January 22, 2014

Inspectional Services Department
City of Somervile
One Franey Rd.
City Hall of Somerville
Somerville MA 02143

Dear Goren Smiljick,

I am an abutter to 44 Park St., Somerville MA 02143. I live at 23 Park St.#2, I am aggrieved that the Temporary Certificate of Occupancy (TCO) issued on December 23, 2013 does not reflect the actual use that is occurring at the Locus, which affects traffic, parking, noise, traffic, vibration, smoke, dust, including all particulate matter, and attendance to performances and its corresponding impact was not contemplated by the Zoning Board of Appeals, etc. My street has been very busy lately with traffic that blocks my driveway. There has been no traffic study done relative to the Special Permit or TCO.

I am appealing to the Zoning Board of Appeals under MGL 40a and Somerville Zoning Ordinance 3.1.9 and 3.2 and 3.2.3 to rescind and revoke the Certificate of Use and/or Occupancy Building Inspection Department Permit, which under Special Conditions: refers to it as “TEMPORARY CERTIFICATE – PENDING PLANNING DEPARTMENT APPROVAL, EXPIRES March 23, 2014.” The TCO was issued by Local Inspector Floyd Richardson and Local Inspector Building Official Al Bargoot on December 23, 2013. The Building Permit Number is: CO-134162. The TCO gave occupancy for “SCHOOL FOR INSTRUCTION IN ARTS”. The TCO references Special Conditions: ZBA 2013-62, which is the Special Permit granted by the Zoning Board of Appeals (ZBA). The ZBA granted a special permit to the following entities with the following relief:

Applicant Name: Ellen Waylonis
Applicant Address: 152 Central Street, #2, Somerville, MA 02145
Property Owner Name: Belham, II, LLC
Property Owner Address: 15 Ward Street, Somerville, MA 02143
Agent Name: N/A

Legal Notice: Applicant, Ellen Waylonis, and owner, Belam, LLC, seek a Special Permit under SZO §4.4.1 to alter a nonconforming structure, SZO §7.11.8.9.a to establish a for-profit school for instruction in arts, skills, or vocational training less than 5,000 square feet with ancillary alterations to existing site plan and parking.

Zoning District/Ward: RC zone/Ward 2
Zoning Approval Sought: §7.11.8.9.a
Date of Application: September 3, 2013
Date(s) of Public Hearing: September 18, 2013
Date of Decision: September 18, 2013
Vote: 5-0

Appeal

The actual use at Esh Aerial Arts also known as Esh Circus Arts located at 44 Park St,, Somerville MA 02143 is a fitness facility or gym where rigorous physical activity is the predominant activity: using approximately 30 foot ropes and aerial fabrics that hang from the ceiling and whereby persons who pay swing on them and do certain body movements on them. They have different things hanging on or between the ropes and fabrics such as swings and circles, which are referred to as hoops.

The Eshcircusarts.com website refers to their activity as: "Want to learn to fly? Want variation in your exercise regimen? Just want to have fun? Circus classes focus on form and body awareness through skill work, with an emphasis on strength building and injury prevention. You will learn at your own pace, with movements that are tailored to your skill, fitness, and flexibility level. Esh Circus Arts is Boston's home for high-quality circus instruction and performance -- we live and breathe all things circus!..."

Their website describes activities that are not contemplated in the use allowed for by a certificate of occupancy designating "A SCHOOL FOR INSTRUCTION IN ARTS." The activities and behaviors occurring at the locus describe a fitness facility or a gym, which is not currently allowed in this zone. Also, offered performances, which were not discussed by the Zoning Board of Appeals when issuing the Special Permit would likely exceed the 49 person limit on the TCO. The property owner Bellam 11 and the applicant Esh Aerial Arts did not apply for a theatre use, yet they say on their website that they have performances.

The words INSTRUCTION and ARTS has been improperly used and misplaced. Today, much can be TAUGHT and anything can be described as an ART. For example, the art of brewing beer does not make the use any less of a manufacturing facility requirement. Arts are a defined term in the Somerville Zoning Ordinance definitions. The Definitions of Art in Somerville Zoning Ordinance 2.2.11.a Artist Studio Space was not sought nor was 2.2.11.b Arts-Related uses. Where the SZO requires "arts-related uses" subject to SPGA approval, any combination of the below uses may apply:

- Artist Live/Work Space
- Artist Studio Space
- Arts-related educational facility
- Crafts-related retail store
- Museum/gallery
- Retail sales of art and arts supplies
- Office of creative design professional (e.g., architect, landscape architect, industrial designer)
- Theater or performance space
- Other bona fide arts-related uses, subject to SPGA approval

Anything can be described as art. This is, however physical fitness. And just because they teach, doesn't make it a school. It is common for a gym or fitness facility such as The Rock Climbing Gym at 12A Tyler St., Park St., to teach many classes and its use is a fitness facility.

This gym is literally next door to the locus. My concern is that the City is pushing in such gym's without the proper use in area they don't belong and are using the Rock Climbing gym as a magnet for such uses. This was mentioned by a Zoning Board Member at the ZBA hearing. We have other gym's in Somerville that teach classes throughout the day and are still classified as gym's and fitness facilities, For example, Boston Sports Club at One Davis Square, Somerville MA 02144. Again, teaching a class does not make it a school. It is common for fitness facilities and gyms to teach classes throughout each day.

In addition to the fact that something may be taught and that some may consider the physical activity an art form cannot be the limit of factors determining the actual use at the Locus. The sheer rigorous physical activity causing calluses and tears in the skin, requiring resins to prevent slippage from the apparatus indicate that there is great physical exertion and work-out taking place, which must be considered when determining the use.

The Esh Circus Arts aka Esh Aerial Arts are involved in serious and strenuous physical activity that cannot be discounted here. This is not light exercise. People are hanging from some 30 foot ropes and scarves that are somehow rigged on the ceiling. They use apparatus for acrobatics and trapeze and do Acrobatics also on the ground. Their website says that "Students are allowed to rig their own apparatuses only with the express permission and under the supervision of an instructor. No other students are to use that equipment, and the apparatus must be taken down after use." This indicates that there is quite a range of latitude as to what a person can do and what they can do it on. Under what circumstances would an instructor give permission to allow a student to change the rigging of a 30 foot long rope or other apparatus whereby they hang from and do acrobatics and trapeze from something they refer to as flying? Rigging your own exercise apparatus some 30 feet up is not something that I am familiar with a fitness type gym facility allowing. I am not aware of any such "SCHOOL FOR THE INSTRUCTION IN ARTS" that allows this type of personal rigging of equipment from which a serious accident could occur.

I have copies of Architect Jane Hughes', license #20633, work dated October 21, 2013, numbered BP-1311974, which does not describe the use that the tenants will comply with. When I asked Mr. Al Bargoot about this, he said on January 21, 2014 that the most recent architect's drawing does state that the use of Esh Aerial Arts is a school use. He said that he does not know where this drawing is currently. If this exists, this does not change that fact that what is occurring at the locus is a fitness facility and not a "SCHOOL FOR INSTRUCTION IN ARTS." Otherwise anyone could refer to their craft as 'art' and spend enough time teaching it to make it a school and circumvent the intended gym or physical fitness use. This would apply to CrossFit gyms, Fencing Clubs, and any gym where they teach a physical fitness they call 'arts.' The obvious example of this is Martial Arts. Generally, Martial Arts facilities are not seen as "SCHOOL FOR INSTRUCTION IN ARTS" despite that they teach and instruct with classes and instructors the 'art' of Martial Arts. They are seen as fitness facilities and or gym use.

Safety is a serious issue to be considered with this type of physical fitness. A fair reading of what Aerial Arts really is and the inherent dangers cannot obfuscate the serious physical fitness and gymnasium use that underlies all of the activity. There is a reason a gymnasium requires a second means of egress and especially one that holds performances.

Other Aerial Arts gyms are not allowed to operate under a 'School for Instruction in Arts" use at the following locations by their corresponding localities.

Simply Circus Aerial Arts Studio in Newton 86 Los Angeles Street, Newton, MA 02458.
Moody Street Circus, 397 Moody Street, 2nd Floor, Waltham, MA 02453

Cirque School, 5640 1/2 Hollywood Blvd, Los Angeles, CA 90028

Air Craft Aerial Arts, 14 Tyler St., Somerville MA 02143.
SHOW Circus Studio • 150 Pleasant St, Suite #313 • Easthampton, MA 01027

I believe that the sign at the building requires zoning relief and or a permit.

I am not sure who the appropriate person is to address this request to at the Inspectional Services Department. I have addressed it to Mr. Goren Smiljick because I am told he is the Commissioner of Inspectional Services. Yet, I am also told that Mr. Goren Smiljick is not certified as a local inspector or as an Inspector of Buildings and that he is not a Conditional Appointee since he has not complied with 780 CMR 110.R7. Categories of Certification. I am told that Mr. Paul Nonni is the only Inspector of Buildings that is employed by the City of Somerville and that he is on a medical leave of absence since December 2013 and the date of return is unknown and dependent upon his medical progress. Therefore, I am addressing this request to the appropriate person at Inspectional Services, and do not want this appeal dismissed because I did not address it to a Conditional appointee or appropriately Certified person, and since I don't know who under the circumstances that is I am confident that if Mr. Smiljick is not that person, he will get it to that person.

Under the use of a "SCHOOL FOR INSTRUCTION IN ARTS," they do not need a second means of egress if they say they will have less than 49 people in the room. Though the second means of egress was requested and allowed in the changes to the non-conforming building, it is now not allegedly needed because of the "SCHOOL FOR INSTRUCTION IN ARTS" use. However, this language describing the use does not accurately describe what is TRULY and ACTUALLY going on at Esh Circus Arts aka Esh Aerial Arts located at 44 Park St., Somerville MA 02143. As a result, I request that the Temporary Certificate of Occupancy # CO-134162 be forthwith revoked, rescinded, and or withdrawn.

Sincerely,

Claudia Murrow

City Clerk
Inspectional Services Department
Zoning Board of Appeals
Zoning Board of Appeals, Chairman Herbert Foster
George Proakis
Esh Aerial Arts
Belham 11

Attachments:

1. Copy of architect's drawings
2. Copy of Temporary Certificate of Occupancy
3. Accident's Happen July 1, 2013.
4. Copy of Frequently Asked Questions by Simply Circus Aerial Arts Studio in Newton 86 Los Angeles Street, Newton, MA 02458.
   http://wiki.simplycircus.com/index.php?title=Aerial_Arts_FAQ

Disclaimer

Suspending people in mid-air is inherently dangerous. Damage to persons and property, including death, can result. This FAQ is an attempt to share knowledge and experience and to promote safety. But do not rely on anything you read here without verifying its accuracy and applicability to what you are doing.

Neither the authors of this FAQ nor Simply Circus Inc. makes any representations as to the safety or appropriateness of any practice or equipment recommendation contained herein. Always consult with your own qualified expert.

General Questions About Aerial Arts

Q. Are Aerial Arts Safe?

A. At the recreational level, so long as it is done with proper equipment, training and supervision, aerial arts are as safe as any other recreational sport or rigorous physical activity you may engage in.

Q. How do I rig XXX?

A. If you have to ask, you probably shouldn't be rigging it. In this FAQ we do include enough basic rigging information that you should be able to get a general idea of some basic rigging concepts, and understand generally how an apparatus should be rigged. We include this for informational purposes only. Consult your own qualified rigger to rig anything that a person will actually fly on.

Names and Descriptions of individual Aerial Apparatus

In this section we try to give you the names and brief descriptions of the various aerial apparatus in general use. Please note that when more than one name exists for a given art, we have used the most common name, and given the alternative names in the text.

Aerial Hoop

Aerial Hoop, also known as "Circeaux" and "Lyra", is a steel apparatus that looks like a suspended hula-hoop. Aerial hoops are usually available in single tab and double tab configurations. The act itself usually combines static and swinging trapeze skills with held poses and postures.

Aerial Silks

Silks, also known as "Tissues" or "Fabrics", is an apparatus consisting of a long piece of cloth with the center of the cloth suspended from above. The act itself involves one or more flyers performing held postures, wraps and drops.

Cloud Swing

Cloud Swing is an aerial apparatus that resembles a Spanish web in the type, length and width of material, but has loops on each end of the apparatus that are fastened to mount points, with the swing itself hanging in a V-shape. Hand and foot loops are typically attached loops to secure hand and foot dives. The act itself usually combines static and swinging trapeze skills, drops, dives, holds and rebound lifts. "Mexican Cloud Swing" is a variation on the cloud swing, but without the hand and foot loops. Instead, the performer uses their bodies to tie knots in the swing.

Corde Lisse

Corde Lisse, also known as "Rope" or "Smooth Rope", is an aerial apparatus that resembles a vertically hanging rope, but it is usually made from soft cotton about 25-30mm thick, with a loop on the top side of the rope. The act itself usually combines held postures, wraps and drops.

Cradle

Cradle, also known as "Casting Cradle" is a an aerial apparatus resembling a large rectangular frame. The frame can be fixed (static or freestanding) or swinging. The act itself involves two performers, the first being the catcher, and the second being the flyer. The catcher hangs by his or her knees from the frame, while the flyer swings holding on to the catchers hands. The flyer performs releases at the top of the swing and is re-caught in mid air. The flyer usually starts and end standing on the frame above the catcher.

Hair Hang

Hair Hang is a method of rigging a performers hair to allow aerial flight. The act itself involves a performer performing various poses, spinning, and doing other tricks while suspended.

Russian Swing

Russian Swing is an aerial apparatus most closely resembling a large playground swing. The seat is replaced by a platform (usually about 4'x6') and the chains of the playground swing are replaced by four solid arms. The swing hangs from a frame very much resembling a traditional double A-frame swing set frame. The Russian Swing has the ability to catapult a performer over 30 feet in the air. The act itself is

most closely related to the teeterboard (aka Korean Plank), with the flyers performing somersaults, twists and other aerial acrobatics before landing on crash mats, nets or other such landing areas.

Shoot-Through Ladder

Shoot-Through Ladder is a custom built aerial apparatus resembling a metal ladder revolving around a central axle. On one half of the ladder the rungs have been replaced with a trapeze. The act itself involves one flyer balancing the ladder, while a second performer does static or swinging trapeze skills on the attached trapeze bar. The name "Shoot-Through Ladder" comes from the ability of the trapeze flyer to swing or shoot through the ladder.

Spanish Web

Spanish Web is an aerial apparatus almost identical to the Corde Lisse, but with the addition of loops for hands or feet. The act itself involves everything that can be done with Corde Lisse, as well as many spinning motions made possible with the additional hand loops. A "web sitter" is often used to pull tension on the bottom of the web and to turn the web, spinning the flyer.

Trapeze

Trapeze is the overall name for a collection of closely related aerial apparatus. All trapezes are basically one or more suspended horizontal bars with vertical lines attaching it to the overhead mount point or points.

Static Trapeze

Static Trapeze is a trapeze that is not used for swinging. Static Trapeze is usually 6 feet or more off the ground. The act itself most commonly involves poses, hangs, drops and rope skills.

Swinging Trapeze

Swinging Trapeze is a trapeze that is used for swinging. Swinging trapezes usually have a 12 foot swing (the distance from the mount point to the trapeze bar), with the bar at least 10 feet off the ground. The act itself usually involves all of the skills used in static trapeze, as well as skills that revolve around the swing of the trapeze.

Flying Trapeze

Flying Trapeze is really two trapezes. The first is virtually identical to a swinging trapeze, with the addition of a raised platform for the flyer to start their swing from. The second catch trapeze is typically a smaller straight armed swinging trapeze. The act itself usually involves all aspects of swinging trapeze, as well as skills revolving around jumping from trapeze to trapeze, or from trapeze to catcher.

Low Casting

Low Casting is a mini flying trapeze rig. The act itself uses various flying and partner trapeze skills.

Washington Trapeze

Washington Trapeze, also known as "Heavy Trapeze", is a variation on static and swinging trapeze. The trapeze bar used for Washington Trapeze is typically much heavier than a normal trapeze bar, and has a small (~4" round) headstand platform on it. Washington Trapeze typically involves all aspects of static and swinging trapeze, with the addition of various headstand skills performed on the bar.

Dance Trapeze

Dance Trapeze is a low trapeze mounted to a single point. Dance Trapeze combines aspects of static trapeze, swinging trapeze, modern dance and many other disciplines to form a fairly unique art form.

Multiple Trapeze

Multiple Trapezes come in a number of shapes and sizes. The most common multiple trapeze is the Double Trapeze (available in side-by-side and over-under configurations). The Triple Trapeze (as well as larger multiples) are also commonly found. As the name implies, these apparatuses are designed for use by multiple simultaneous flyers, and allow for a variety of additional skills to be performed on the apparatus. The last multiple is known as the Shaped Trapeze. These are typically custom build apparatus designed for specific acts or shows, and can take virtually any shape imaginable.

French Trapeze

French Trapeze is a variation on Multiple trapeze where two performers perform combinations of static trapeze skills as well various partner lifting skills where one performer holds the other and manipulates them into a variety of positions and poses.

Hand Care for Aerialists

As an aerialist, you must take good care of your hands. The key points to good hand care are basic hand care (regular cleaning and moisturizing of the hands), care of calluses, and care of rips. We have also included some notes on swollen knuckles and toughening up the skin.

Basic Hand Care

Grip aids (such as Chalk or rosin) tend to dehydrate the skin. To help counter this effect make sure you wash your hands and wrists thoroughly with hot water and a good soap as soon as you complete your aerial workout. Use scrub brushes (such as a surgeon's scrub brush) to help get every bit of the "grip aid" off. While the skin is still soft and the pores still open, you should use a good quality hand lotion (such as Vaseline intensive care or Corn Huskers) to replenish the moisture in the skin.

Calluses

There is no way to prevent the formation of calluses on the hands of an aerialist. Thankfully, having that tough skin on the hands is a good thing, as long as you take care of it and remember that those calluses have to be flexible and supple.

You should always keep your calluses trimmed. Take a look in the foot care isle of your local pharmacy for a range of products designed to trim and care for calluses. Among the more commonly used callus care tools are pumice stones and callus razors.

Remember, dry, tough calluses will rip sooner than moist ones, so pay close attention to your basic hand care!

Caring for Rips

The most common cause of blisters and rips is over gripping of the apparatus. If your hand is in the proper place (with the bar at the base of the fingers, not centered in the palm) you will have less of the sliding and friction that causes most blisters and tears.

The second most common cause of blisters and rips is gripping the apparatus too tightly. remember that you don't have to choke the life out of the apparatus to stay on.

When you do get a rip, make sure you clean your hands carefully. Use a disinfectant, such as hydrogen peroxide or Betadine on the open wounds. You might want to follow that up with a moisturizing agent, such as Neosporin or other moisturizing antibiotic ointment. The key to healing a rip is to keep the new skin supple as it toughens up during the healing process (again, basic hand care).

Caring for Swollen Knuckles

Swollen knuckles are sometimes a problem when first learning vertical apparatus such as silks and Spanish web, as holding these vertical apparatus strains your fingers more than say holding a trapeze bar. As you build strength in your hands and fingers, this should go away naturally. Ice and ibuprofen applied / taken after a workout is also known to help. Make sure you discuss this issue with your aerial coach or instructor.

Toughening up the Skin

Aerialists need to develop tough skin. The following are common suggestions for toughening up the skin:

The sandpaper method. Rubbing your hands with sandpaper daily or every other day basis works well.

- Tincture of Benzoin. Available from any running supply house, this is known to toughen up skin, and it acts as an adhesive for keeping bandages on Cramer's "Tuff Skin" spray is also know to toughen up the skin (and provide extra grip). It is available from various medical supply companies.
- Urine. The acidity of the yellow stuff will help toughen up your hands. Diluted white vinegar. Same effect as the yellow stuff, but without the associated germs, smells and general yuck factor.

Better Hand Grips

Wrapping Metal apparatus

Metal aerial apparatus (trapeze bars, Lyra, etc) are generally wrapped with tape to help with grip. In general, you want to use a one-inch wide athletic tape (hockey tape and bicycle handlebar tape are also acceptable).

Start taping at one end of the bar, and continue all the way across to the other side of the bar, overlapping the tape by about a half inch each wrap (for a total of two layers of tape). Try to make your lines match up as closely as possible without overlapping (no third layers!)

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\ \  - First turn
\\ \ - Second turn
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\\\ \ - Third turn
\\\\ \ - Forth turn (etc.)
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When you finish, you should have a nice, smooth surface to grip your apparatus.

When rewrapping, make sure to remove all tape and glue residue before starting to rewrap the apparatus

Chalk, Rosin and other such products

A number of products are regularly suggested on the trapeze@yahoogroups.com mailing list for getting a better grip on various aerial apparatus. The following are the most common suggestions:

- Gymnastics Chalk. Available from various gymnastics supply houses, chalk helps the flyer to grip metal apparatus, as well as preventing the apparatus from becoming sticky or slippery.
- Spray chalk. Found under various brand names, spray chalk is a powdered chalk mixed with medical grade alcohol. It spreads evenly over your hands and dries very quickly
- Rosin. Theatrical Suppliers usually offer best value on Rosin, however it is not carried by all theatrical suppliers. When you can find it, it usually comes in big chunks in big bags. Dance supply shops will also generally carry it, however it is usually more expensive than it would be at a theatrical supply house. Last but not least you can often find it in Music Shops, as string players use it. (hint: You'll want double-bass size)
- Spray Rosin. Spray Rosin is a liquid mixture of rosin and alcohol. Spray Rosin is more commonly used with aerial fabrics (aka silks, tissue)
- Liquid Rosin mixture
- Hair Spray is an old-timers trick for better grip
- Anti-Slip Spray. Cramer's "Tuff Skin" and "Firm Grip" sprays are often recommended. Both of these are available from various medical supply companies.

Selecting Aerial Apparatus

Choosing the right equipment for you and your needs / situation can be a tough thing. The following notes should be of some assistance to those that are in the market for aerial apparatus.

Selecting an Aerial Hoop

Q. How do I size my aerial hoop?

A. Properly sizing an aerial hoop or Lyra can be a difficult thing to do. So much of it comes down to individual flexibility, personal preference, and what you are comfortable with. The following is a very general guide. We highly recommend speaking with your vendor about what size Lyra you need.

- 34" Lyra is generally best for a performer under 5'6"

- 35" Lyra is generally best for a performer under 5'8"
- 36" Lyra is generally best for a performer under 6'

Q. One Tab or Two?

A. Depends on how you are going to use it, what effect you are after and what you are comfortable with. The following is list of just a few things you might want to take into account when choosing your aerial hoop:

- If you do not want your aerial hoop to spin, you want a double tab.
- If you want a trapeze like swing, you want a double tab
- If you want spin, you can use either a single or a double tab (see rigging section)
- If you want to use your aerial hoop like a dance trapeze, you want a single tab
- If you want to swing along more than one axis, you want a single tab

Q. Do I want a crossbar on my aerial hoop?

A. Again, the answer to this depends on how you are going to use it, what effect you are after and what you are comfortable with. If you do not make use of the bar, or if the bar gets in your way, then you don't want one. If you use the bar, or if it is part of the effect your after, then you obviously do want your aerial hoop to have a crossbar.

Q. Should I have hand/foot loops on my aerial hoop?

A. Again, the answer to this depends on how you are going to use it, what effect you are after and what you are comfortable with. If you use the hand/foot loop, or if it is part of the effect your after, then you obviously do want your aerial hoop to have the loop.

In the case of a hand/foot loop, when in doubt it is a good idea to get the loop. They are inexpensive enough that even if you never use it, its not a big loss. On the flip side, it can be torture if you have to wait several weeks for one to come in so that you can do that skill that requiers it, or that you don't yet have the handstrength to do without it.

Selecting a Trapeze Bar

Q. What kind of trapeze bar do I need?

A. Choosing the Proper trapeze bar can be a difficult thing to do. So much of it comes down to personal preference, what you are comfortable with, and what you are doing. We highly recommend speaking with your vendor about what trapeze bar is right for you.

Some points to think about:

- Padded or unpadded?

- Do you want the bar to extend past the ropes, or not?
- Will you be doing rope work above the bar?
    - If so, think about the kind of rope you want to work with.
- Single or multiple?

Selecting Aerial Silks

Q. What do I need to know about choosing aerial silks fabrics?

A. When choosing fabrics for Aerial Silks, you want to think about the stretch, width and length of the fabric you need.

Low stretch fabrics are easier to climb than medium stretch fabrics, but they are not as soft for big drops. Medium stretch fabrics are nice for drops, but are a little harder for beginners to climb. High stretch fabrics are even nicer for drops, but virtually impossible for beginners to climb.

Aerial Fabrics come in a variety of widths. A 60" width is generally recommended for children, where as a larger width (75", 90" or 108" widths) are generally recommended for teens and adults. At widths of 75" and above, the choice mostly comes down to a personal or artistic preference.

Aerial fabrics are generally cut to length depending on the height you are mounting it to. For beginners, you want the fabric to come down past the ground. For intermediate users and above, you want the fabrics to come down to the ground.

Inspecting and Maintaining Aerial Apparatus

What follows are very general guidelines for inspecting and maintaining various pieces of aerial apparatus. These guidelines are NOT a replacement for the specific maintenance and care instructions that came with your equipment.

Metal Apparatus (Lyra, Trapeze Bars, etc)

Most metal apparatus, including Lyras and Trapeze Bars, are solid pieces of equipment that should last a very long time if properly maintained. While the exact inspection schedule will depend on factors such as the amount of use a particular apparatus gets and the manufacturers instructions, as a general rule of thumb a cursory inspections should be made every time the apparatus is put up, or for fixed installations on about a weekly basis and a full inspection done on at least a yearly basis.

Cursory inspection

1. Remove the apparatus from the rigging
2. Check the body of the apparatus for any signs of rust according to the manufactures instructions.
    - If you find rust on the body of the apparatus, you should rub the area with steel wool to remove the rust.

- If you find rust over a large portion of the unit, or going into an area covered by padding/fabric, perform a full inspection on the unit.

3. Check the welds according to the manufactures instructions.
    - Look for any surface flaws of imperfections in the weld.
    - Using hand pressure, try and pull and twist the weld.
    - If the welded joint fails this inspection, immediately take the unit out of service and consult the manufacturer.
4. Inspect any attached ropes or cables according to the manufactures instructions.
    - If the ropes or cables show any imperfections or signs of excess wear, perform a full inspection on the unit
5. Check the rigging components for signs of excess wear
    - If any rigging component shows signs of excess wear, replace the component

Full Inspection

1. Remove the apparatus from the rigging
2. Disassemble the unit according to the manufactures instructions
    - Remove any grip aids (tape, etc) from the unit
    - Remove any fabric coverings and padding from the unit per manufacturers instructions
    - Remove and rigging components (shackles, etc) and ropes / wires from the unit
3. Clean the unit according to the manufactures instructions
    - Most metal items can be cleaned using rubbing alcohol and rags
    - Make sure to get all grip aid residue off
4. Check the body of the apparatus for any signs of rust according to the manufactures instructions
    - If you find rust on the apparatus, you should rub the area with steel wool to remove the rust
5. Check the welds according to the manufactures instructions
    - Look for any surface flaws of imperfections in the weld
    - Using hand pressure, try and pull and twist the weld.
    - If the welded joint fails this inspection, immediately take the unit out of service and consult the manufacturer
6. Inspect any attached ropes or cables according to the manufactures instructions.
    - If the ropes or cables show any imperfections or signs of excess wear, replace the ropes or cables
7. Inspect any rigging components according to the manufactures instructions.

- If the rigging components show any imperfections or signs of excess wear, replace the components

8. Inspect the padding and fabric covers according to the manufactures instructions.
    - If the padding or fabric show any signs of excess wear, replace the padding and/or fabric
9. Check the rigging components for signs of excess wear
    - If any rigging component shows signs of excess wear, replace the component
10. Reassemble the unit according to the manufactures instructions.
    - This is generally done in the reverse order of how you disassembled it
11. Re-tape the unit

Rope based Apparatus (Spanish Web, Corde Lisse, Cloud Swing)

Most Rope based apparatus, including Spanish Web, Corde Lisse and Cloud Swings, are durable, long lasting pieces of equipment when properly cared for and maintained. In general, and unless otherwise specified by the manufacturer, a cursory inspections should be made every time the apparatus is put up, or for fixed installations on about a weekly basis.

Cursory inspection

1. Remove the apparatus from the rigging
2. Check the loops of the apparatus according to the manufactures instructions.
    - If the loops show any signs of imperfections or excess wear, take the unit out of service and consult the manufacturer.
3. Check the body or sheath of the rope according to the manufactures instructions.
    - Look for any surface flaws, imperfections or excess wear in the rope or sheath.
    - If present, check the seam of the sheath for excess wear, tears or loose threads
    - If the sheath/rope fails this inspection, immediately take the unit out of service and consult the manufacturer.
4. Inspect any attached ropes or cables according to the manufactures instructions.
    - If the ropes or cables show any imperfections or signs of excess wear, perform a full inspection on the unit
5. Check the rigging components for signs of excess wear
    - If any rigging component shows signs of excess wear, replace the component.

Note: Rope based apparatus should be loosely coiled and stored according to the manufacturers directions when not in use

Aerial Fabric needs to be replaced as they get worn over time. In general, and unless otherwise specified by the manufacturer, a cursory inspections should be made every time the apparatus is put up, or for fixed installations on about a weekly basis and a full inspection done on at least a yearly basis. Remember that using a slip-knot, or using the fabric as a sling is harder on the material, and you should adjust your inspection schedule accordingly.

Cursory inspection

1. Remove the apparatus from the rigging
2. Remove the fabric from the Fabric from the Fabric Hanger or Rescue-8
3. Check the body of the fabric according to the manufactures instructions.
   - Check for tears in the fabric or signs of excess wear
   - If the fabric has tears in it, or shows other signs of excess wear, replace the aerial fabric
4. Smell the fabric
   - If the fabric smells mildly, apply Fabreze or another spray on fabric odor control product to the material to control the smell
   - If the odor can not be adequately controlled with a spray on fabric odor control product, perform a full inspection
5. Check the rigging components for signs of excess wear
   - If any rigging component shows signs of excess wear, replace the component

Full inspection

1. Remove the apparatus from the rigging
2. Remove the fabric from the Fabric from the Fabric Hanger or Rescue-8
3. Check the body of the fabric according to the manufactures instructions.
   - Check for tears in the fabric or signs of excess wear
   - If the fabric has tears in it, or shows other signs of excess wear, replace the aerial fabric
4. Wash the fabric according to the manufactures instructions.
   - Use a front-loading machine if possible
   - Use detergent only (do not use softeners, bleach, etc)
   - Allow the material to hang dry - DO NOT use a dryer
5. Check the rigging components for signs of excess wear
   - If any rigging component shows signs of excess wear, replace the component

6. Recheck the body of the fabric according to the manufactures instructions.
    - Check for tears in the fabric or signs of excess wear
    - If the fabric has tears in it, or shows other signs of excess wear, replace the aerial fabric

Rigging

General Rigging Questions and Theory

Q. Will reading FAQ make me a qualified rigger?

A. No!! If you even think it will, stop reading this FAQ now before you kill someone!

Q. What process does a rigger use to figure out how to rig something?

A. How an individual rigger does this varies from rigger to rigger, however most professional riggers use a process known as "Weak Link Analysis" (WLA for short) whenever they design, build or rig any sort of aerial rigging. WLA is the process of systematically examining each and every component of a rigging setup to find the weakest link. Once identified, the rigging is designed and built with that weakest link in mind, and with the desired safety factor.

While this sounds like a simple process, it is not. Many factors can make rigging even simple effects a very complex task. Riggers will often have to combine components that are designed, measured and tested in the SI system (metric system), with components that are designed, measured and tested in English units. Some components will have a working load limit and an ultimate load limit. Some will only include a working load limit, and other only a mean breaking strength (MBS). Then you might have to get into the reductions required by manufacturer specifications for angular loading, additive loads, bending around sheaves, as well as termination efficiency. All of this adds up to a very complicated process.

Q. What is a "Shock Load"?

A. A shock load is defined as the sudden and rapid application of force placed on the rigging. In aerial arts, shock loads are fairly common, and can be caused by performing skills such as drops.

The formula for computing a shock load is: Shock Load = [(W x Df) / Ds] + W, where Df is the freefall distance, Ds is the stopping distance, and W is the weight of the falling object.

For example, lets say we have a a 220 pound (~0.98kN) silks artist that does a 9 foot free fall and then suddenly stops over a 3 foot distance. Applying our formula, we get:

Shock Load=[(W x Df)/Ds]+W

880lbs=[(220lbs x 9 feet)/3 feet]+220lbs

As you can see, this gives us a shock load of 880 (~3.91kN) of force on the rigging (at about 4g's)

Q. I have been told that I should have at least a 10:1 safety ratio. What does that mean? A. There are two very different answers to this question. A safety ratio can be calculated using either

the equipments normal load (more common), or its potential shock load (less common). When using a normal load, the safety ratio is the ratio between the normal expected load of the equipment, and the breaking point of the weakest point of the rigging. When using the shock load, the safety ratio is the ratio between the largest expected shock load a rig is expected to take, and the breaking point of the weakest point of the rigging. To put this in perspective, we will take a brief look at rigging aerial silks.

As discussed in the last question on shock load, in theory, a 220 pound person (~0.98kN) could put 880 pounds (~3.91kN) of force on the rigging. Various load testing has shown aerial fabric to have a breaking load of about 1.1 tons (2,200 pounds or 9.78kN). Our rescue-8 has a MBS rating of 10,000 pounds (44.48kN). Our carabineers are MBS rated at 72kN (~16,000 pounds) , and our swivel MBS rated at 36kN (~8,000 pounds). We will assume an aerial mount point with a MBS rating of 2 tons (4,000 pounds)

Component	kN	Pounds	Safety ratio (normal)	Safety Ratio (shock load)
Mount point	17.79kN	4,000lbs	18:1	4.5:1
Carabineers	72.00kN	16,000lbs	72:1	18:1
Swivel	36.00kN	8,000lbs	36:1	9:1
Carabineers	72.00kN	16,000lbs	72:1	18:1
Rescue 8	44.48kN	10,000lbs	45:1	11.3:1
Fabrics	9.78kN	2,200lbs	10:1	2.5:1

As you can see from the chart above, the weakest link here is the fabric itself, with only a 10:1 safety ratio, followed by the mount point with an 18:1 ratio. This means that the normal safety ratio for our aerial silks is 10:1, with a weight limit of 220 pounds. Our shock load safety ratio for our silks is 2.5:1, with a weight limit of 220 pounds.

For a 220 (~0.98kN) pound aerialist to do something on a silks setup that would cause them to produce 2,200lbs (9.78kN) of force on the fabrics, that performer would experience the equivalent of 10g's of force - more than enough to cause blackout and possibly internal injuries before the equipment would give away.

For a 140 pound (~0.62kN) person to produce the same 2,200lbs (9.78kN) of force on the fabrics, that performer would experience the equivalent of 15.66g's of force - more than a fighter pilot experiences during an ejection - before reaching the breaking point on the fabric. It should be noted that the military will only allow pilot's to experience such eject force twice before grounding them permanently.

In general, you want at least:

Usage	**Safety ratio (normal)**
General Public	10:1

Professional Aerialist	8:1
Equipment only	3:1

The best advice is to make sure that you know and understand what safety factor your rigging is designed and built with, and make sure that you understand what the week points in your rigging are. Whenever in doubt, check with your own qualified rigger!

More on Weights and Measures

One of the difficulties with rigging circus apparatus is that we end up using rigging components from many different industries, almost none actually designed for how we use them. Some equipment uses the S.I. system, where weight is often expressed in kilograms (a mass), newtons (a force) and kilonewtons (a force with mass) . Other use the English system, where weight is expressed in pounds (a force with mass).

When dealing with rigging components, it is often helpful to convert everything to use one numbering system or the other. If you are currently connected to the net, a convenient web conversion utility is available online at: http://www.pitt.edu/~rsup/forceconv.html

If you are not currently connected to the net, or if you want to know how to make the conversions yourself, the following charts may help you make the conversions (or just confuse you further):

Pounds, Newtons and Kilograms				
To Convert From	*Multiply by*	*to get / To Convert from*	*multiply by*	*to get*
pounds lb	4.44822	Newton, N	0.224809	lb
lb	0.453592	kg	2.20462	lb
N	0.101972	kg	9.80665	N
lb	0.0310	slug (lb-s2/ft)	32.2	lb
Weight Density (force/volume); including kilogram force				
To Convert From	*Multiply by*	*to get / To Convert from*	*multiply by*	*to get*
lb / ft3	0.157087	kilonewtons per kN/m3	6.36590	lb / ft3
lb / in3	271.447	kN/m3	0.00368	lb / in3
lb / in3	0.000578703	lb / ft3	1728	lb / in3
N / m3	0.101972	kg / m3	9.80665	N / m3
kN / m3	101.972	kg / m3	0.0090665	kN / m3
lb / ft3	16.0185	kg / m3	0.0624279	lb / ft3
Mass Density (mass/volume)				
slug / ft3	515.379	kg / m3	0.0019403	slug / ft3

Rigging Components

Note: *For purposes of this FAQ, the term "Rigging Components" is defined as the commercially available connecting devices, tension devices, pulleys, swivels, cables, ropes, ascenders, decsenders and other related parts. When you get deeper into aerial rigging, you will find this term has a much wider meaning than is used in this FAQ. We may eventually expand this to include this wider definition, however for the moment that is outside the scope of this FAQ.*

The world of rigging is vast, and constantly changing. For specific product recommendations, or answers to your specific needs, you should consult your rigging vendor or your own qualified rigger.

Choice in Materials

Q. Should I use Aluminum or steel components?

A. The basic choices for most rigging components does come down to either Aluminum or Steel. This is a debate that rages on and off again. The general consensus among riggers seems to be that when ever possible, use steel.

This doesn't mean that aluminum is never used - quite the contrary, it is used fairly often - but it does mean that when you use aluminum, you do so knowingly and only when it really is the best tool for the job.

Q. Why is steel preferred over aluminum?

A. It all comes down to the ductility of the material. A steel component will deform before failing, while aluminum is far less forgiving and will fail with little warning.

Q. What is a retirement plan?

A. With any metal components, you should have and follow a retirement plan for each piece of equipment that is appropriate for the equipment, and its usage. When in doubt, contact a professional rigger.

Choice of Components

Q. What is a connector?

A. Connectors are pieces of equipment used to connect one piece of rigging to another. The most common connectors used in rigging are Carabiner and Shackles. Carabineers are a metal loop with a sprung or screwed gate. These devices can quickly and reversibly connect components in rigging, such as ropes to aerial apparatus. Shackles are pieces of metal, closed with a pin across the end. These devices are used for securing parts of the rigging to each other. Shackles come in many shapes and sizes, including D-shackles, Bow-shackles, Web-shackles, and many other variations. Shackles are generally used for more permanent rigging of components.

Q. What are Tension Devices?

A. Tension Devices are used to apply and hold tension to rigging. The most common tension devices are Turnbuckles, Come-alongs and Ratchet Straps. Turnbuckles are perhaps the most common tension device used in aerial rigging. A turnbuckle normally consists of two threaded eyelets that are screwed into each end of a small metal loop. One eyelet has a left-hand thread and the other has a right-hand thread. This allows the tension to be adjusted by rotating the loop, which causes both eyelets to be screwed in (or out), raising or lowering the tension. Turnbuckles are most commonly used in applications which require a great deal of tension. Come-a-longs are a common tension device used in aerial rigging. A come-a-long normally consists of a ratchet wheel attached to a drum coiled with aircraft cable. When the ratchet is turned, tension is applied to the aircraft cable. Come-a-longs are commonly used in applications which require a great deal of tension. Ratchet Straps are another common tension device used in aerial rigging. Ratchet Straps consist of a small ratchet wheel attached to a small, slotted drum. A nylon strap is pulled through the slots in the drum until it is tight. The ratchet is then turned to apply additional tension on the strap. Ratchet straps are fast and easy to use, however the generally do not apply as much tension as Come-a-longs or turnbuckles.

Q. What are Swivels?

A. Swivels are rotating fittings that is used to keep a line from tangling, or used to allow a section of the rigging to spin freely. There are a great many types of swivels in use.

Questions About Aerial Rigs and Mount Points

The construction of aerial rigs and mount points is best left to professional riggers and engineers. The following questions and answers may help you, or just further confuse you depending on your situation.

Q. How much weight should a mount point be able to take?

A. You should consult a professional rigger to determine what your specific needs are for an aerial mount point, however the general consensus seems to be that an aerial mount point should be rated for a breaking load of around 1 - 2 tons. Again, this is very dependant on your individual situation and you should consult your own qualified rigger for specific answers.

Q. What can I use as an aerial mount point? A. The short answer is that you can use anything your qualified rigger tells you that you can use. The following should give you some very general ideas of things within your space to look at and think about before you call your rigger, or more specifically, things you should ask them about.

Freestanding Aerial Rigs. Freestanding aerial rigs are an excellent way of getting a mount point where you otherwise wouldn't have one. For a review of the current (2006) state of commercially available freestanding aerial rigs, read the following article from CircusNews.com reviewing the various rigs available:

http://www.circusnews.com/modules.php?name=News&file=article&sid=2452

Wooden beams. Large wooden beams, such as those commonly found as structural members of mill buildings and barns often make excellent mount points. Depending on the situation, your rigger may choose to attach eyebolts to the beam, use a span set, anchor strap or other device to wrap around the beam or use another method to attach a mount point to the beam.

Steel I beams. Steel I beams, such as those commonly found as structural members of many commercial buildings often make excellent mount points. Depending on the situation, your rigger may choose to attach eyebolts to the beam, use a span set, anchor strap or other device to wrap around the beam, attach a beam clamp to the beam, or use another method to attach a mount point to the beam.

Q. OK, I need a rigger. What is the going rate for professional riggers? A. The rates vary depending on a number of factors, however at the time of this writing (2006) a rough ballpark is $30 - $75 an hour, plus any costs involved in getting them to the job and actually doing the job.

Questions About Rigging Specific Apparatus

The following is presented for your general information only. Always consult and follow the manufacturers directions for specific advice on the use and rigging of your equipment. And remember, if you have questions about your specific situation, consult a qualified rigger.

Q. What is the minimum ceiling height for rigging aerials? A. That depends on what you want to accomplish. There are people who successfully manage to do high level static trapeze, Lira, Spanish web (etc.) in facilities with only a 12 foot ceiling high.

First, you need to decide how high you want the apparatus to be. At this height, do you have enough room above and below the apparatus to do what you need to do?

Many aerial arts do not have to be high off the ground to be effective or wonderful to watch or participate in as a physical activity.

Q. I have a question about rigging something that is not in this FAQ. Who can I call?

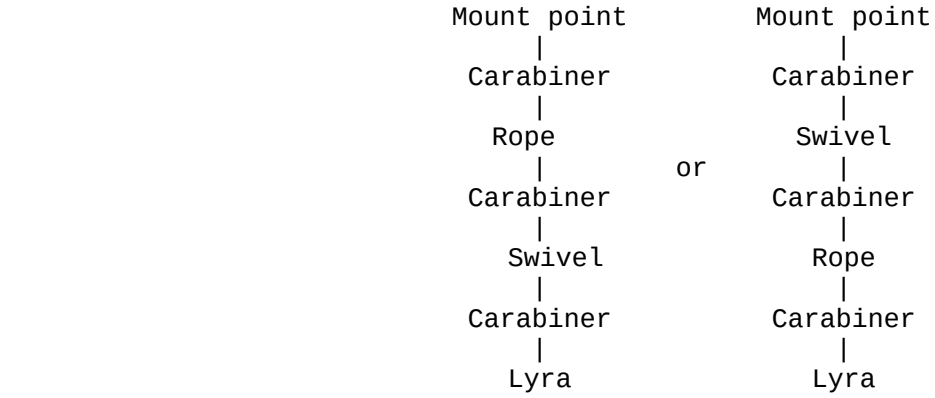
A. Call your own qualified rigging expert with any questions you have. This FAQ is not a replacement for a qualified expert!

Aerial Hoop / Lyra

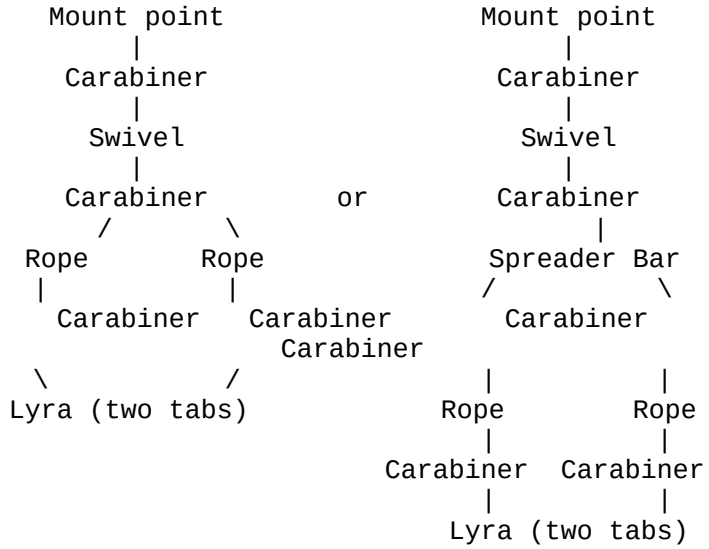
Q. What is the basic method for rigging an Aerial Hoop / Lyra?

A. The following Aerial Hoop basic rigging diagrams should help:

Rigging Diagram - Single Tab



Rigging Diagram - Double Tab



Aerial Fabrics

Q. How do I attach my silks to my rescue-8?

A. For detailed instructions on how to attach your silks to a Rescue-8, consult the instructions that came with your ailks. For your conveniance, here are the instructions from different vendors:

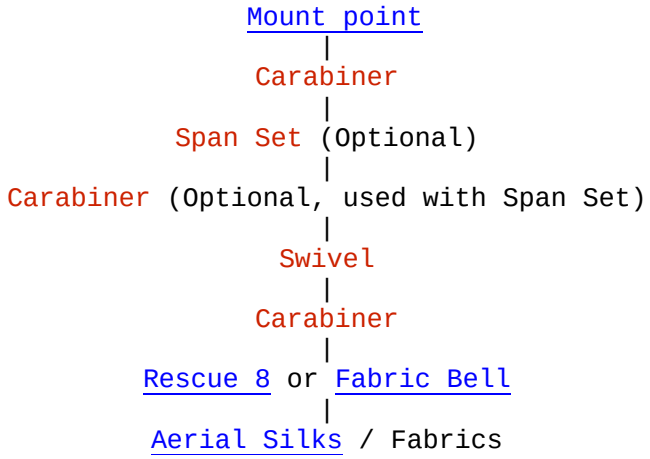
- Aerial Aircats Instructions (PDF)

- Nimble Arts Instructions (PDF)

Q. What is the basic method for rigging Aerial Fabrics?

A. The following Aerial Silks basic rigging diagrams should help:

Rigging Diagram

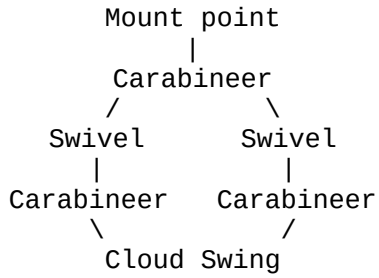


Cloud Swing

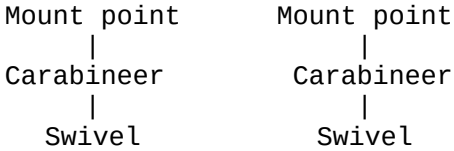
Q. What is the basic method for rigging a Cloud Swing?

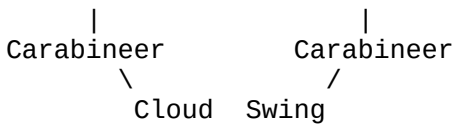
A. A Cloud Swing can be rigged using a single mount point, or (more commonly) two mount points. The following Cloud Swing basic rigging diagrams should help:

Rigging Diagram - Single Mount Point



Rigging Diagram - Double Mount Points



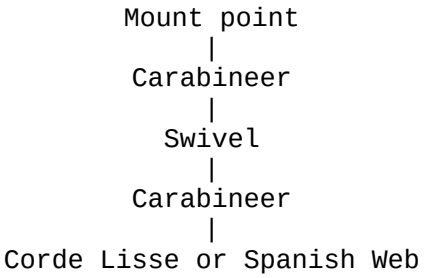


Corde Lisse / Spanish Web

Q. What is the basic method for rigging a Corde Lisse / Spanish Web

A. Rigging a Corde Lisse and a Spanish Web is virtually identical. The following rigging diagram may help:

Rigging Diagram

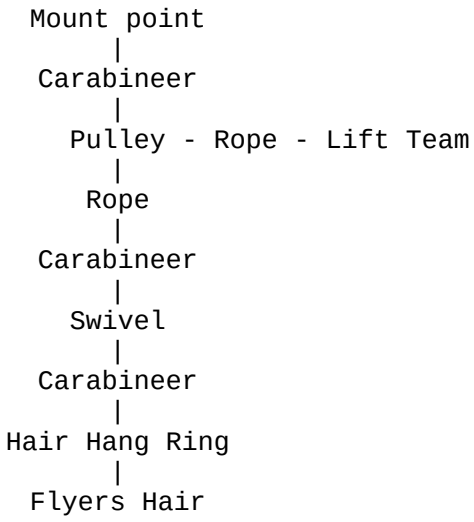


Hair Hang

Q. What is the basic method for rigging a Hair Hang?

A. There are many ways a hair hang can be rigged. The following Hair Hang basic rigging diagram should help:

Hair Hang on a Pulley Diagram

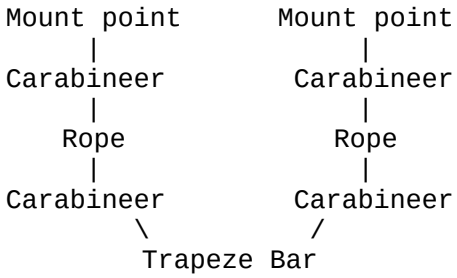


Trapeze

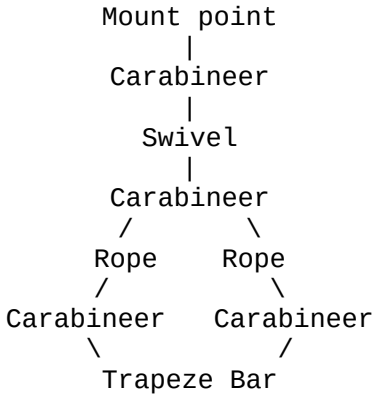
Q. What is the basic method for rigging a Trapeze?

A. There are many ways a trapeze can be rigged. The following Trapeze basic rigging diagrams should help:

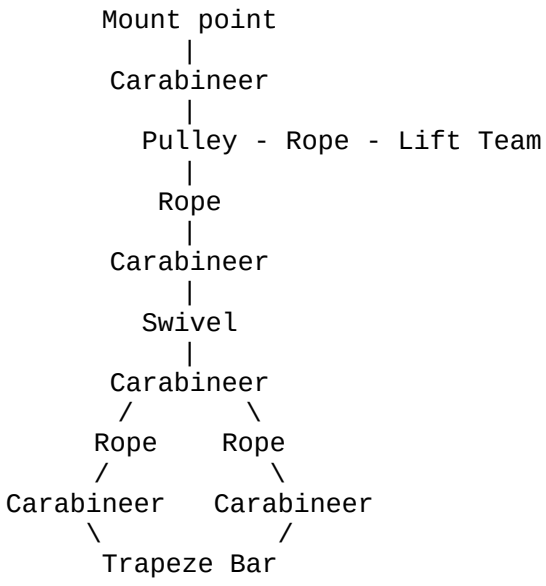
Static or Swinging Trapeze Diagram



Dance Trapeze Diagram



Dance Trapeze on a Pulley Diagram



There are no hard and fast answers to the liability and insurance questions. Exactly what your liability is and how you control that risk will depend in large part on where you are, and what you are doing. Consult both your lawyer and your insurance agent with specific questions.

Q. What is a Risk Management Plan, and why do I need one?

A. A Risk Management plan is a written plan detailing how you plan to mitigate the known and unknown risks associated with your program. A good risk management plan includes all of the following

- List of skills taught or performed, along with a leveling and advancement system. For students of Simply Circus, this is contained in your *Circus Skills Syllabus and Self Training Guide*
- Description of the skills you are performing, including the safety precautions taken for each skill. For students of Simply Circus, this is included in the appropriate Simply Circus textbook, or the *Aerial Circus Training and Safety Manual.*
- Safety and emergency rules, policies and procedures, including how and when to access EMS. For the students of Simply Circus, this is included in the appropriate the appropriate Simply Circus textbook, and facility guide.

For a sample risk management plan, see:

http://www.tarook.com/circus/index.htm

Q. What kind of insurance do I need?

A. This is perhaps one of the most commonly asked questions in regards to aerial arts and insurance. The short answer is that you need to sit down with your insurance company to figure out exactly what coverage you need to have for what you are doing.

The following is a US centric listing of the various types of insurance you want to look at:

Name	Description	Who is this for?
General Liability Insurance	General Liability insurance can prevent a legal suit from turning into a financial disaster by providing financial protection in case your business is ever sued or held legally responsible for some injury or damage. General Liability pays losses arising from real or alleged bodily injury, property damage, or personal injury on your business premises or arising from your operations.	All
Workers' Compensation insurance	Workers' Comp policies are generally two part policies. The first part covers the cost of medical expenses and disability payments if employees are injured or exposed to illness-causing substances while on the job. The second part provides businesses with liability protection in case they are sued for damages arising from employment-related accidents or diseases.	Anyone with employees
Umbrella Liability insurance	Umbrella Liability insurance provides extra liability coverage for your general liability insurance. Once the limits on an underlying policy are exhausted, the umbrella comes into play.	All
Professional Liability Insurance	Professional liability insurance, also known as "errors and omissions" is coverage that protects a business against malpractice, errors, negligence and omissions.	Performers, schools
Product Liability Insurance	Product Liability Insurance is insurance for businesses selling or manufacturing products. This type of coverage protects the business in the event of a person becoming injured as a result of using the product.	Stores and manufacturers
Secondary Injury Insurance	Also known as "Accidental Death and Accident Medical Insurance", this type of insurance coverage is secondary to other insurance, such as group medical and Medicare. Secondary injury policies generally require that claims first be submitted to all other insurance companies before claims will be processed, however they will generally also pay out immediately if no other coverage is available.	Schools

Aerial Arts and Rigging Resources

Mailing Lists

- Yahoo Trapeze Group. Mailing List for Flying Trapeze, Swinging Trapeze, Fixed Trapeze, Double Trapeze, Washington Trapeze, Spanish Web, Aerial Hoop, Vertical Rope, Tissu,.... For all those who are interested in Circus Aerial Arts (from beginners to

professionals; artists, coaches, school owners, rig designers and riggers,...).

- Yahoo Aerialriggers Group. This list offers riggers and aerialists an opportunity to network and discuss issues in the circus/aerialist community.

Websites

- Simply Circus Aerial Arts Tutorials, FAQ's & Handbooks
- Flying Trapeze Resource Page
- Physics of the Circus
- Physics of the Flying Trapeze

Books on Aerial Arts and Rigging

- Dreams of the Solo Trapeze by Mark Schreiber
- Learning to Fly; Trapeze reflections on Fear, Trust and the Joy of Letting Go by Sam Keen
- The ABC's of Trapeze by Tony Steele
- A Reckless Era of Aerial Performance, The Evolution of Trapeze by Steve Gossard
- THE MODERN GYMNAST: Being Practical Instructions on the Horizontal Bar, Parallel Bars, Vaulting Horse, Flying Trapeze, Etc. Etc. Etc.. by Spencer, Charles.
- Circus in Schools Handbook by Sharon McCutcheon
- The Aerial Circus Training and Safety Manual by Carrie Heller
- Circus Techniques by Hovey Burgess
- Also see the Rigging Book List from the Training and Inspection Resource Center

Videos on Aerial Arts and Rigging

- Trapeze the Movie (1956) Starring: Burt Lancaster, Tony Curtis
- Secrets of the Circus Volume # 3 (Corde Lisse, Static and Dynamic Tricks on a rope. Spanish Web, Spinning skills on a rope)
- Secrets of the Circus Volume # 3 (Trapeze, stationary trapeze tricks. Cradle, 2 person cradle trapeze)
- Also see the rigging video list from the Training and Inspection Resource Center

Software

- LD Calculator Lite (free software for MSWindows)
- RigMaster (Excel file from AMT Flyware)
- Rigging Data (Excel file, from The Detroit Stage Employees Union, IATSE local 38)
- Aerial Rigging (Excel File, helps calculate rigging loads and helps find the weakest link in common aerial rigging. Experimental, alpha grade software - not for production use)

Equipment Vendors

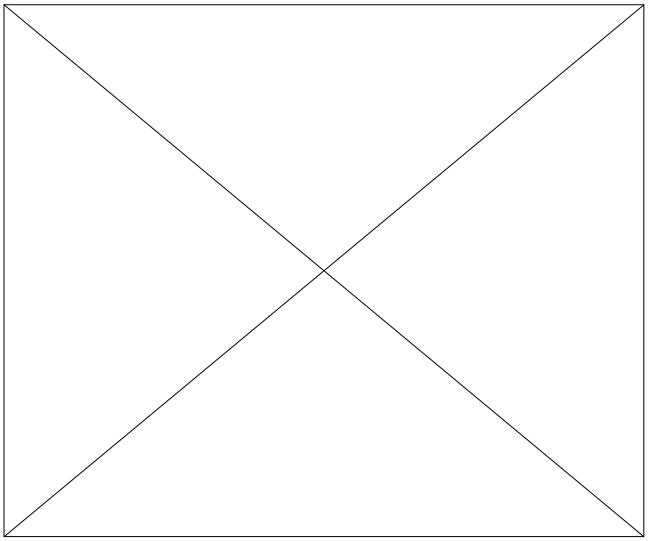
Name & Contact Information	Items sold and/or supported
Aircat Aerial Arts Cathy Gauch, Director Aircat Aerial Arts 2525 Arapahoe Suite E4 PMB 336 Boulder, CO 80302 1-888-522-7631 http://www.aircat.net	Aerial Silks
Barry Cordage Ltd. 6110 des Grandes-Prairies Montreal (Quebec), Canada H1P 1A2 514-328-3888 1-800-305-CORD (2673) http://www.barry.ca	Ropes, Spanish Web, Corde Lisse, Cloud Swing, Trapeze bars, Straps, Lyra, Harnesses and Spotting Belts, Rigging components, handstand tables, low-wire.

mduguay@barry.ca	
Bobby's Bigtop 9380 Maple Street Elberta, AL 36530 (251) 961-7885 www.BobbysBigTop.com	Trapeze rigs, Single Trapeze with Cotton Rope, Single Trapeze with Double Braided Nylon Rope, Double Single Trapeze, Double Trapeze with Cotton Rope, Triple Trapeze, Spanish Web, Cradle, Safety Belts, Twisting Belts, Lyra
Custom Built Equipment, Inc. 467 W Krepps Rd Xenia, Ohio USA 45385-9350 (937) 372-7581 http://www.cbe-circus.com cbei@cbe-circus.com	Spanish Webs, Cloud Swings, Silks, Lyra, Roman Rings, Straps, Single Trap Bar (round end), Double Trap Bar, Triple Trap Bar, Fly Bar with cables, Catcher Trap Bar without Padding and with cables Safety Belt, rigging components
Jackie Tan jtcircus@yahoo.com	Stock and custom Lyra, as well as other equipment
Ludwig Goppenhammer 1808 19th St. Golden, Co 80401 ludwig@damnhot.com http://www.damnhot.com	Freestanding Aerial Rigs
Nimble Arts 76 Cotton Mill Hill #300 Brattleboro, VT 05301 (802) 254-9780 actorbat@sover.net http://www.nimblearts.org	Rigging Components, Trapeze Bars, Aerial Silks
Trapeze Rigging.com http://www.trapezerigging.com trapezerigging@gmail.com	Trapeze rigs, Trapeze bars, Rigging components, Safety Belts, low-wires and more
Unicycle Voltige 3 impasse Jules Dalou - BP 172 91006 Evry Cedex France Tel: (33) 01 60 77 37 36 Fax: (33) 01 60 78 09 88 http://www.unicycle.fr contact@unicycle.fr	Trapeze rigs, Trapeze bars, Rigging components, Spanish Web, Cloud Swings, Low-wire, Lyra
Warren Bacon Rig2@aol.com	Warren makes a wide variety of aerial apparatus, as well as being a top notch rigger.

http://aerialhoopla.blogspot.com/2013/07/accidents-happen.html

Monday, July 1, 2013

Accidents happen



I was shocked to hear in the news today about the tragic accident at the Las Vegas Cirque du Soleil performance of KA. During the final battlefield scene one of the artists' wire snapped and she fell 50 feet (15 meters) down to her death. Cirque du Soleil is definitely the biggest and most famous in the world when it comes to acrobatic acts. I absolutely love what they do and was actually going to see their touring show in Poland for the first time in August this year. While I feel terribly sorry for the cast and crew of Cirque du Soleil as well as for the artist's family this horrific accident got me thinking about aerial safety in general.

Since I'm not a professional aerialist and I don't perform any death defying tricks, I never go higher than 1.5-2 meters above the ground and generally try to be safe and cautious when I practice. Still, I managed to fall off my hoop once and off my pole once. Nothing really happened to me but it made me realize how dangerous aerial arts really are. One moment of carelessness can result in a fall and injury, or worse. Of course falling is not the major cause of injuries but you still have to remember that you are suspended in the air and you cannot lose your concentration, not even for a second. You need to be cautious and present all the time. I don't mean to scare anyone but we need to realize that every time we go upside down and our head is over our hips it is a potentially dangerous situation as falling on your head could possibly result in breaking your neck. Of course the said accident at Cirque du Soleil was not the aerialist's fault, it was most likely faulty rigging or the equipment failure. It is very unfortunate but I guess it's like jumping with a parachute - one in a hundred does not open. It makes you also realize that this could happen to anyone.

Aerial safety is a topic which cannot be ignored. I still see many people being really careless and irresponsible both on the pole and on the hoop. For example jumping into tricks or doing things they

are not physically prepared for and hurting themselves, doing tricks without a proper warm-up etc. And it's not just the students, some instructors can teach in a dangerous way as well. I've even seen one studio teaching aerial hoop and silks without crush mats! I think the students who agree to practice without a crush mat are really stupid because this is just an accident waiting to happen. My close friend fell of her silks once. She just lost her balance in a standing position and flipped over. She said that it happened so fast that she didn't even realize when she fell flat on her face. The result was some bruises, swelling and a permanently deviated septum. If it hadn't been for the two crush mats she was using it could have been a concussion and at least a broken nose. Luckily, this accident did not discourage her from doing silks at all and she soon came back to her training.

To sum up: have respect for the aerial arts, check your equipment, use a crush mat, be aware, be safe, have fun and aerial on!

Posted by Aerial Hoopla at 11:36 PM