li> <li>• Continue and increase rotation by introducing a forward drive</li> <li>• Head maintains the center position in the tunnel as the body rotates around</li> <li>• Eventually work toward rotating the head down using the wall behind as the visual reference</li> </ul>
<b>Key Points (coach) Focus Areas</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student(s) fully briefed on key points and safety factors</li> <li>• Appropriate flight gear issued to the student</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood .</li> <li>• Student must demonstrate control before increasing the wind speed</li> <li>• Prioritize correcting the body position and skill execution before increasing the speed of the wind.</li> <li>• Provide heading, altitude and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• 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</li> <li>• Ensure your students are taking gradual steps to increase the speed of the movement</li> <li>• Be aware when instructing your student to rotate their head down, of the potential for them to lose awareness and control</li> <li>• It is likely that your student will not see you if you are flying with them, remember that you are responsible for maintaining visual contact with them throughout</li> </ul>

<b>Student Debriefing</b>	<ul style="list-style-type: none"><li>• Goals versus outcome of the session</li><li>• Highlight areas that were positive</li><li>• Highlight areas of improvement pertinent to the skill being learned</li><li>• Goal setting for the next session</li></ul>
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## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 74 Belly Carving

#### Pre-requisites

Before learning how to belly carve, you will first need to be sure that you are a very comfortable at belly flying, ensuring that you can confidently move in every direction comfortably, without any concern. It will also be helpful to have comfort in flying on your belly while being able to fully rotate your head from one side to the other from a neutral position and then also rotating your head from a neutral, looking forward position, to looking down and slightly behind you all while maintaining the same position within the flight chamber and not drifting toward the tunnel wall. Being confident at moving your head from side to side and back and forth and understanding how to control yourself will help in overall control while learning to carve.

Finally for the head up or out facing belly carving maneuver, it will be very useful that you have some experience either knee flying and that you are confident flying the belly to back, back flip transition.

#### Objectives

There are two main objectives that are covered within belly carving, each having their own unique skill set based upon which belly carving maneuver you wish to accomplish:

Carving with head close to center:

- To carve on your belly in a consistent circle around the tunnel with your head toward the center of the tunnel, eventually looking down and behind you.
- This technique should be done utilizing the correct body positions, with special attention paid to your legs, a long body position when necessary and the correct amount of de-arch in your chest at the appropriate time.

The carve should be performed in both directions in order to be considered mastered.

Carving with head close to wall:

- To carve on your belly in a constant circle around the tunnel with your head away from the center, close to the tunnel wall and your knees close to the center.
- This technique should be done utilizing the correct body positions, with special attention paid to your legs, a long body position when necessary and the correct amount of de-arch in your chest at the appropriate time.

The carve should be performed in both directions in order to be considered mastered.

#### Preparation

To begin, simply initiate a carve in any direction. Subsequently, increase your level while maneuvering your body toward and through the center of the tunnel.

As you cross the center of the tunnel, begin your descent to continue a carve in the opposite direction.

Once you feel comfortable flying this drill, try to time the switch to follow a proper dynamic line, making sure you always look in the direction of your carve.

Belly Carving

## 74 Belly Carving

### Technique and Drills

*In order to be successful with this skill, keep these elements in mind*

Carving with head close to the center:

- Begin in a belly flying orientation and start a rotation and slowly work your position as to slightly raise your body from a horizontal orientation.
- In the beginning, your Instructor may support you or act as a reference point to help you throughout the maneuver.
- Aim to master the understanding of how to control the speed of the rotation and building correct body position habits.
- Monitor the position of your hips, raising them (slight de-arch) as the rotation begins to pick up speed and then lowering them as you slow to stop.
- When you come to a stop, plan to remain the same distance from the center and still facing the center to either begin again in the same direction or start a rotation in the opposite direction.

### Technique and Drills

*In order to be successful with this skill, keep these elements in mind*

Carving with head close to the wall:

- Begin in a belly flying orientation and start a rotation and slowly work your position as to slightly raise your body from a horizontal orientation (head high)
- Initially your position will be mainly flat and focusing on learning the technique with your upper body to create the majority of the drive for the rotation around your knees.
- As you become comfortable controlling a flat rotation, you will begin to increase the speed of the rotation along with the pitch of your body closer to a knee flying position.
- Continue to manage the position of your body in order to balance the correct inputs to create a smooth, controlled carving motion.
- When you come to a stop, plan to remain the same distance from the center, still with your head close to the wall to either begin again in the same direction or start a rotation in the opposite direction.



Belly Carve, In-Face



Belly Carve, Out-Face

Belly Carving

## 74 Belly Carving

### Post-Flight Questions / Suggestions

- Were you able to maintain the correct body position?
- Did you maintain a consistent level and shape of the carve?
- Are you comfortable carving in both directions at the appropriate wind speed?

### What Skill is Next?

Now that you are comfortable on your belly, carving at slow to moderate wind speeds, either flying one of the techniques or having confidence flying both, you will next, if you haven't begun already begin to learn the same low speed skill, back carving, although it is possible that you may have learned these two skills simultaneously. Depending on if you have learned one element of belly carving or both will depend on which skill you learn next at an increased wind speed. Belly carving with your head close to the center is the pre-requisite skill for learning head down out-face carving and belly carving with your head close to the wall is the pre-requisite skill for learning head up out-face carving.



Belly Carving



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

<b>Flying Skill</b>	Belly/Head-Up Out-Face Carving
<b>Desired Outcome</b>	Carve the circumference of the tunnel combining a drive toward the center with a rotation and head facing the glass.
<b>Pre-Requisites</b>	Back-Fly Level 2
<b>Reference Material</b>	Flight Tutorial # 82 Hand Signals <ul style="list-style-type: none"> <li>• Face this way</li> <li>• Chin Up/Down</li> <li>• Direction of Rotation</li> <li>• Move Slower/Move Faster</li> <li>• Arm/Leg Positioning</li> <li>• Look</li> <li>• Stop</li> </ul>
<b>Key Points (flyer)</b>	<ul style="list-style-type: none"> <li>• Initiate with a side slide</li> <li>• Continue and increase rotation by introducing a backward drive toward the center</li> <li>• Knees/feet maintain the center position in the tunnel as the upper body rotates around</li> <li>• Eventually work toward becoming steeper</li> </ul>
<b>Key Points (coach) Focus Areas</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student(s) fully briefed on key points and safety factors</li> <li>• Appropriate flight gear issued to the student</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood .</li> <li>• Student must demonstrate control before increasing the wind speed</li> <li>• Prioritize correcting the body position and skill execution before increasing the speed of the wind.</li> <li>• Provide heading, altitude and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• 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</li> <li>• Avoid overloading your students with too much information during their early development and learning basic skills</li> <li>• Ensure your students are taking gradual steps to increase the speed of the movement</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 82 Back Carving

#### Pre-Requisites

Before learning how to back carve, you will first need to be sure that you are a very comfortable at back flying, ensuring that you can confidently move in every direction comfortably, without any concern. It will also be helpful to have comfort in flying on your back while being able to fully rotate your head from one side to the other from a neutral position and then also rotating your head from a neutral, looking upward position, to rotating your head back to look behind you all while maintaining the same position within the flight chamber and not drifting toward the tunnel wall.

Being confident at moving your head from side to side and back and forth and understanding how to control yourself will help in overall control while learning to carve.

Finally, it will be very useful that you have some experience with the back to belly, back flip transition along with being comfortable performing a back to belly, front flip transition.

#### Objectives

There are two main objectives that are covered within back carving, each having their own unique skill set based upon which back carving maneuver you wish to accomplish:

Carving with head close to center:

- To carve on your back in a consistent circle around the tunnel with your head toward the center of the tunnel, looking behind you toward the center of the tunnel.
- Completed utilizing the correct body position, with special attention paid to your legs, a long body position when necessary and the correct amount of arch throughout your spine at the appropriate time.
- This carve should be performed in both directions in order to be considered mastered.

Carving with head close to wall:

- To also carve on your back in a constant circle around the tunnel with your head away from the center, close to the tunnel wall and your feet close to the center.
- Completed utilizing the correct body position, with special attention paid to your legs, a long body position when necessary and the correct amount of arch throughout your spine at the appropriate time.

This carve should be performed in both directions in order to be considered mastered.

Back Carving

## 82 Back Carving

### Technique and Drills

*In order to be successful with this skill, keep these elements in mind*

Carving with head close to the center:

- Begin in a back flying orientation and start a rotation and slowly work your position as to slightly raise your body from a horizontal orientation.
- In the beginning, your Instructor may support you or act as a reference point to help you throughout the maneuver.
- Aim to master the understanding of how to control the speed of the rotation and building correct body position habits.
- Monitor the position of your hips, raising them (slight arch) as the rotation begins to pick up speed and then lowering them as you slow to stop.
- When you come to a stop, plan to remain the same distance from the center and still facing the center to either begin again in the same direction or start a rotation in the opposite direction.

Carving with head close to the wall:

- Begin in a back flying orientation and start a rotation and slowly work your position as to slightly raise your body from a horizontal orientation (head high)
- Initially your position will be mainly horizontal and focusing on learning the technique with your upper body to create the majority of the drive for the rotation around your knees.
- As you become comfortable controlling a flat rotation, you will begin to increase the speed of the rotation along with the pitch of your body, with a more feet down stance.
- Continue to manage the position of your body in order to balance the correct inputs to create a smooth, controlled carving motion.
- When you come to a stop, plan to remain the same distance from the center, still with your head close to the wall to either begin again in the same direction or start a rotation in the opposite direction.



Back Carving with Head Close to Center



Back Carving with Head Close to Wall

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## 82 Back Carving

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### Post-Flight Questions / Suggestions

- Were you able to maintain the correct body position?
- Did you maintain a consistent level and shape of the carve?
- Are you comfortable carving in both directions at the appropriate wind speed?

### What Skill is Next?

Now that you are comfortable on your back, carving at slow to moderate wind speeds, either flying one of the techniques or having confidence flying both, you will next, if you haven't begun already begin to learn the same low speed skill, belly carving, although it is possible that you may have learned these two skills simultaneously. Depending on if you have learned one element of back carving or both will depend on which skill you learn next at an increased wind speed. Back carving with your head close to the center is the pre-requisite skill for learning head down in-face carving and back carving with your head close to the wall is the pre-requisite skill for learning head up in-face carving.



Back Carving

**IBA LEVEL 3/4 – DYNAMIC PROGRESSION  
LESSON PLAN # 21**

<b>Flying Skill</b>	Back/Head-Down In-Face Carving
<b>Desired Outcome</b>	Carve the circumference of the tunnel combining a drive toward the center with a rotation. The flyers head will remain close to the center
<b>Pre-Requisites</b>	Back-Fly Level 2
<b>Reference Material</b>	Flight Tutorial # 61 & 82 Hand Signals <ul style="list-style-type: none"> <li>● Face this way</li> <li>● Chin Up/Down</li> <li>● Direction of Rotation</li> <li>● Move Slower/Move Faster</li> <li>● Arm/Leg Positioning</li> <li>● Look</li> <li>● Stop</li> </ul>
<b>Key Points (flyer)</b>	<ul style="list-style-type: none"> <li>● Initiate with a side slide</li> <li>● Continue and increase rotation by introducing a forward drive</li> <li>● Head maintains the center position in the tunnel as the body rotates around</li> <li>● Eventually work toward rotating the head back using the wall across the tunnel as the visual reference</li> </ul>

<b>Key Points (coach) Focus Areas</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student(s) fully briefed on key points and safety factors</li> <li>• Appropriate flight gear issued to the student</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood .</li> <li>• Student must demonstrate control before increasing the wind speed</li> <li>• Prioritize correcting the body position and skill execution before increasing the speed of the wind.</li> <li>• Provide heading, altitude and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• 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</li> <li>• Ensure your students are taking gradual steps to increase the speed of the movement</li> <li>• Be aware when instructing your student to rotate their head back, of the potential for them to lose awareness and control</li> <li>• Explain that during a bail, forward movement will be encountered and that neutral back-flying techniques must be used to maintain control</li> <li>• It is easy for your students to become disorientated while back-flying with their head back, be cautious and adapt your teaching to account for this</li> <li>• It is common with the laid out nature of this maneuver for the student to gain excessive altitude in the flight chamber. Assist the on-duty instructor in the wind speed management and coach your students to remain at a manageable altitude throughout</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 61 Head-Down In-Face Carving

#### Pre-requisites

Head-Down In-Face Carving is among the first of the dynamic movements for free flying bodyflight. First, your instructor will give you a briefing that will cover all of the safety aspects of this movement, along with the basic information for beginning Head-Down In-Face Carving. Prior to learning this skill you will need to have Basic Head-Down checked off, and be in control of Intermediate Head-Down skills for movement. Additionally, it is helpful to have started learning the “Shelf” style flying position position, along with the Sit-to-Head Back Flip transition training, though these skills are not required.

#### Objectives

The primary objective is to be able to safely and successfully carve around the tunnel on your head, while facing the center of tunnel. Having this position down pat will allow you to start carving with others, and is one of the fundamental skills of dynamic flying routines.

#### Preparation

You will need to begin in a Head-Down orientation, positioning yourself near the wall, allowing for a small amount space for clean airflow behind you. If you are comfortable in the Shelf position, then switch from your neutral daffy position when you are ready to begin.

#### Technique and Drills

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

##### Basic

- Side slide towards the wall to begin
- Turn to face the center of the tunnel once you have begun moving
- Add in forward drive from your hips to maintain the same distance from the wall
- Add small inputs from arms/legs/torso to manage your speed and altitude
- Look in the direction of your carve

##### Pro-tips

- The initial side slide can also be accomplished by turning slightly towards the direction you wish to go, starting a small forward drive, and then turning your shoulders back towards the center of the tunnel. This allows the momentum of the drive to get your carve started.
- The more neutral your Shelf position is during the carve (vertical torso, arms and lower legs flat to the wind to balance each other out, head back to reduce drive), the slower you will go. The more relaxed your Shelf position is during the carve (arms nearer your side, legs straighter, head not pulling back), the faster you will go.



Head-Down In-Face Carving



Head-Down In-Face Carving

Head-Down In-Face Carving



## 61 Head-Down In-Face Carving

- If you find yourself bumping against the wall more and more, arch your hips to increase your forward drive and keep your shoulders and head pointed towards the center of the tunnel until you pull away from the wall.
- Carving can be done with your head looking in any direction, but where your head looks can change where your shoulders are pointed, so be aware of this effect on your carve while you continue to carve.
- At first, carving can make you dizzy. Rest assured that this sensation goes away after only a little while as your eyes adjust to the moving visuals. Some people prefer to look at the wall during this stage, others prefer to allow their eyes to focus on a point closer in, causing the walls to blur more. Figure out what helps you the best during this learning stage.

### Post-Flight Questions / Suggestions

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

### What Skill is Next?

Once you are carving at a consistent speed, radius, and altitude, start to mix it up a little. Faster to slower, up and down, tighter turns in a small circle and larger turns using the whole tunnel. Learn to carve in both directions, and then begin learning to switch between directions. The key to much of this is controlling where your shoulders are pointed, so don't be afraid to feel them out and get comfortable with how they influence your carve.





## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 82 Back Carving

#### Pre-Requisites

Before learning how to back carve, you will first need to be sure that you are a very comfortable at back flying, ensuring that you can confidently move in every direction comfortably, without any concern. It will also be helpful to have comfort in flying on your back while being able to fully rotate your head from one side to the other from a neutral position and then also rotating your head from a neutral, looking upward position, to rotating your head back to look behind you all while maintaining the same position within the flight chamber and not drifting toward the tunnel wall.

Being confident at moving your head from side to side and back and forth and understanding how to control yourself will help in overall control while learning to carve.

Finally, it will be very useful that you have some experience with the back to belly, back flip transition along with being comfortable performing a back to belly, front flip transition.

#### Objectives

There are two main objectives that are covered within back carving, each having their own unique skill set based upon which back carving maneuver you wish to accomplish:

Carving with head close to center:

- To carve on your back in a consistent circle around the tunnel with your head toward the center of the tunnel, looking behind you toward the center of the tunnel.
- Completed utilizing the correct body position, with special attention paid to your legs, a long body position when necessary and the correct amount of arch throughout your spine at the appropriate time.
- This carve should be performed in both directions in order to be considered mastered.

Carving with head close to wall:

- To also carve on your back in a constant circle around the tunnel with your head away from the center, close to the tunnel wall and your feet close to the center.
- Completed utilizing the correct body position, with special attention paid to your legs, a long body position when necessary and the correct amount of arch throughout your spine at the appropriate time.

This carve should be performed in both directions in order to be considered mastered.

Back Carving

## 82 Back Carving

### Technique and Drills

*In order to be successful with this skill, keep these elements in mind*

Carving with head close to the center:

- Begin in a back flying orientation and start a rotation and slowly work your position as to slightly raise your body from a horizontal orientation.
- In the beginning, your Instructor may support you or act as a reference point to help you throughout the maneuver.
- Aim to master the understanding of how to control the speed of the rotation and building correct body position habits.
- Monitor the position of your hips, raising them (slight arch) as the rotation begins to pick up speed and then lowering them as you slow to stop.
- When you come to a stop, plan to remain the same distance from the center and still facing the center to either begin again in the same direction or start a rotation in the opposite direction.

Carving with head close to the wall:

- Begin in a back flying orientation and start a rotation and slowly work your position as to slightly raise your body from a horizontal orientation (head high)
- Initially your position will be mainly horizontal and focusing on learning the technique with your upper body to create the majority of the drive for the rotation around your knees.
- As you become comfortable controlling a flat rotation, you will begin to increase the speed of the rotation along with the pitch of your body, with a more feet down stance.
- Continue to manage the position of your body in order to balance the correct inputs to create a smooth, controlled carving motion.
- When you come to a stop, plan to remain the same distance from the center, still with your head close to the wall to either begin again in the same direction or start a rotation in the opposite direction.



Back Carving with Head Close to Center



Back Carving with Head Close to Wall

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## 82 Back Carving

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### Post-Flight Questions / Suggestions

- Were you able to maintain the correct body position?
- Did you maintain a consistent level and shape of the carve?
- Are you comfortable carving in both directions at the appropriate wind speed?

### What Skill is Next?

Now that you are comfortable on your back, carving at slow to moderate wind speeds, either flying one of the techniques or having confidence flying both, you will next, if you haven't begun already begin to learn the same low speed skill, belly carving, although it is possible that you may have learned these two skills simultaneously. Depending on if you have learned one element of back carving or both will depend on which skill you learn next at an increased wind speed. Back carving with your head close to the center is the pre-requisite skill for learning head down in-face carving and back carving with your head close to the wall is the pre-requisite skill for learning head up in-face carving.



Back Carving

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

<b>Flying Skill</b>	Back/Head-Up In-Face Carving
<b>Desired Outcome</b>	Carve the circumference of the tunnel combining a drive toward the center with a rotation and feet toward the center
<b>Pre-Requisites</b>	Back-Fly Level 2
<b>Reference Material</b>	Flight Tutorial # 82 Hand Signals <ul style="list-style-type: none"> <li>• Face this way</li> <li>• Chin Up/Down</li> <li>• Direction of Rotation</li> <li>• Move Slower/Move Faster</li> <li>• Arm/Leg Positioning</li> <li>• Look</li> <li>• Stop</li> </ul>
<b>Key Points (flyer)</b>	<ul style="list-style-type: none"> <li>• Initiate with a side slide</li> <li>• Continue and increase rotation by introducing a feet-first drive toward the center</li> <li>• Knees/feet maintain the center position in the tunnel as the upper body rotates around</li> <li>• Eventually work toward becoming steeper</li> </ul>
<b>Key Points (coach) Focus Areas</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student(s) fully briefed on key points and safety factors</li> <li>• Appropriate flight gear issued to the student</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood .</li> <li>• Student must demonstrate control before increasing the wind speed</li> <li>• Prioritize correcting the body position and skill execution before increasing the speed of the wind.</li> <li>• Provide heading, altitude and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• 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</li> <li>• Avoid overloading your students with too much information during their early development and learning basic skills</li> <li>• Ensure your students are taking gradual steps to increase the speed of the movement</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 82 Back Carving

#### Pre-Requisites

Before learning how to back carve, you will first need to be sure that you are a very comfortable at back flying, ensuring that you can confidently move in every direction comfortably, without any concern. It will also be helpful to have comfort in flying on your back while being able to fully rotate your head from one side to the other from a neutral position and then also rotating your head from a neutral, looking upward position, to rotating your head back to look behind you all while maintaining the same position within the flight chamber and not drifting toward the tunnel wall.

Being confident at moving your head from side to side and back and forth and understanding how to control yourself will help in overall control while learning to carve.

Finally, it will be very useful that you have some experience with the back to belly, back flip transition along with being comfortable performing a back to belly, front flip transition.

#### Objectives

There are two main objectives that are covered within back carving, each having their own unique skill set based upon which back carving maneuver you wish to accomplish:

Carving with head close to center:

- To carve on your back in a consistent circle around the tunnel with your head toward the center of the tunnel, looking behind you toward the center of the tunnel.
- Completed utilizing the correct body position, with special attention paid to your legs, a long body position when necessary and the correct amount of arch throughout your spine at the appropriate time.
- This carve should be performed in both directions in order to be considered mastered.

Carving with head close to wall:

- To also carve on your back in a constant circle around the tunnel with your head away from the center, close to the tunnel wall and your feet close to the center.
- Completed utilizing the correct body position, with special attention paid to your legs, a long body position when necessary and the correct amount of arch throughout your spine at the appropriate time.

This carve should be performed in both directions in order to be considered mastered.

Back Carving

## 82 Back Carving

### Technique and Drills

*In order to be successful with this skill, keep these elements in mind*

Carving with head close to the center:

- Begin in a back flying orientation and start a rotation and slowly work your position as to slightly raise your body from a horizontal orientation.
- In the beginning, your Instructor may support you or act as a reference point to help you throughout the maneuver.
- Aim to master the understanding of how to control the speed of the rotation and building correct body position habits.
- Monitor the position of your hips, raising them (slight arch) as the rotation begins to pick up speed and then lowering them as you slow to stop.
- When you come to a stop, plan to remain the same distance from the center and still facing the center to either begin again in the same direction or start a rotation in the opposite direction.

Carving with head close to the wall:

- Begin in a back flying orientation and start a rotation and slowly work your position as to slightly raise your body from a horizontal orientation (head high)
- Initially your position will be mainly horizontal and focusing on learning the technique with your upper body to create the majority of the drive for the rotation around your knees.
- As you become comfortable controlling a flat rotation, you will begin to increase the speed of the rotation along with the pitch of your body, with a more feet down stance.
- Continue to manage the position of your body in order to balance the correct inputs to create a smooth, controlled carving motion.
- When you come to a stop, plan to remain the same distance from the center, still with your head close to the wall to either begin again in the same direction or start a rotation in the opposite direction.



Back Carving with Head Close to Center



Back Carving with Head Close to Wall



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## 82 Back Carving

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### Post-Flight Questions / Suggestions

- Were you able to maintain the correct body position?
- Did you maintain a consistent level and shape of the carve?
- Are you comfortable carving in both directions at the appropriate wind speed?

### What Skill is Next?

Now that you are comfortable on your back, carving at slow to moderate wind speeds, either flying one of the techniques or having confidence flying both, you will next, if you haven't begun already begin to learn the same low speed skill, belly carving, although it is possible that you may have learned these two skills simultaneously. Depending on if you have learned one element of back carving or both will depend on which skill you learn next at an increased wind speed. Back carving with your head close to the center is the pre-requisite skill for learning head down in-face carving and back carving with your head close to the wall is the pre-requisite skill for learning head up in-face carving.



**IBA LEVEL 3/4 – DYNAMIC PROGRESSION  
LESSON PLAN # 23**

<b>Flying Skill</b>	Head-Up or Head-Down Carve Switches
<b>Desired Outcome</b>	Carve in either direction while head-up or head-down, both in-face and out-face. The carves and the switches should be completed under control throughout.
<b>Pre-Requisites</b>	Head-Up or Head-Down Carving
<b>Reference Material</b>	Flight Tutorial # 82 Hand Signals <ul style="list-style-type: none"> <li>● Face this way</li> <li>● Chin Up/Down</li> <li>● Direction of Rotation</li> <li>● Move Slower/Move Faster</li> <li>● Arm/Leg Positioning</li> <li>● Look</li> <li>● Stop</li> </ul>
<b>Key Points (flyer)</b>	<ul style="list-style-type: none"> <li>● In-face to in-face in either direction &amp; out-face to out-face in either direction: Slight altitude gain as the switch occurs; leading shoulder is switched from one carve to the next</li> <li>● Out-face to in-face in either direction &amp; in-face to out-face in either direction</li> <li>● Slight altitude gains as switch occurs</li> <li>● Leading shoulder remains the same from one carve to the next</li> </ul>

<b>Key Points (coach) Focus Areas</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student(s) fully briefed on key points and safety factors</li> <li>• Appropriate flight gear issued to the student</li> <li>• 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</li> <li>• Provide heading, altitude and reference point to complete the skills briefed</li> <li>• Ensure your students understand the flight path of the move to be flown</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Enter the flight chamber only when given the "OK" by the instructor</li> <li>• 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</li> <li>• Ensure your students are taking gradual steps to increase the speed of the movement</li> <li>• Keep your eyes on your student, especially when switching from out-face to in-face, students are often more focused on their body position or position in the tunnel and rarely looking for the coach.</li> <li>• Avoid setting your students up to perform the switch over or close to the door</li> <li>• Your students should be proficient at each piece of the maneuver prior to attempting a complete carve switch move</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 82 Back Carving

#### Pre-Requisites

Before learning how to back carve, you will first need to be sure that you are a very comfortable at back flying, ensuring that you can confidently move in every direction comfortably, without any concern. It will also be helpful to have comfort in flying on your back while being able to fully rotate your head from one side to the other from a neutral position and then also rotating your head from a neutral, looking upward position, to rotating your head back to look behind you all while maintaining the same position within the flight chamber and not drifting toward the tunnel wall.

Being confident at moving your head from side to side and back and forth and understanding how to control yourself will help in overall control while learning to carve.

Finally, it will be very useful that you have some experience with the back to belly, back flip transition along with being comfortable performing a back to belly, front flip transition.

#### Objectives

There are two main objectives that are covered within back carving, each having their own unique skill set based upon which back carving maneuver you wish to accomplish:

Carving with head close to center:

- To carve on your back in a consistent circle around the tunnel with your head toward the center of the tunnel, looking behind you toward the center of the tunnel.
- Completed utilizing the correct body position, with special attention paid to your legs, a long body position when necessary and the correct amount of arch throughout your spine at the appropriate time.
- This carve should be performed in both directions in order to be considered mastered.

Carving with head close to wall:

- To also carve on your back in a constant circle around the tunnel with your head away from the center, close to the tunnel wall and your feet close to the center.
- Completed utilizing the correct body position, with special attention paid to your legs, a long body position when necessary and the correct amount of arch throughout your spine at the appropriate time.

This carve should be performed in both directions in order to be considered mastered.

Back Carving

## 82 Back Carving

### Technique and Drills

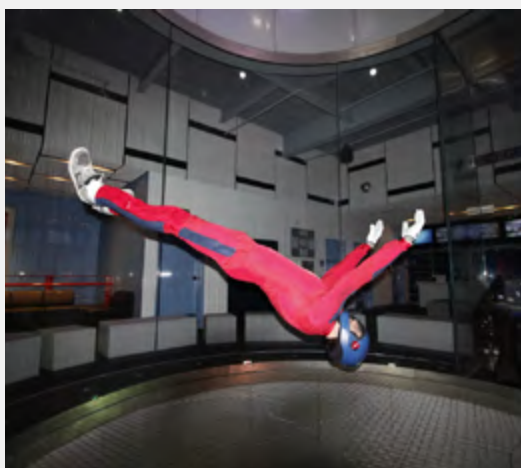
*In order to be successful with this skill, keep these elements in mind*

Carving with head close to the center:

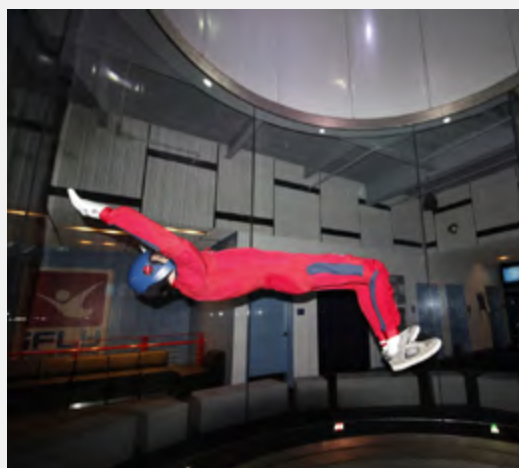
- Begin in a back flying orientation and start a rotation and slowly work your position as to slightly raise your body from a horizontal orientation.
- In the beginning, your Instructor may support you or act as a reference point to help you throughout the maneuver.
- Aim to master the understanding of how to control the speed of the rotation and building correct body position habits.
- Monitor the position of your hips, raising them (slight arch) as the rotation begins to pick up speed and then lowering them as you slow to stop.
- When you come to a stop, plan to remain the same distance from the center and still facing the center to either begin again in the same direction or start a rotation in the opposite direction.

Carving with head close to the wall:

- Begin in a back flying orientation and start a rotation and slowly work your position as to slightly raise your body from a horizontal orientation (head high)
- Initially your position will be mainly horizontal and focusing on learning the technique with your upper body to create the majority of the drive for the rotation around your knees.
- As you become comfortable controlling a flat rotation, you will begin to increase the speed of the rotation along with the pitch of your body, with a more feet down stance.
- Continue to manage the position of your body in order to balance the correct inputs to create a smooth, controlled carving motion.
- When you come to a stop, plan to remain the same distance from the center, still with your head close to the wall to either begin again in the same direction or start a rotation in the opposite direction.



Back Carving with Head Close to Center



Back Carving with Head Close to Wall

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## 82 Back Carving

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### Post-Flight Questions / Suggestions

- Were you able to maintain the correct body position?
- Did you maintain a consistent level and shape of the carve?
- Are you comfortable carving in both directions at the appropriate wind speed?

### What Skill is Next?

Now that you are comfortable on your back, carving at slow to moderate wind speeds, either flying one of the techniques or having confidence flying both, you will next, if you haven't begun already begin to learn the same low speed skill, belly carving, although it is possible that you may have learned these two skills simultaneously. Depending on if you have learned one element of back carving or both will depend on which skill you learn next at an increased wind speed. Back carving with your head close to the center is the pre-requisite skill for learning head down in-face carving and back carving with your head close to the wall is the pre-requisite skill for learning head up in-face carving.



Back Carving

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

<b>Flying Skill</b>	Bottom Loop
<b>Desired Outcome</b>	Complete a diving head-first, belly-to-back over the feet transition ending in a head-down orientation that flows in to the beginning of the next move.
<b>Pre-Requisites</b>	Full Back Layout
<b>Reference Material</b>	Flight Tutorial # 76 Hand Signals <ul style="list-style-type: none"> <li>• Face this way</li> <li>• Chin Up</li> <li>• Direction of Rotation</li> <li>• Move Slower/Move Faster</li> <li>• Arm/Leg Positioning</li> <li>• Look</li> <li>• Stop</li> </ul>
<b>Key Points (flyer)</b>	<ul style="list-style-type: none"> <li>• Initiate in the center of the tunnel while moving from one side to the other</li> <li>• Similar to performing a belly to back transition, avoid pressing down with your arms to create upper body lift</li> <li>• Arch through the bottom of the maneuver as you pass through a back flying orientation</li> <li>• Extend legs to complete the back flip to finish head down</li> </ul>
<b>Key Points (coach) Focus Areas</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student(s) fully briefed on key points and safety factors</li> <li>• Appropriate flight gear issued to the student</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>• Provide heading, altitude and reference point to complete the skills briefed</li> <li>• Understanding the avoidance of the doorway</li> <li>• Allow the instructor direct access to your student(s) always</li> <li>• Ensure the student completes the maneuver with enough space to clear the wall and the net</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>





## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 76 Bottom Loop

#### Pre-Requisites

This move simply acts as an efficient way to return to a head-down orientation as you end a back layout, whether it is to begin a subsequent layout, or enter, for example, an in-face or out-face carve head-down. Therefore, being comfortable flying full back layouts is required in order to master this skill.

A bottom loop involves a very brief transition from your belly to your back so as to return subsequently to a head-down orientation. For this reason, being proficient in belly-to-back, backflip transitions will benefit you in learning this move.

#### Objectives

Your objectives in mastering this skill should be the following:

- Perform the bottom loop at the center of the tunnel.
- Ensure your hips stay out during the entire maneuver; avoid the common mistake of bending at the hips!
- As when you're performing a belly-to-back backflip, avoid "pushing" on the wind with your hands to induce the transition.

#### Preparation

For this maneuver, begin by performing a full back layout. As you are descending back to your belly, you will prepare to perform the bottom loop, making sure you time it correctly in order for it to take place at the center of the tunnel. Once you find yourself ending the loop, you will return to a head-down orientation, to either perform another layout, or begin an in-face carve. Remember to focus on keeping your hips out during the entire maneuver.

#### Technique and Drills

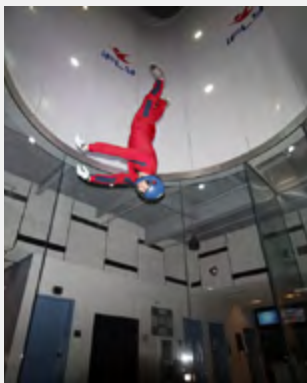
*In order to be successful with this skill, keep these elements in mind*

Carving with head close to the center:

- Cup your chest slightly and bring your arms out in front of you as you reach the center of the tunnel on your belly to begin the transition.
- Use the momentum of the layout and keep your hips out as you swing your legs back in front of you, then extend them to prompt the rotation back to head-down.
- If you bend at the hips, you will slow down to a traditional sit-fly position for a brief period of time and kill the momentum. The most important aspect to a smooth bottom loop is to keep your hips out the entire time. Thus, a good drill to practice is to fly belly-to-back, backflip transitions while keeping your hips out the entire time.
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Bottom Loop

## 76 Bottom Loop



Back Layout



Roll Through Belly, Hips Out



Roll Through Knees, Hips Out



Back Fly, Hips Out



Finish Head Down

### Post-Flight Questions / Suggestions

- Were you able to keep your hips out through the entire bottom loop?
- Do you find yourself attempting to push on the wind with your hands to induce the transition?
- Are you keeping the momentum of the layout as you perform the move or do you find yourself slowing down considerably?
- Are you able to return to a controlled, head-down orientation as soon as you finish the loop?
- What could you improve on during the next session?

### What Skill is Next?

Bottom loops are an essential part of dynamic flying. Mastering this skill will expand your repertoire of lines you are able to fly with others. Next, you will learn how to perform other dynamic moves such as head-down and head-up breakers.



Bottom Loop

**IBA LEVEL 4/PRO – DYNAMIC PROGRESSION  
LESSON PLAN # 25**

<b>Flying Skill</b>	Half & Full Breaker
<b>Desired Outcome</b>	Complete a belly-to-back barrel maneuver while maintaining a carving momentum
<b>Pre-Requisites</b>	Level 3 Dynamic Skills
<b>Reference Material</b>	Flight Tutorial # 79 Hand Signals <ul style="list-style-type: none"> <li>• Face this way</li> <li>• Chin Up</li> <li>• Direction of Rotation</li> <li>• Move Slower/Move Faster</li> <li>• Arm/Leg Positioning</li> <li>• Look</li> <li>• Stop</li> </ul>
<b>Key Points (flyer)</b>	<b>Head up</b> <ul style="list-style-type: none"> <li>• Build momentum in a dive and complete a ½ barrel roll for ½ breaker and 540° barrel roll for a full breaker</li> <li>• Chin up looking forward and focus on getting back to a head-up orientation</li> <li>• Leading shoulder will change after both moves</li> </ul> <b>Head Down</b> <ul style="list-style-type: none"> <li>• Build momentum in a dive and complete a ½ barrel roll for a ½ breaker and 540° barrel roll for a full breaker</li> <li>• Visual reference toward the center and ending in a carve</li> <li>• Leading shoulder will change after both moves</li> </ul>
<b>Key Points (coach) Focus Areas</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student(s) fully briefed on key points and safety factors</li> <li>• Appropriate flight gear issued to the student</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>• Provide heading, altitude and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Allow the instructor direct access to your student(s) always</li> <li>• Ensure the student completes the maneuver with enough space to clear the wall and the net</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>



## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 79 Half Breaker

#### Pre-Requisites

A half-breaker involves performing a smooth, half barrel roll from your belly to your back as you descend from a layout or an out-face carve movement. Depending on whether you perform a head up or head down half breaker, the goal of the transition is the same, the difference being how you are entering and exiting the half breaker maneuver.

Being comfortable with the following skills will be important to the success of completing the half breaker maneuver:

- In-face and Out-face carving head-down
- In-face and Out-face carving head up
- Basic half and full barrel roll transitions
- Flying back layouts

#### Objectives

Your objectives in mastering this skill should be the following:

- The half breaker should take place as you cross the half-way point across the tunnel, whether performing a head-up or head-down maneuver.
- As you prepare to perform a head-down half breaker, make sure you direct your head towards the center of the tunnel by slightly carving alongside the wall as you descend from the back layout.
- Avoid performing what looks more like a bottom loop by returning briefly to a head-up orientation. You want to make sure you stay in a belly orientation as you bring your trailing arm across and in front of you to perform the roll before returning to a head-down carve.
- For a head-up half breaker, be sure to direct your feet toward the center of the tunnel, slightly carve alongside the wall of the tunnel as you are descending.

#### Preparation

For the head down half breaker, you will begin by performing a back-layout. As you descend back to your belly, begin to rotate in order to point your head towards the center of the tunnel. As you approach the half-way point across the tunnel, begin to bring your trailing arm across your body and out in front of you to perform the roll to your back. As soon as you find yourself ending the roll, transition back to a head-down carve.

To initiate a head-up half breaker, you will usually begin from an out-facing carve while head-up and then begin the descent feet first down in the to the maneuver. As you approach the center of the tunnel, continuing the carving rotation and laying down toward your belly, bring your trailing arm across your body to perform a belly to back barrel roll. As you approach your back and continuing to use the rotating momentum, form a good head-up carving body position, raise up and continue a smooth motion.

#### Technique and Drills

*In order to be successful with this skill, keep these elements in mind*

For a smooth half-breaker, make sure to follow this technique:

Head-Up:

- Make sure your feet are toward the center of the tunnel as you prepare to perform the breaker.
- Keep your chin up and arch your hips as you roll.
- Move your trailing arm across your body to become your lead arm once the breaker is complete and you continue the carve motion.

Half Breaker

## 79 Half Breaker

### Head-down:

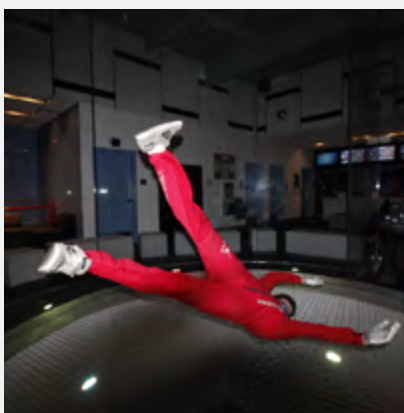
- Make sure you are facing the center of the tunnel as you prepare to perform the breaker.
- Keep your hips out and your chin up as you perform the roll.
- Bring you trailing arm across your body and out in front of you to initiate the barrel roll to your back.
- Keep your hips out as you end the breaker to “pop up” back into a head-down orientation and follow with a curve.



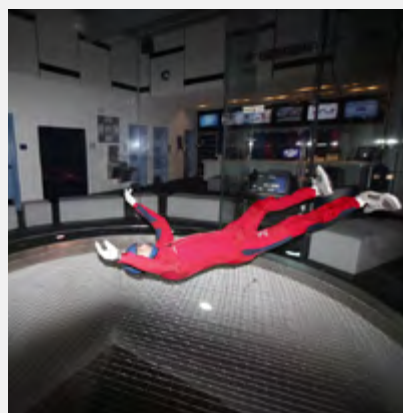
Back Layout



Initialize Barrel Roll with Trailing Arm



Half Breaker



Finish on Back, Pop Up to Head

### Post-Flight Questions / Suggestions

- Did you perform the breaker while keeping your chin up, facing the center of the tunnel?
- Did you keep your hips out during the entire maneuver, or do you find yourself transitioning momentarily to a head-up orientation with your hips bent?
- Did you find yourself smoothly keeping the momentum, or slowing down to perform the breaker?
- What could you improve on during the next session?

### What Skill is Next?

Once you learn to fly half-breakers, you will begin to experiment with other dynamic transitions, such as full breakers or bottom loops. Once you know how to in-face and out-face carve both head-up and head-down and perform layouts, all these transitional maneuvers will serve to ensure a smooth dynamic flow to your flying.



Half Breaker

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

<b>Flying Skill</b>	Belly/Back Flares
<b>Desired Outcome</b>	Complete a carving move followed by a diving maneuver to either a belly or back orientation using the momentum to descend and then flattening your position to gain lift and return to a carve
<b>Pre-Requisites</b>	Level 3 Dynamic Skills & Head-Down Carving In/Out-Facing
<b>Reference Material</b>	Flight Tutorial # 78 Hand Signals <ul style="list-style-type: none"> <li>• Face this way</li> <li>• Chin Up</li> <li>• Direction of Rotation</li> <li>• Move Slower/Move Faster</li> <li>• Arm/Leg Positioning</li> <li>• Look</li> <li>• Stop</li> </ul>
<b>Key Points (flyer)</b>	<b>Belly Flare</b> <ul style="list-style-type: none"> <li>• Built momentum in a dive</li> <li>• Descend to a belly orientation and flatten out</li> <li>• Chin up looking in the direction of the dive with a slight arch</li> <li>• Ascend to a carving position</li> </ul> <b>Back Flare</b> <ul style="list-style-type: none"> <li>• Built momentum in a dive</li> <li>• Descend to a back orientation and flatten out</li> <li>• Chin up looking in the direction of the dive</li> <li>• Ascend to a carving position</li> </ul>
<b>Key Points (coach) Focus Areas</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student(s) fully briefed on key points and safety factors</li> <li>• Appropriate flight gear issued to the student</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>• Provide heading, altitude and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Allow the instructor direct access to your student(s) always</li> <li>• Ensure the student completes the maneuver with enough space to clear the wall and the net</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>





## INTERNATIONAL BODYFLIGHT ASSOCIATION TUNNELFLIGHT.COM

### 78 Belly & Back Flares

#### Pre-requisites

Before learning a belly or a back flare, you should be comfortable carving in either orientation at a wide range of speeds. Flying these techniques correctly requires a three-dimensional maneuver. The body position required to do these flares correctly is best developed at low speeds first.

#### Objectives

Your objectives in mastering this skill should be the following:

- As mentioned previously flares are a three-dimensional maneuver; doing these correctly means that you must understand how to use your momentum to change levels inside the tunnel.
- The goal would be to begin a carving from a lower level in the tunnel, ascend to a higher level or the apex of the maneuver and then descend again, returning to the starting level to repeat the technique.

#### Technique and Drills

*In order to be successful with this skill, keep these elements in mind*

Back Flares:

- Start with an in-face or back-carving low and on a consistent level in the tunnel. Begin to put your chin down to allow the airflow to pass more along your upper shoulders. This along with a change to a flatter pitch of your body will generate additional lift and drag causing you to ascend in the tunnel.
- As you reach the top or apex of the maneuver, put your chin up looking down in the center of the tunnel, and pitch your body vertical, eliminating as much drag as possible to create a dive while maintaining a carve.
- As you reach the bottom of the tunnel and the dive, put your chin down and repeat the technique to ascend again.

In-face to Out-face:

- Start by carving out-face or belly-carving low in the tunnel on a consistent level. Begin to push your hips forward and cup the air slightly with your arms and shoulders to create lift and drag causing you to ascend in the tunnel.
- As you reach the top or apex of the maneuver put your chin up looking down in the center of the tunnel, pitch your body vertical eliminating as much drag as possible to create a dive while maintaining a carve.
- As you reach the bottom of the tunnel repeat the technique to ascend again.

Belly & Back Flares



## 78 Belly & Back Flares



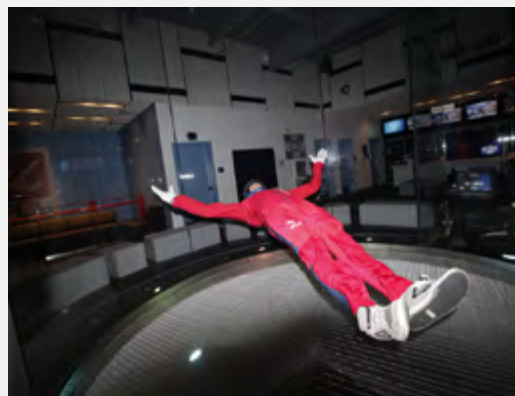
Belly Fly In-Face Carve



Belly Flare



Back Fly In-Face Carve



Back Flare

### Post-Flight Questions / Suggestions

- As you were performing the flares did you start and finish on the same level?
- Was each flare move conducted smoothly?
- Were you able to create consistency between the flares?

### What Skill is Next?

Once you can perform the flares with some control and consistency, you should begin switching directions in the flares. This technique is the same as switching carves but with flares in the middle.



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

<b>Flying Skill</b>	2-Way & 4-Way Dynamic Dive Pool
<b>Desired Outcome</b>	Complete all of the maneuvers contained within the 2 or 4 way dynamic dive pool. Using the IBA Draw Generator, select sequences from each of the dive pools to create sequences to practice
<b>Pre-Requisites</b>	Dynamic Level 4 Flying Skills
<b>Reference Material</b>	<a href="#">IBA Dynamic Dive Pool Video</a> Hand Signals <ul style="list-style-type: none"> <li>• Go/ Stop</li> <li>• Move Up/Down</li> <li>• Move Faster/Slower</li> <li>• Look/Watch</li> <li>• Stop</li> </ul>
<b>Key Points (flyer)</b>	<ul style="list-style-type: none"> <li>• Be aware of the other flyers in the group</li> <li>• Understanding of the rules and judging criteria</li> <li>• Arrange flyers appropriately based upon each person's skill level</li> </ul>
<b>Key Points (coach)</b>	<ul style="list-style-type: none"> <li>• On-duty instructor is briefed on the activity</li> <li>• Student(s) fully briefed on key points and safety factors</li> <li>• Appropriate flight gear issued to the student</li> <li>• Appropriate wind speed setting is agreed to with the instructor and the method of communicating adjustments during the session is understood</li> <li>• Provide heading, altitude and reference point to complete the skills briefed</li> <li>• Avoid facing your student directly toward or away from the doorway</li> <li>• Allow the instructor direct access to your student(s) always</li> <li>• Ensure that your flyers are aware of who is the dedicated leader for the group</li> <li>• Students should be comfortable flying 2-Way routines prior to continuing to learning 4-Way routines</li> <li>• Ensure that your students are briefed on specific times during the routine where they might lose sight of their partner(s) and when they should anticipate re-gaining visual contact</li> <li>• Discuss options for "bailing" with your students if they aren't able to re-gain visual contact at any time</li> <li>• Your students should be aware of where inside the flight chamber each maneuver should be completed (i.e. distance from the wall or above the net etc.)</li> </ul>
<b>Student Debriefing</b>	<ul style="list-style-type: none"> <li>• Goals versus outcome of the session</li> <li>• Highlight areas that were positive</li> <li>• Highlight areas of improvement pertinent to the skill being learned</li> <li>• Goal setting for the next session</li> </ul>