

MFG: SKY VENTURE  
RIDE: SKY VENTURE  
NEW - Kiddie

**SKYVENTURE®**  
**OPERATION MANUAL**

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**SkyVenture, Inc.**

**Version 1, May, 1998**

**SKYVENTURE®**  
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## 1. INTRODUCTION TO SKYVENTURE®

SkyVenture® is a sport and amusement attraction designed by SkyVenture, Inc. This attraction offers the thrills and excitement of free-fall skydiving to virtually anyone.

The SkyVenture® attraction is a space age vertical wind tunnel that floats participants (patrons referred to as Flyers), individually with an instructor, on a 120 MPH column of air. The sensation of skydiving is further enhanced by large screen video displays that simulate a skydiver's free-fall adventure.

Patrons first have an opportunity to observe other Flyers in the wind tunnel by watching through windows in the Staging/Viewing Area on the first floor of the attraction.

Each new group of up to ten (10) Flyers is then greeted by their Flight Instructor and escorted to the Briefing Room on the second floor.

In the Briefing Room, Flyers are shown an introductory videotape about SkyVenture®, basic wind tunnel techniques, and safety procedures. The Flight Instructor then reiterates important procedural and safety information, answers any questions, and individually works with each Flyer on basic wind tunnel flying techniques and body position by having each Flyer lay on a cushioned surface while extending arms and legs in the proper positions. Time allocated: up to 20 minutes.

Upon completion of the briefing process, the Flight Instructor then escorts the group to the 2<sup>nd</sup> floor Gear Room where each Flyer is issued a flightsuit, helmet, goggles, ear plugs, optional flight shoes (if his/her footwear is unsuitable), and a locker token. Flyers are given ample time to put on their equipment over their street clothes (a private Dressing Room is available for patrons who desire to use it). They are reminded to remove all loose objects and jewelry and can store their belongings in a locker. Time allocated: up to 20 minutes.

After the Flyers finish suiting up, the Flight Instructor escorts the group downstairs to the 1<sup>st</sup> floor Waiting Area just outside the Wind Tunnel door. Key safety points are repeated and equipment is checked.

When the time is appropriate, the Flight Instructor opens the door to the Wind Tunnel and leads the group into the Wind Tunnel Flight Deck. The Flight Deck is a separate corridor on the perimeter of the main Wind Tunnel Flight Chamber with open accessways leading directly to the Flight Chamber on each end. The Wind Tunnel door is then closed by a Flight Instructor.

One-by-one, each Flyer has an opportunity to enter the main Flight Chamber where the Flight Instructor assists that Flyer in flying. Total time allocated for a group of ten Flyers in the Wind Tunnel: 20 minutes.

## 2. DEFINITIONS

**CONTROL PANEL** – panel with joystick and on/off switches with regulate airflow in the Flight Chamber

**CONTROL ROOM** – area off limits to patrons in which the Flight Controller operates the Wind Tunnel

**EARPLUGS** – generally available soft earplugs issued to Flyers and Flight Instructors to be worn while in the Wind Tunnel portion of the attraction

**ELBOW PADS** – generally available sport pads worn over the flightsuit to protect the elbows

**FLIGHT CONTROLLER** – Flight Instructor who regulates airflow in the Flight Chamber by the Control Panel in the Control Room

**FLIGHT CONTROL CENTER** – Separate ground level ticketing/gift shop area

**FLIGHT DECK** – the antechamber area in the Wind Tunnel perimeter in which Flyers wait their turn in the Flight Chamber

**FLIGHT INSTRUCTOR** – Staff member who teaches basic wind tunnel flying techniques to Flyers and who guides Flyers through the SkyVenture experience.

**FLIGHT SHOES** – rubber-soled slip-on shoes worn if Flyer's normal street shoes are the type which might come loose in the tunnel

**FLIGHT SUIT** – custom made skydiving overalls worn over street clothes, available in various sizes

**FLYER** – a participating patron

**GOGGLES** – skydiving goggles with adjustable strap

**HELMET** – skydiving helmet with adjustable chinstrap

**KNEE PADS** – generally available sport pads worn over the flightsuit to protect the knees

**MANIFEST** – staff member(s) responsible for ticketing and/or merchandise sales

**OBSERVER** – a patron who observes Flyers in the Flight Chamber via the windows in the Staging/Viewing Area, but does not otherwise directly participate in the SkyVenture experience

**SITE MANAGER** – the General Manager, Assistant Manager or other staff member designated as the person in charge of the attraction during specific hours of operation.

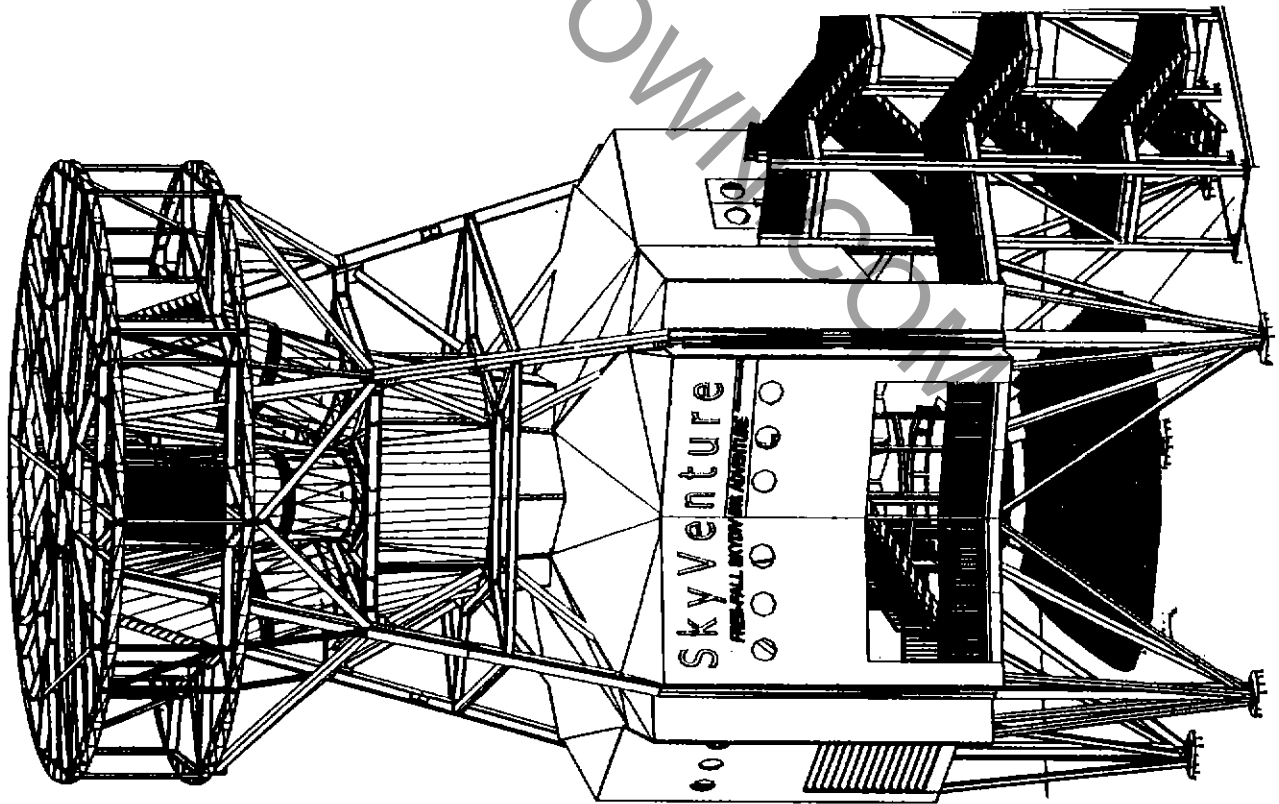
**STAGING/VIEWING AREA** – Flight Level area in which Observers may watch Flyers in the Flight Chamber. Also area where new Flyers assemble at the beginning of their experience and are greeted by their Flight Instructor

**WAITING AREA** – area just outside the Wind Tunnel where Flyers wait for the group ahead of them to finish their session in the Wind Tunnel

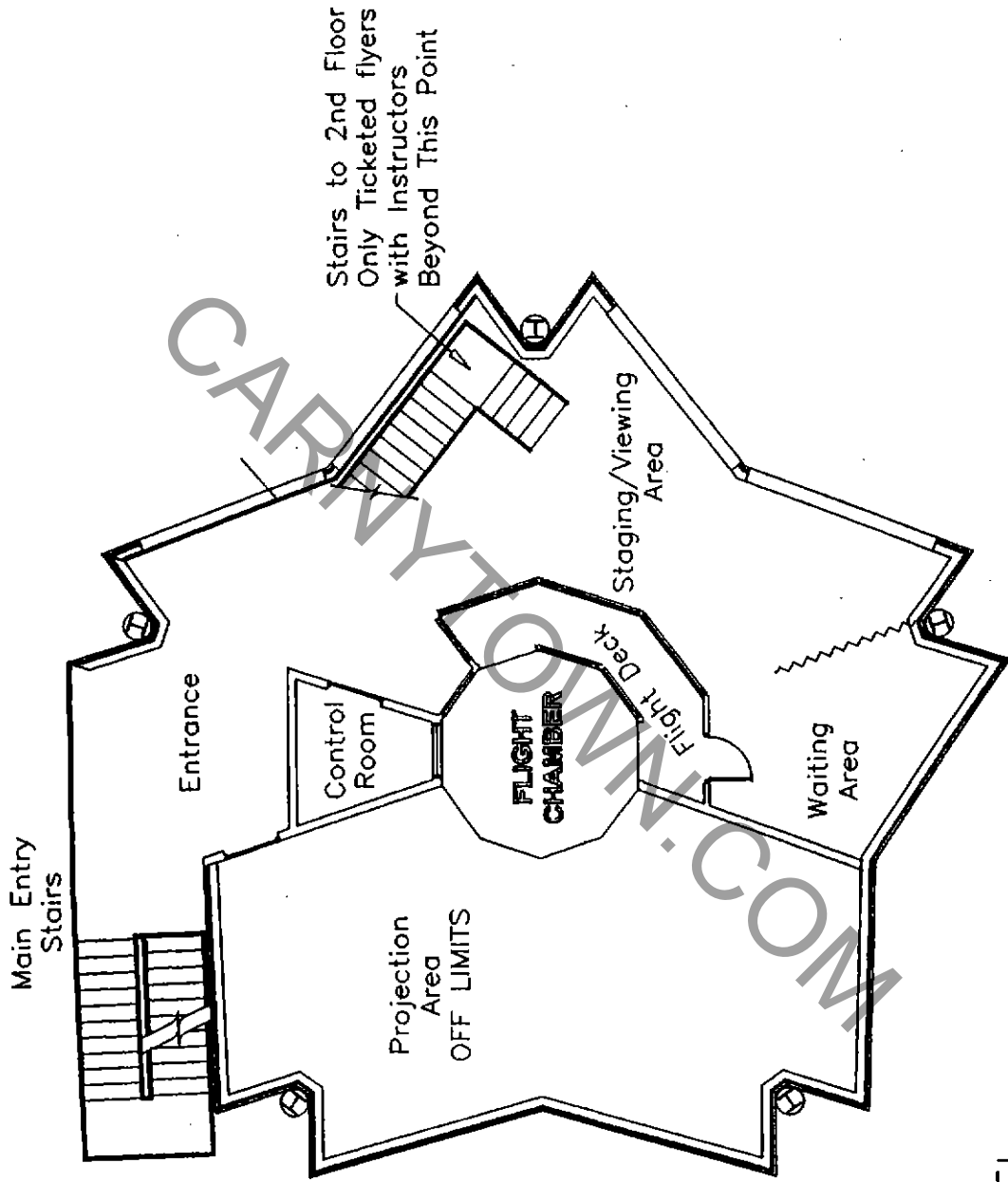
### 3. STEP-BY-STEP SUMMARY OF PATRON EXPERIENCE

1. Manifest Staff issues a ticket and wristband to each paid Flyer in the Flight Control Ticketing Center. Paid Observers are issued Observer tickets only.
2. Flyers and/or Observers proceed on foot from the Flight Control Center to the SkyVenture stairway and up the stairway to the Staging/Viewing Area on the First Floor. Observers are restricted from access beyond the Staging/Viewing Area and may leave SkyVenture via the exit at any time.
3. Flyers are greeted in the Staging/Viewing Area by their Flight Instructor. Their Flight Instructor leads a group of up to ten (10) Flyers up the internal stairway to the Briefing Room on the Second Floor. The Flight Instructor then takes each Flyer's ticket stub and verifies each wristband.
4. In the Briefing Room, Flyers are shown an instructional videotape and then taught basic wind tunnel flying techniques and safety precautions by their Flight Instructor.
5. The Flight Instructor then leads the group to the Gear Room on the Second Floor where each Flyer is issued a Flightsuit, Helmet, Goggles, Earplugs, optional Flightshoes (if the Flyer's street shoes are unsuitable), knee and elbow pads, and any other optional flight gear. Each Flyer also receives a token for a locker.
6. Flyers are then given an opportunity to put on their flight gear and store any loose items in their locker.
7. The Flight Instructor then reassembles the group and leads them back down the internal stairway to the Waiting Area just outside the tunnel door on the First Floor.
8. When the previous group has completed their session in the wind tunnel, the Flight Instructor opens the wind tunnel door and leads the group into the Flight Deck antechamber.
9. The Flight Instructor then closes the wind tunnel door, enters the main chamber and signals to the first Flyer to enter the main wind tunnel chamber.
10. At the Flight Instructor's signal, the Controller increases airspeed in the wind tunnel. The Flight Instructor assists the Flyer. After approximately sixty (60) seconds, the Controller reduces airspeed and the Flight Instructor directs the Flyer back to the Flight Deck. The Flight Instructor then signals to the next Flyer and repeats the procedure.
11. Each group is allocated a total of twenty (20) minutes in the wind tunnel with each Flyer going one-at-a-time, then having a second turn if time permits. This normally allows each Flyer to have two (2) flying experiences of up to sixty (60) seconds each.
12. At the conclusion of the group's session, the Flight Instructor reopens the wind tunnel door and leads the group back upstairs to the Gear Room where they can change out of their flight gear.
13. Flyers can leave via the external stairway at their leisure.

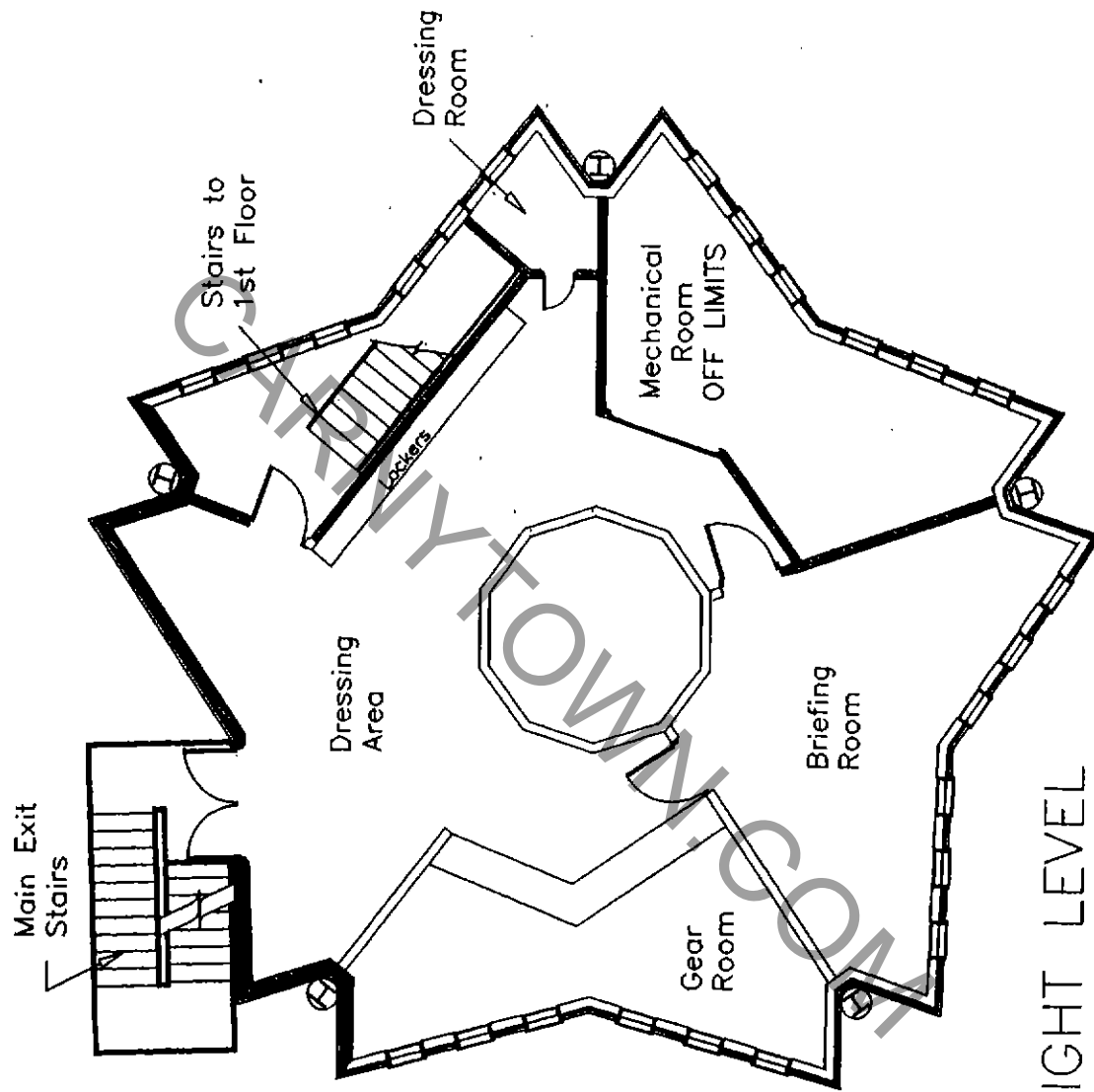
EXTERIOR VIEW  
OF SKYVENTURE®



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FLIGHT LEVEL  
First Floor



PRE-FLIGHT LEVEL  
Second Floor

## **5. DETAILED DESCRIPTION OF ATTRACTION**

### **STRUCTURE**

The steel structure is designed to support the first and second level concrete floors, test section, diffuser, drive fans, inlet and exit ducts and exit vane assembly from the ground up. Consequently, the stud walls on both the lower and upper occupied levels are not load bearing walls.

### **INLET CONTRACTION**

The inlet contraction is a composite fiberglass/foam core structure consisting of 10 identical panels fastened together with stainless steel fasteners. The panels are suspended from the bottom of the flying chamber by a bolted flange at the top of the contraction, and the bottom of the contraction is suspended from the lower portion of the structure via brackets at each joint. Care should be taken not to walk or otherwise put excessive load on the contraction.

An expanded metal fence is installed from the ground level to the bottom of the inlet contraction to prevent any foreign objects of sufficient size and weight to be ingested into the tunnel and risk injury to equipment or personnel.

### **WIRE FLOOR**

The floor of the tunnel is 3/32 galvanized aircraft cable woven into a 2" x 2" grid. One end of the cable is fixed and the other end is attached through a compression spring. The initial compression of the springs are adjusted to give the proper "bounce" to the floor. Since the cable penetrates the wall of the tunnel at angles ranging from 90 to 162 degrees, custom machined stainless steel fittings provide the appropriate bend radius for the cable to attach to the spring holder.

### **TUNNEL VIEWING WALLS**

The viewing walls of the tunnel are 3/4" to 1 1/2" acrylic panels which are fitted into steel frames, then trapped into place with a wooden stop. Four sides of the tunnel have acrylic panels that are 8 feet in height. These panels are mitered and bonded together to form a minimum joint to allow the viewing of the rear projection screen located directly behind the windows.

### **ENTRANCE AND EXIT DOORS**

Immediately outside the flying chamber is a staging area. Two door openings lead into the flying chamber from the staging area. While the tunnel is in operation, the pressure in this staging area is the same as the flying chamber. This pressure is substantially lower

than the outside pressure and therefore, the door leading from the staging area to the outside cannot be opened until the air speed is reduced.

### **DIFFUSER**

Twelve feet above the wire floor, the flying chamber walls start to diverge at a slight angle, slowing the flow from that point to the fan inlet ducts. Flyers will be unable to fly higher than this point for any given wind speed due to this diffusion. The diffuser is lined with perforated metal with dense fiberglass sandwiched between the steel and the outer plywood walls. This construction is used to absorb as much of the fan noise as possible.

### **INLET FAIRINGS AND DUCTS**

At the top of the diffuser, the flow is separated into 5 fan inlet ducts which transition the flow from five "pie" shaped segments to the circular duct of the fans. Each of these ducts are lined with the same noise absorption material as the diffuser. The gaps between each of the ducts have a galvanized steel fairing between them meeting radially at a center nose cone. A light is located in the center of this nose cone to provide general lighting for the tunnel.

### **FAN/MOTORS**

The five 225 cm, 8 bladed, variable pitch fans are driven by direct drive 125 horsepower synchronous motors. The fan ducts are mounted in a near vertical orientation on the inlet side flange of the ducts. A neoprene gasket separates the fan duct from the motor mount structure. A flexible connector is used to separate the inlet duct from the motor mount structure as well as the fan duct from the exit ducts.

### **EXIT DUCT/VANES**

Downstream of the fans, the exit duct transitions the flow from the circular duct to a rectangular duct before making a near 90 degree bend via a set of fixed turning vanes to direct the flow in a radial direction. The exit duct and the short radial duct are acoustically treated the same as the diffuser and inlet ducts. The flow then goes through one more set of vertically oriented diffusion vanes before dumping into the atmosphere. The vertical exit vanes are adjustable to the optimum angle of attack.

### **MECHANICAL SYSTEMS**

#### **MOTOR POWER SYSTEMS**

The five 125 horsepower fan motors are powered by 1200 Amp, 480 Volt Motor Control Center (MCC). The MCC is configured with across the line starter relays for each motors coupled with time delay relays which delays the starting of the subsequent motors until the previous motors were up to speed. A step down transformer provides the 400 amp 120/208 v service to the rest of the tunnel building.

**PITCH CONTROL SYSTEM**

The airspeed is controlled by variable pitch fan blades. To set the pitch, a joy stick on the control console is moved which varies the current through five current-to-pressure valves (I/P). The I/P delivers a control pressure of zero to 15 psi. to control valves on each fan housing. These valves regulate the flow of the 25 psi drive pressure being delivered to fan hub which pitch the blades. The control pressure is balanced by calibrated springs in a mechanical feed back mechanism.

The movement of the Speed Control Lever (SCL) on the control console from full closed to full open results in the variation of the pitch of the blades from 0 to approximately 23 degrees. This pitch setting is that required to absorb the full load power of the motors, approximately 140 hp.

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## 6. SYSTEM OPERATION

### GENERAL DESCRIPTION

The tunnel operation is controlled from a control console located adjacent to the test section. The control console should be attended by a qualified operator any time the tunnel is in operation. The following procedures cover the Start-up, Normal Operation, Shut-down and Emergency Stop procedures to be used in the tunnel.

### START-UP

- Ensure all scheduled maintenance and inspections items are current. (See Maintenance Schedule below)
- Ensure Control Panel Key Switch is in OFF position.
- Ensure Speed Control Lever is in MIN Flow (Fully back) position.
- Ensure Starter Power Levers at Motor Control Center (MCC) are in the ON position .
- Ensure Tunnel Door is closed (Door Light indicates Closed)
- Turn Control Panel Key Switch to the ON position
- Turn Compressor switch to ON position
- Start Fan 1 by turning the momentary FAN #1 switch to on position for one second then release. (Red light should go out, green light comes on)
- After 5 seconds, start Fan 2 in the same manner.
- Start subsequent fans after waiting approximately 5 seconds from the previous fan start.
- After last fan has been started, the blue "OK to Pitch" light should be illuminated. Note: if blue light fails to come on, check compressor operation.

### NORMAL OPERATION

Adjust speed of tunnel to desired velocity by moving Speed Control Lever (SCL).

- Air Speed is monitored by the velocity meter on the Control Console.
- Adjustment to the airspeed should be made by slow movements of the control lever in order to avoid over-correction.
- The calibration chart of showing average tunnel velocity for SCL position should be used to estimate the required Lever settings. Desired Airspeed can normally be attained by moving SCL to the position indicated on the chart
- When the tunnel is to be opened to bring the next group of flyers in, set the tunnel speed to minimum as follows:
- Pull Speed Control Lever to the full back position (This results in approximately 4 ma reading on the SCL position readout.)
- After Minimum Speed has been reached (Approximately 75 MPH) Tunnel door may be opened.

### SHUT-DOWN

- At the end of the day or when the tunnel will be unused for more than 1 hour, a normal shut down is accomplished in the following manner:
- Adjust flow to minimum speed (SCL in full back position)
- Wait approximately 15 Seconds
- Turn Key-switch to OFF position

### EMERGENCY STOP

- Emergency stop can be accomplished by either turning the key-switch off or depressing the Red EMERGENCY STOP (E-Stop) button on the control console.
- After depressing the E-stop button, turn key-switch to OFF position then pull the E-stop back to the ON position.

## 7. FLIGHT SAFETY GUIDELINES

### FLIGHT DECK

Flyers are not to remove helmets or goggles at any time while in the Flight Deck area.

The next Flyer waiting in line should position his/her body in the Flight Chamber doorway opening so that he/she will be ready when the Flight Instructor beckons. This also puts that Flyer in a position to catch or deflect a Flyer already in the Flight Chamber who accidentally floats into that opening.

### FLIGHT CHAMBER

No flight gear is to be removed at any time.

Upon a Flyer's first entry into the Flight Chamber, the Flight Instructor should have the Flyer lay down on his/her stomach on the floor screen before signaling to the Controller to increase airspeed. On a Flyer's second turn in the Flight Chamber, this step may not be necessary and minimum airspeed may not be required to start the session if the Flyer, in the opinion of the Flight Instructor, had demonstrated sufficient flight proficiency during their first flight.

Flight Instructors are to attempt to remain vertical at all times and keep their feet in contact with the floor screen at all times, except when walking to reposition.

Whenever a Flyer gives the "tumbs down" signal described in the Instruction Video Script portion of this Operations Manual, the Controller should immediately reduce airspeed. See also the Panicked Flyer section of this manual.

Flight Instructors are to hold each Flyer by the grips on the Flyer's flightsuit or as otherwise necessary to safety assist the Flyer in the wind. A Flight Instructor may only release hold of the Flyer if the Flyer appears to demonstrate sufficient flight proficiency, in the opinion of the Flight Instructor.

Flyers are restricted to horizontal "floating" and are not to be allowed to attempt any advanced flying maneuvers.

Flyers are to be kept to the center of the Chamber whenever possible. Flight Instructors should never allow Flyers to move beyond the Flight Instructor's easy reach either horizontally or vertically.

No horseplay or dangerous flying will be allowed.

## **8. EMERGENCY PROCEDURES**

### **PANICKED FLYER**

If a Flyer becomes hysterical or begins to panic while in the Flight Chamber, the Controller should immediately reduce airspeed and the Flight Instructor should then help the Flyer back to the Flight Deck.

If a Flyer becomes hysterical or begins to panic while in the Flight Deck, the Controller should illuminate the End-of-Session warning light system to alert the Flight Instructor and Flyer who are in the Flight Chamber that airspeed is about to be reduced, then reduce airspeed. The Flight Instructor may assist the panicked Flyer from the Wind Tunnel if necessary.

### **CUTS, SCRAPES, BRUISES, EYEWASH**

If a Flyer reports cuts, scrapes or bruises, and requests first aid materials such as band aids, supply such materials from the First Aid Kit available on-site. Similarly, if a Flyer reports a foreign object in their eye and requests an eyewash bottle, supply one from the First Aid Kit available on-site. If any other first aid or medical assistance may be needed, or give them directions to a local hospital and/or offer to call a taxi on their behalf.

### **ACCIDENTS**

In addition to these procedures, the Site Manager and all staff members are to conform to procedures and guidelines outlined by local and state authorities governing the recording and notifying of authorities about serious injuries and fatalities.

If a Flyer has a serious accident while in the Flight Chamber, the Controller should immediately reduce airspeed.

For accidents anywhere on site, including the Flight Chamber, other areas of the SkyVenture structure, in or around the Flight Control Center, or on the grounds, the following procedures should be used:

1. The Site Manager should be immediately notified.
2. If there is an accident, keep all onlookers from the area. The entire staff is to help do this.
3. A staff member designated by the Site Manager is to call the proper authorities immediately and give location and type of the incident.
4. The victim is not to be moved unless that person is in a position that remains life threatening.
5. The Site Manager or a staff member designated by the Site Manager is to remain at the victim's side until help arrives.
6. If first aid or life saving measures are given, do not move or change anything (all personnel are to remain on site) until authorized to leave by local authorities having jurisdiction.
7. If the event has been captured on video, keep the tape in your possession pending legal counsel.
8. Complete an Incident Report Form.

**FIRES**

A minor fire endangers equipment and poses a minor danger to customers and staff members. A minor fire can be put out using available fire extinguishers.

A major fire poses a serious risk to customers, staff members, and equipment. Anyone who is not experienced using fire extinguishers should not attempt to put out a major fire. These are the procedures to follow in the event of a major fire:

1. Stay Calm.
2. Notify the Site Manager, call the local fire department and/or other appropriate authorities.
3. Move all customers to safety. Use the Public Address system if the fire location dictates building evacuation.
4. Assist with crowd control until the situation is resolved.
5. Gather information and complete an Incident Report Form.

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## 9. PATRON RESTRICTIONS

### AGE

SkyVenture does not have an upper or lower age limit, however there is a height limit of 42 inches. Parents of minors (under the age of 18) must sign a waiver and release form prior to allowing any minors to fly in SkyVenture

### PHYSICAL AND MENTAL CONDITIONS

A sign similar to the following should be posted conspicuously in the Flight Control Ticketing Area:

#### WARNING

**YOU ASSUME ALL RISKS OF ANY NATURE FOR ANY INJURY, DEATH, OR OTHER DAMAGES, WHETHER FORESEEABLE OR NOT, ARISING FROM YOUR PARTICIPATION IN THIS ACTIVITY. YOU SHOULD NOT PARTICIPATE IN THIS ACTIVITY IF YOU HAVE A HEART CONDITION, NECK OR BACK INJURY, OR OTHER CONDITION WHICH WOULD INCREASE YOUR RISK OF INJURY, OR ARE UNDER THE INFLUENCE OF ALCOHOL, DRUGS, OR OTHER MEDICATION, CHEMICAL OR SUBSTANCE.**

Also, a sign should be posted which specifically states that: **THIS IS A HIGH-ACTIVE SPORT.**

### WEIGHT

SkyVenture will restrict to deny the participation of any patron based on their weight and build.

### RELEASE AND WAIVER FORMS

SkyVenture may require all Flyers to sign a release and waiver form prior to Flying in SkyVenture.

### INSURANCE

Patron restrictions will be modified to be compatible with SkyVenture insurance requirements as applicable.

## **10. STAFF**

Staff functions are in two main areas of the attraction: the Flight Control Center ticketing and merchandise center; and the SkyVenture itself.

### **MANIFEST**

Manifest staff members are responsible for ticketing and merchandise sales in the Flight Control Center ticketing and merchandise center.

### **FLIGHT INSTRUCTOR**

Flight Instructors are responsible for leading a group of patrons through the entire SkyVenture process after they have been ticketed by the Manifest Staff. Flight Instructors will have normally had prior experience as wind tunnel instructors and/or sky divers, however, each Flight Instructor will be specifically trained in SkyVenture techniques by factory authorized SkyVenture personnel.

### **CONTROLLER**

A Flight Instructor will serve as Controller. The Controller operates the equipment which regulates airspeed in the main chamber.

### **GEAR ROOM ATTENDANT**

The Gear Room Attendant dispenses and collects flightsuits, helmets, goggles, earplugs, knee and elbow pads, and any other gear supplied to Flyers.

### **SITE MANAGER**

The Manager responsible for overall attraction. The site manager must be trained and certified by factory authorized personnel.

## 11. TYPICAL FLIGHT INSTRUCTOR ROTATION

Five or six Flight Instructors (F I) should be used on a given shift. The sixth would normally be a newer Flight Instructor gaining experience and is not mandatory for operation of the attraction.

Six Flight Instructors would simultaneously staff the various stages of the attraction as follows:

- 1 F I serving as Controller
- 2 F I in Wind Tunnel with group of Flyers (or 1 if newer F I not in training)
- 1 F I in Briefing Room with group
- 1 F I in Dressing Area while group is suiting up
- 1 F I Working Gear Room counter

For a given F I, his/her typical work rotation would be:

- 1 Briefing Room instruction
- 2 Dressing Room
- 3 Wind Tunnel
- 4 Gear room
- 5 Controller
- 6 Tunnel backup (if desired)

Typical sequencing for a given F I would be:

1. F I greets his/her group in Staging/Viewing Area after completing tunnel backup (while the main F I of that previous group takes that group back upstairs for undressing and debrief)
2. F I leads group up the stairs, around to left and into Briefing Room. F I waits at the door to tear of ticket stub as each Flyer enters room and to verify that each has a wristband.
3. F I shows video and instructs. F I collects signed waivers.
4. F I leads group into Gear Room and instructs them while they dress, assisting with equipment as needed.
5. F I leads group downstairs to Waiting Area.
6. After preceding group has finished in tunnel, F I with waiting group is joined by Back-up F I (who had just finished as Controller of preceding group) and they lead group into Flight Deck, stopping at the opening, then having first Flyer wait at the opening while the F I enters the main Flight Chamber. Back-up F I is at tail end of line, closes tunnel door after group is in, and takes position at the other opening poised to assist if needed and to assist Flyers back into Flight Deck after their flight. After all have flown twice, Back-up F I opens tunnel door.
7. F I leads his/her group back upstairs for undressing, pep talk, debrief and closing thanks.
8. F I then relieves Gear Room person
9. When relieved after Gear shift, F I then goes downstairs and relieves Controller.
10. When relieved after Controlling one tunnel session, F I then walks around to join waiting group as Back-up F I.
11. After serving as Back-up F I, sequence starts over again.

## 12. SKYVENTURE INSTRUCTIONAL VIDEO SCRIPT

The follow is a suggested script for the instructional video tape shown to Flyers during the instruction period prior to their flight. The same information should be reiterated by the Flight Instructor during the Flyer's class in the briefing room:

"Welcome to the world of high adventure skydiving.

Welcome to the world of SkyVenture.

Today you will travel at over 120 miles per hour on a cushion of air.

Today you will travel in the most advanced, space-age system ever created to let you experience the world of high altitude skydiving jumping out of an airplane.

Your Flight Instructor will show you the basic skills and accompany you into the wind tunnel but you are the flyer in this special world.

This is your special journey.

You will need special skydiving equipment and a few basic skydiving skills and we will help you every step of the way.

To prepare for your flight, first remove all loose objects.

This includes all jewelry such as earrings, bracelets, watches, necklaces, and loose-fitting rings.

Remove all contents from your pockets.

Your belongings can be safely stored in a locker while you take your flight. Keep your locker key in your pants pocket before putting on your flightsuit. If you do not have an available pocket your Flight Instructor will be glad to hold the key for you.

Your flight suit goes on right over your street clothes.

For special needs, a dressing room is also available.

Make sure your flightsuit fits you correctly and feels comfortable. If it doesn't feel right, inform your Flight Instructor.

If your shoes are not suitable we will issue you special flight shoes.

Knee pads and elbow pads should fit securely and can be easily adjusted.

To insert your earplugs the end between your fingers and gently insert it part-way into your ear. It will immediately expand to original size.

Goggles should fit snugly and can be adjusted.

If you prefer, large size goggles are available to fit over glasses.

Flight helmets are available in several sizes.

Make sure your helmet is snug and feels comfortable.

Secure your chin strap and make sure it is tight.

Your chin strap can be adjusted if necessary.

Your adventure is about to begin.

Welcome to SkyVenture.

We are very proud of our team of Professional Flight Instructors and we are dedicated to making sure each of you has a safe and enjoyable experience.

Anyone can learn to fly in SkyVenture. All you have to do is hold your arms and legs in the right position so that so float like a feather on the wind. All it takes is a little bit of training and correct body position.

Just like the feather, your body should have a slight curve just like this.

Your arms should be outstretched above your head your elbows slightly bent...fingers spread open and palms facing down

Keep you tummy bent just a little, arching your back slightly.

Your legs should be spread and your knees slightly bent

Keep your chin up looking straight ahead at all times...

...then relax and let the wind do the work.

It looks easy and it is easy once to get used to flying. Remember, the important thing is to try to relax. You will quickly feel your body adjusting to the wind.

Do not to make any sudden moves with your arms or legs. If you do, it can throw you off-balance.

Also, don't try to suddenly stand up or the wind may blow you over backwards.

Don't worry, your Flight Instructor will be there to help you at all times.

Again, this is what we call the stable body position.

When it is your turn to enter the inner chamber of SkyVenture, your Flight Instructor will open the door for you. Your entire group first enters the Flight Deck staging corridor.

You Flight Instructor will then enter the main chamber and signal the first Flyer to enter, while the other wait their turn in the Flight Deck corridor.

Reach you arms out and your Flight Instructor will take hold of your wrists and help you into the airstream. Your Flight Instructor will hold you while you stabilize, then signal to the Controller to gently increase the airspeed.

Soon, you will be floating on a cushion of wind at over 120 miles per hour!

When your first session is almost over, lights will flash and the Controller will reduce the airspeed.

As the wind speed decreases, your Flight Instructor will help to back to the Flight Deck area opening. Wait in line until it is time for you second flight.

After your first flight, your Flight Instructor will then signal to the next member of your group that it is their turn.

Each Flyer will get two turns in the wind tunnel.

When your group session is completely finished, your Flight Instructor will open the chamber door and lead your group out.

There are a few basic safety rules to remember at all times.

First: Do not remove your helmet or goggles inside the wind tunnel or in the Flight Deck area (shot of person starting to do this with big red circle and slash superimposed)

Do not open attempt to open the chamber door at any time.

If you are the next person waiting in line for your turn, wait in the Flight Deck corridor opening, but not enter the main chamber until the Flight Instructor signals to you.

To make your flight more enjoyable and safe, your Flight Instructor may use a few hand signals to help you fly more smoothly.

(fore and middle fingers pulled in) This means bend your legs a little more.

(fore and middle fingers extended) This means straighten your legs out a little more.

(forefinger under chin) This means raise your head.

(vacillating hand) This means relax.

(finger across throat) This means your flight is ending.

(thumbs up) And this your Flight Instructor's hand signal asking you if everything is alright.

It is easy for you to communicate with your Flight Instructor.

To say 'yes', simply nod your head.

To say 'no', shake your head.

If you have any problems at all, signal 'thumb down' to your Flight Instructor and we will immediately stop your session.

Otherwise, your Flight Instructor will simply move your arms or legs or tummy to help you fly more smoothly.

Remember, if you have any problems, or don't feel comfortable in the wind, or need to stop for any reason at all, just signal 'thumbs down'.

Thanks for listening. Your Flight Instructor will answer any questions you may have, review many of the topics we just discussed, then work with you on the correct body position for flying in SkyVenture.

From the entire staff here at SkyVenture, thanks for coming and have a great flight!

(include warning about high-risk sport and mention of waiver)

## 13. PRE-OPERATION INSPECTIONS

### PRE-INSPECTION PROCEDURES

Prior to each day's operations, complete a thorough inspection using the Inspection Log. Two persons must sign off the inspection, and the Site Controller is ultimately responsible for signing off on all areas of the checklist as satisfactorily inspected. Complete this inspection carefully to eliminate potentially dangerous situations.

### HELPFUL TIPS TO INSPECTION

There is a difference between mentally checking something and physically checking something. In redundant activities such as inspections, it is easy to internalize the activities and miss items. Break this cycle by concentrating on the inspection. Talk with your co-inspector as you go through the check points, and verbally confirm all check procedures one at a time. Do not rush through these procedures. Make sure you and your co-inspector are not preoccupied. And finally, sign the check list only when you are confident that all safety inspections and procedures are satisfactorily completed.

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#### Warning!

**Always use safety fall protection equipment when climbing exterior of tunnel for inspections.**

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#### Notice

**Follow all federal, state, and OSHA requirements  
And use proper safety equipment for all inspections.**

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### GROUND LEVEL INSPECTIONS

1. Inspect foundation pads for cracks or damage.
2. Inspect that foundation bolts are in place and tight.
3. Inspect for proper grounding at foundation.
4. Inspect all mounting hardware for air straightener framework at air intake.
5. Inspect all assembly hardware of air straightener framework for missing or loose hardware.
6. Inspect and remove any debris from air straightener screens.
7. Visually inspect air intake plenum for visual or structural damage or wear.
8. Visually inspect the entire exterior of the tunnel structure from ground level looking for any abnormalities, structural or cosmetic.
9. Inspect stairwell and landings for damage or trip hazards.

### DECK 2, FLIGHT LEVEL INSPECTIONS

**Tunnel Exterior**

1. Visually inspect Deck 2 for any signs of structural or cosmetic signs of wear.
2. Inspect observer area for any damage or trip hazards.
3. Inspect tunnel exterior Plexiglas for any signs of damage, wear, or abnormalities, paying close attention to seams, framework, and supports.
4. Inspect that the tunnel access door area is clear of all obstacles that could impede its function or be inducted into the tunnel during normal operation.

**Tunnel Interior**

1. Visually inspect fan hubs and motors from flight level for any visual signs of damage or abnormalities.
2. Inspect floor cables for fraying, damage, or signs of wear.
3. Inspect floor cable tensioners for proper adjustment or signs of wear.
4. Inspect floor cable pass through grommets for cable wear or damage, and lubrication.
5. Inspect tunnel interior Plexiglas for signs of damage, wear, or abnormalities, paying close attention to seams, framework, and supports.
6. Inspect pre-flight area for any loose panels or damage or any loose items that could be inducted into the tunnel during normal operation.
7. Inspect tunnel access door, including door latch, hinges, and actuator for proper function or damage.

**Flight Control Room**

1. Inspect flight control room access door for proper function and locking capability.
2. Check operation of main power key switch, both 'On' and 'Off', and appropriate indications.
3. Check operation of each motor control switch, both 'On' and 'Off', and appropriate indications on status lights for all motor controllers, 1 through 5.
4. Check operation of air compressor switch, both 'On' and 'Off', and appropriate indications on status lights, including 'Low Air' light.
5. Check operation of variable pitch fan control from full feathered position to full pitch, back to full feather with appropriate indications by air speed indicator.
6. Check the operation of the emergency All Stop switch.
7. Inspect Deck 2 stairwells and landings for damage and trip hazards.

**DECK 3, BRIEFING ROOM AND GEAR ROOM LEVEL**

1. Visually inspect area for structural cosmetic damage or signs of wear.

2. Inspect Deck 3 stairwells and landings for damage and trip hazards.

#### **Briefing Room**

1. Inspect briefing room for any damaged or missing equipment, furniture, and training aids.
2. Check operation of lighting.

#### **Gear Issue Area**

1. Inspect area for any damaged or missing equipment or furniture.
2. Inspect all flight equipment for damaged or missing or inoperative parts, including goggles, helmets, flight suits, shoes, gloves, and hearing protection.

#### **Equipment Room**

1. Inspect compressor for proper oil level.
2. Inspect the compressor's electrical and pneumatic connections for damage or signs of wear.
3. Inspect all electrical panels to insure that they are all securely closed, and that this area is not used for storage.

#### **Upper Level Exterior**

1. Inspect ladders and climbing cables for damage or signs of wear.
2. Inspect electrical and pneumatic connections to the fan controllers for damage or signs of wear.
3. Inspect air discharge veins for missing, loose, or damaged hardware.

## 14. PREVENTIVE MAINTENANCE

### VAROFOIL FAN AND MOTOR ASSMEBLY

#### General

Motors must not be allowed to become coated with dirt, dust or other solid matter that could restrict surface cooling.

Examine the blade tips and the impeller track to remove any build up of dirt or grease initially after 3 months and thereafter as experience dictates.

#### Lubrication

The motor bearings and size 40A rotary seal bearing require lubrication. This will be carried out every 1,000 hours of fan and motor operation as set forth by the manufacturer's recommendations. This lubrication will be performed via the remotely located grease fittings on the external fan motor housing.

When carrying out relubrication it is essential that every trace of dirt or moisture is removed from the area around the grease nipple and that a clean grease gun is used. Only a low pressure should be required to inject the required charge, if a high pressure is required the cause should be investigated.

#### Fan Assembly Tear Down and Inspection

Full disassembly, inspection and replacement of any worn parts will be performed after the first year in service. The factory recommends this service to be performed at the five year in service date. However, for increased safety we will perform the full service and inspection after one year, and will adjust the maintenance schedule as dictated by component wear, not to exceed the factory's five year inspection requirement.

### AIR COMPRESSOR ASSEMBLY

#### General

Air compressor assembly should not be allowed to accumulate dirt or debris that would prevent normal function or cooling.

Air tank and water separator should be bled daily to remove any moisture from the system.

#### Lubrication

Compressor oil will be changed after the first 50 hours in service and in 100 hour interval thereafter.

### TUNNEL FLOOR CABLING

#### General

Visual inspection of the entire floor cabling system will be performed every day prior to start of operation. At first sign of wear or fraying the affected cable section will be replaced.

#### Tensioning Devices

Visual inspection of the tensioning devices will be performed every day prior to start of operation. At first sign of wear or damage the affected cable section will be replaced.

#### Cable Pass-through Grommets

Special attention should be taken at the area of the cable that passes through the support grommets. The cable at the grommet area shall be lubricated every month or more often as required by inspection.