

Adaptive Archery



INSTRUCTOR'S MANUAL

Sponsored by



PRIMARY AUTHORS

Randi Smith, *Paralympic Head Coach, USA Archery*

M.J. Rogers, *Paralympic Coaching Staff*

Mary Emmons, *Director of Program Development, USA Archery*

Larry Wise, M. ED., *USA Archery Level 4-NTS Coach and NFAA Master Coach*

Josahan Jaime-Santacruz, *Program Director, NFAA Easton Yankton Archery Center*

REVIEWERS

USA Archery

Gregg J Baumgarten, National Chairman, Adaptive Sports USA

Stephanie Miller, Program Manager, City of Glendale, AZ

COPY EDITOR

Disabled Sports USA

ACKNOWLEDGMENTS

Disabled Sports USA extends special thanks to USA Archery for their support of the Adaptive Archery Manual

This program was funded by a grant from the United States Department of Veterans Affairs. The opinions, findings and conclusions stated herein are those of the author(s) and do not necessarily reflect those of the United States Department of Veterans Affairs.



©2016 Disabled Sports USA. All Rights Reserved. No copying or other reproduction permitted.



VA | U.S. Department of Veterans Affairs

TABLE OF CONTENTS

Preface

Introduction to Adaptive Archery	5
Chapter 1: Classroom Management.....	6-8
Chapter 2: Adaptations for Equipment and Accessories	9-13
Chapter 3: Archer Evaluation	14-15
Chapter 4: Evaluating the Shot Process.....	16-23
Chapter 5: Preparing an Adaptive Action Plan	24-26
Chapter 6: Event Preparation and Classification	27-30
Glossary	31-32
Appendix A	33
Appendix B.....	34-35
Appendix C.....	36
Adaptive Action Plan.....	37-38



PREFACE



As instructors, you have the opportunity to introduce new athletes to the exciting sport of archery. Working with adaptive archers provides you with another opportunity to teach the sport you love to a student who may not have otherwise had the opportunity to participate. Whether an archer comes to you through a Veteran program, school club or parks and recreation program, you will soon learn that with a little preparation and flexibility, you can ensure that everyone has a successful experience.

The Disabled Sports USA Adaptive Archery Manual, created in partnership with USA Archery, should serve as a supplement to the existing USA Archery Level 1 Archery Instructor Certification course so that instructors may safely teach archery to students of all ages and abilities.

This manual is designed to show you how simple it is to integrate adaptive archers into your current archery program. Using slight modifications to equipment or your teaching technique, you can ensure you are providing a safe and effective program and share your love for the sport to a whole new group of archers.

Your interest in instructing archers with disabilities is the first step towards inclusion. It is our hope that the tools included in this manual will help you create a safe and fun environment that inspires adaptive archers to cultivate a lifelong passion for the sport.

Sincerely,

*Kirk Bauer, J.D.
Executive Director*

*Denise Parker
Chief Executive Officer*

INTRODUCTION TO ADAPTIVE ARCHERY

The greatest feature of archery is that almost anyone can do it. Archery provides an opportunity for participation by people of any age, gender, or physical ability at any stage in their lives. Students with physical or cognitive impairments, who may otherwise be dissuaded from participating in sports, can participate in archery alongside students without any disability.

On the first day of class, participants can learn how to shoot a bow, often with little to no modification, and can successfully shoot at a target, which gives them a sense of accomplishment and motivation.

This manual is offered to help archery instructors learn the information needed to conduct a successful adaptive archery program by informing the instructor how to evaluate an individual's abilities and goals, as well as how best to fit them with the right equipment for their needs and desired level of involvement in the sport.

As with any archery class, safety is the top priority in a program, and range rules and whistle commands should be followed at all times. For safety reasons, all coaches are encouraged to obtain USA Archery Level I certification prior to teaching any archery course. For more information about the USA Archery instructor and coach certification program or to find a course, please visit www.usarchery.org.

BENEFITS OF AN ADAPTIVE ARCHERY PROGRAM

By including adaptive archery in your program, you can include and welcome students who may be overlooked, but are eager to learn and experience new activities.

Adaptive programs conducted alongside regular archery classes can break the stigma associated with disabilities and remove the barriers to conversations and interactions among groups of people who might be separated. This environment can be an enriching experience for all students of archery.

Adaptive students should be integrated as much as possible into normal class routines. These considerations and adaptations should flow seamlessly, as parts of the class instruction and will become second nature to the instructor with practice.

PROGRAM REGISTRATION - GATHER INFORMATION ABOUT ADAPTIVE NEEDS

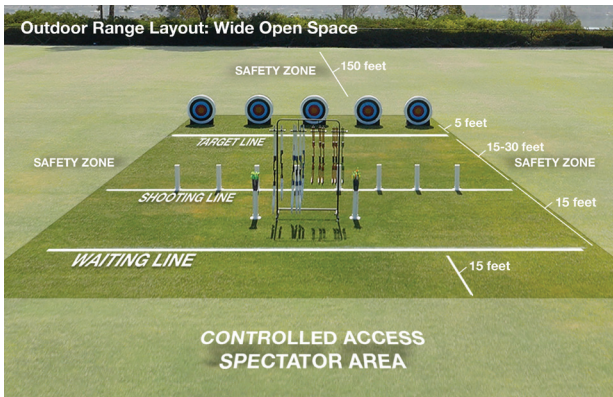
In the beginning, when working with students who have adaptive needs, asking questions and listening is just as important as instructing. Getting to know your student's needs and abilities is essential to effective teaching, and this process can start before the first class. For instance, the registration form can include questions such as; *"Does the participant need special considerations due to a physical or mental impairment? If so, please specify."* This will allow you to prepare for that student's needs as well as permit the student to inform the instructor of disabilities that might not be immediately visible. When talking to students, ask open-ended questions to allow the archers to communicate at their own pace.

CHAPTER 1: CLASSROOM MANAGEMENT

The goal of every archery class is to ensure that each archer is safely enjoying the sport and having fun. Always have archers begin shooting from a shorter shooting distance (15 to 21 feet) at blank target bales and work towards longer distances as archers gain confidence and skill. The archer can switch to a target face when scoring is attempted. Archers who are unable to retrieve their own arrows may appoint an agent to do so. You will find that the archer will be more focused, less frustrated and more likely to continue pursuing the sport if given opportunity for success. The following diagrams depict the indoor and outdoor archery range configurations recommended by USA Archery.

RANGE SAFETY

The USA Archery Level 1 Archery Certification course outlines the basic rules for safety on an archery range. These rules should be posted at all facilities you use for your program. Archers will move safely about the range via the use of whistle commands. Colored flags may be used instead of whistle commands to assist those who are deaf or hard of hearing.

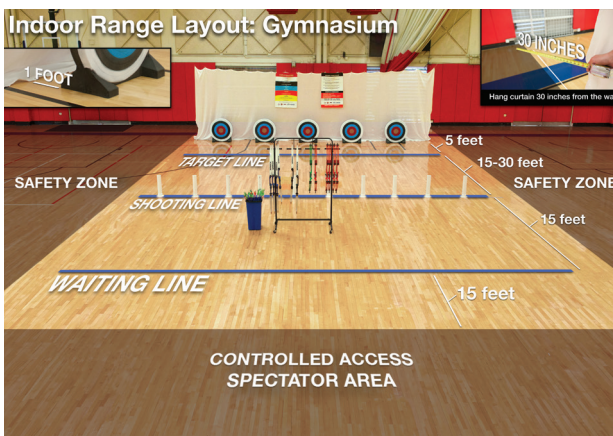


ARCHERY RANGE RULES

- ALWAYS WALK ON THE RANGE
- KEEP YOUR ARROWS IN YOUR QUIVER UNTIL TOLD TO SHOOT
- ONLY RELEASE THE BOW STRING WHEN AN ARROW IS NOCKED AND SAFELY POINTED TOWARD THE TARGET
- LEAVE DROPPED ARROWS ON THE GROUND UNTIL INSTRUCTED TO RETRIEVE THEM
- IF THERE IS AN EMERGENCY ON THE RANGE IMMEDIATELY ALERT THE INSTRUCTOR

STEPS OF SHOOTING

1. STANCE
2. NOCK
3. HOOK AND GRIP
4. POSTURE/ALIGNMENT
**SET*
5. RAISE BOW
**SET-UP*
6. DRAW
**DRAW TO LOAD*
7. ANCHOR
8. TRANSFER TO HOLD
9. AIM
**EXPAND/AIM*
10. RELEASE/FOLLOW THROUGH
11. FEEDBACK



WHISTLE COMMANDS

- 2 WHISTLE BLASTS = GO TO THE LINE
- 1 WHISTLE BLAST = SHOOT
- 3 WHISTLE BLASTS = RETRIEVE ARROWS
- 5 OR MORE WHISTLE BLASTS = EMERGENCY – IMMEDIATELY STOP SHOOTING, RETURN BOWS TO THE RACK AND GO BEHIND THE WAITING LINE

KNOW AND OBEY ALL WHISTLE COMMANDS AND RANGE RULES



SAFETY IS OUR #1 PRIORITY!



ARCHER TO COACH RATIOS

The following maximum adaptive archer-to-instructor ratios are recommended:

Adults: *5 archers to 1 instructor*

Children up to 18: *3 archers to 1 instructor*

These ratios represent the number of archers one instructor should manage at the Shooting Line at any time. More archers can be present behind the Waiting Line. It is important to have additional instructors present to help manage the archery range and you should schedule additional staff to assist, according to the needs of the participants or their experience level.

WORKING WITH CHILDREN

The first and most important aspect about working with children is to understand that they are not “small adults.” Most adults understand this, but they may need reminding that children develop physically, socially, and mentally over the first 18 years of their lives but they do not develop at the same rate – each has his/her own rate of development.

When engaging a child with a physical or developmental disability it is vital to consider their individual developmental stage. The instructor should consult the **United States Olympic Committee’s American Development Model (Appendix A)** as a guide for planning his or her interaction with each young archer. This chart will assist the instructor to determine the athletic developmental age of the student.

Special Conditions: Instructors may encounter children with special needs.

For example, a child with autism might not tolerate touching, which, of course, requires that the instructor avoid touching the child as he or she helps them learn archery. This special condition should be noted on the **Archer Profile Form** completed by the parent during the first class meeting **(See Appendix B)**.

Touching Permission: Most archery instructor’s use physical contact in the course of helping students learn to hold, draw and release the bowstring. For your self-protection and the protection of the youth you should ensure that volunteers and staff members fully understand appropriate boundaries regarding physical contact with participants.

It is recommended that all instructors working with youth complete an abuse prevention course such as the United States Olympic Committee SafeSport training prior to interacting with children and other vulnerable populations. More information on SafeSport can be found at safesport.org. Background screenings and reference checks are also invaluable tools, as part of your youth protection strategies.

WORKING WITH ADULTS

It is important to recognize that some participating adults may not be fully developed mentally, socially, and physically. Therefore, the interview process during the first class is critical. With specific information from the outset, the instructor can write an effective **Adaptive Action Plan (See Appendix C)** and ensure a positive experience for each new archer.

CHAPTER 1: CLASSROOM MANAGEMENT

Special Conditions: The interview process will also uncover any special cognitive, physical and medical conditions the student may have. Recognizing these conditions at the first class and how the adult archer wants to address them is essential to a successful experience.

Touching Permission: Just as with youth athletes the instructor should simply ask each adult student their personal feeling about physical contact at the first class session and proceed accordingly. Alternatively, the instructor can always use a pen or other object to touch the archer.

WORKING WITH VETERANS

Veterans try archery for a variety of reasons. Many try because of past experience and as a means to reconnect to a sporting activity. It is important to realize that they may not want to share their stories and there may not be a reason you need to know.

Many veterans have sustained non-visible injuries such as post-traumatic stress (PTS) or traumatic brain injury (TBI). These conditions may not be apparent in the first meeting, which will make observation of the archer in sessions to follow essential. Keen observations and awareness of special needs from the beginning and notations of these needs in the Action Plan will improve the archery experience for each veteran.

Invisible Injuries: Veterans may have hidden conditions that will only be apparent in certain situations. Most veterans will have no visible reactions to the range or program atmosphere. However, some may have reactions to overcrowding, confined spaces, and sudden loud noises. It is not

recommended to counsel the archer, unless properly trained. The instructor's best reaction is to permit quiet time and allow the archer space to process the adversity. Additionally, some students with non-visible injuries may require modifications to the standard shot process.

Disabled Sports USA offers online instructor guides for teaching athletes with TBI and PTS at disabledsportsusa.org.

RECORD KEEPING

Keeping accurate, but simple, records will contribute greatly to your program's success. It is recommended to keep a Profile Form (**See Appendix B**) for each archer along with an Adaptive Action Plan (**See Appendix C**). These documents are essential to understanding the needs of each archer, whether it is having a simple experience in archery or undertaking a long-term program of skill development. It is important to review these documents periodically and note any changes.



CHAPTER 2: ADAPTATIONS FOR EQUIPMENT AND ACCESSORIES

There is a common misconception that adaptive archery requires specialized equipment that is hard to come by and difficult to produce. Sporting goods companies typically do not manufacture modified archery equipment. However, much of the adaptive equipment an instructor will see on an archery range is the result of the creativity and ingenuity of the archer, instructor, or family member. Adaptive archery can be cost-effective and is only as expensive as the parts to put together a harness, release aid, or stabilizing tool needed to help the archer shoot safely. It is important to remember that the equipment should be adapted to the archer and not vice versa.



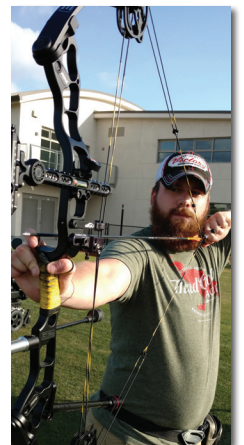
Choosing the right equipment from the start is important to the archer's success. This chapter provides advice for the instructor on how to aid the instructor in outfitting an archer with adaptive needs with proper equipment and accessories.

BOW SELECTION

The bow you select for any given archer must match the archer's ability to hold, grip and draw the bowstring. Archers may choose to shoot either a compound or recurve bow.

COMPOUND BOW

Most compound bows are relatively short at 28" to 36" axle-to-axle and fit the seated archer easily. The major adaptive consideration, therefore, is the maximum draw weight. Some youth bow models have a universal draw length and an adjustable draw weight to as low as 10 pounds, making it easy for multiple archers to share the same bow. Archers will ultimately need to choose between a universal draw length or an adjustable draw length bow.



Choosing a compound bow can be more difficult because a compound bow with an adjustable draw length does need to fit the individual shooting it. It is generally not recommended to purchase a compound bow with an adjustable draw length until the archer knows the basic steps of shooting.

RECURVE BOW

The first step in selecting a recurve bow is to match the length of the bow to the height of the archer. The adaptive archer in the seated position may need to use the shorter-length recurve bow. This will allow the archer to adjust to the position and movement needed to draw and release the bowstring. If an archer uses a wheelchair, the bow should be short enough so that it does not strike the ground when held properly.



After determining the proper bow length, match the draw weight to the archer's strength. When selecting a recurve bow start with a draw weight of 10 to 20 pounds.

CHAPTER 2: ADAPTATIONS FOR EQUIPMENT AND ACCESSORIES

RELEASE AID SELECTION

Releasing the bowstring fits into two major categories depending on the archer's release-hand function. If the athlete has normal hand function, then the archer may select to shoot with his or her fingers using a finger tab, a shooting glove or a standard hand-held mechanical release aid.

Finger Tabs and Gloves

A finger tab is a device used to assist the archer in gripping the bowstring. This flat leather device fits between the fingers and bowstring to protect the fingers while drawing, holding and releasing the bowstring. Another option is a finger glove, which protects each finger individually.



Mechanical Release Aids

Mechanical release aids may also be adapted for use by archers who are missing a hand or arm. Creativity is essential for finding the best match for any given adaptation. Working with others and using outside resource experts such as recreation therapists is highly recommended.

There are many types of mechanical release aids that are used in archery. They can be categorized into several main types and adapted as necessary:

1 Caliper (Trigger) Release Aid with Wrist Strap

Many new compound target archers use a release aid with a wrist strap that activates by an index finger trigger. The wrist strap works well for adapted archers who do not have full hand use.

2 Thumb Release Aid

Most thumb release aids also have trigger extensions to adjust to the archer's hand size. Additionally, a pinky-finger trigger is available for those who need it.

3 Back Tension Release Aid

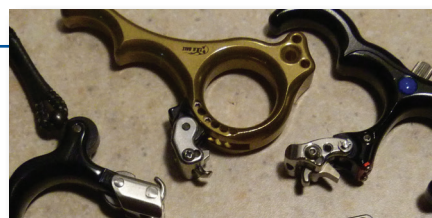
The back-tension or hinge style release activates when the handle rotates. This rotation can be generated from the muscles in the back for most archers, but some adaptive archers use their chin or mouth movement to activate the release that is held to their body by a strap.



1



2



3

MOUTH TAB

Many archers who have lost one hand or arm elect to use the bowstring-mounted mouth tab. This is usually a piece of heavy nylon strap that can be tied to the bowstring and held between two molars so the archer can draw the bowstring, hold and release the arrow. A bow sight can be easily adapted for use by these archers.



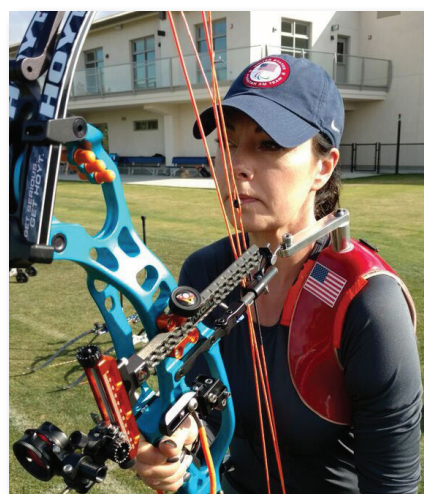
Strap-On Release Aid

The strap-on wrist release aid has been adapted so that these archers can activate the release with their chin. Alternatively, archers can use a mouth-activated triggering mechanism.



Shoulder-Mounted Release Aid

Many release aids come with a wrist strap but those archers who have to adapt to using one hand may only need a shoulder mounted release aid. As shown in the photo on the right, the bow is fitted with an extension to allow the archer to activate the hinge-style release with her chin. The actual release is commercially available, but the instructor and athlete adapt the harness and release method.



CHAPTER 2: ADAPTATIONS FOR EQUIPMENT AND ACCESSORIES

SHOOTING LINE ACCESSORIES

Adaptations at the Shooting Line fall into the two categories of standing or seated athletes. The seated archer may need their wheelchair, a campstool, or taller director's style chair.

The standing athlete may need a simple wedge or other device for a foot, a leg brace or a leaning prop. Bear in mind that each athlete may need a specific adaptation based on their needs and limitations.

Other adaptations may come in the form of quiver attachments to the wheelchair or quiver stands located at the Shooting Line.



BOW STANDS:

The horizontal and vertical bow stand is an adapted piece of equipment that is designed to provide an archer with significant motor dysfunction, spasticity and/or partial paralysis an opportunity to engage in archery. The bow stand can be free standing or attached to the athlete's wheelchair. The bow stand is designed to provide the archer with the maximum amount of independence possible during the shot process.

A thorough assessment of the functional motor ability of the archer is necessary to provide a sound foundation for teaching and learning each skill. The horizontal bow stand provides the most stable shooting platform because the bow itself is perpendicular to the ground with the arrow rest facing upward. In most cases, the archer will need assistance in nocking the arrow and placing their fingers in the proper position. Initially, the archer may also need assistance in drawing the bowstring, or may require assistance on an ongoing basis. Once the arrow has been drawn, the archer should make horizontal and vertical adjustments for acquiring the target. The release is generally labored (for archers with significant spasticity) but the archer should be encouraged to release the arrow as independently as possible. Mechanical releases can also be utilized when using the bow stand. As the archer develops and gains strength and expertise, holding the archer's wrist while he or she is acquiring the hook on the bowstring will be the maximum assist necessary.

The primary focus of instruction when utilizing the bow stand is helping the archer to develop the maximum independence possible when shooting.



Prior to or during the first class it is important have the student complete the Archer Profile Form **(See Appendix B)**. The information provided on this form can be used by the instructor to gauge the student's experience in archery and any physical or cognitive needs he or she may have in preparation for the first class.

TEACHING THE FIRST CLASS

During the first class the instructor should first interview and then observe the archer. The interview process establishes which adaptations can and need to be made so the student can shoot an arrow. The objective is to allow the archer to safely engage in completing and repeating the shot process and measure improvement. The information gathered during this process will aid in the development of the Adaptive Action Plan **(See Appendix C)**. This plan establishes for all concerned—the athlete, the family, and the instructor— how the archer will engage with the archery equipment in order to release an arrow successfully toward the target. The safety of the archer must be the foremost priority.

TEACHING THE FIRST SHOT

Before shooting can begin and before you can view the archer, you must figure out how the archer will shoot. For instance: Which hand will he or she hold the bow with? How will he or she pull the bowstring, and will the archer sit or stand? If the archer has shot before, they may be able to tell you how they did it. If not, you will need to solve equipment needs first and then guide the archer through the shot process.

In most cases, you will be teaching the first-shot process from Coaching Position One, which is discussed in further detail on the following page. From this position, you can help the archer nock the arrow, assist in placing their hands or holding devices on the bow grip, and assist in drawing, holding, and releasing the bowstring by guiding his hands with yours. You may be standing, on your knees, or sitting in a chair, depending on the position that places you at eye-level with the archer. Since each adapted archer is unique, you will have to adapt your own abilities to get the job done.

Once the archer is equipped and knows how to safely shoot a bow and arrow, you can proceed to observing the archer.

OBSERVING THE ARCHER

Observing the archer requires listening, collecting information, and, of course, watching. The outcome of this process is the Adaptive Action Plan **(see Appendix C)** that your athlete-parent-instructor team can use to efficiently move forward in the sport of archery. Viewing the archer's shot process is essential to forming any kind of adaptive plan. Observing an adapted archer is no different than observing any other archer, but the notes will differ.

COACHING POSITIONS

During the observation process the instructor should document any necessary form corrections and be prepared to provide positive and constructive feedback to the archer, and adapt equipment for the archer's specific needs as necessary. When observing the archer, the instructor should rotate through the following coaching positions:

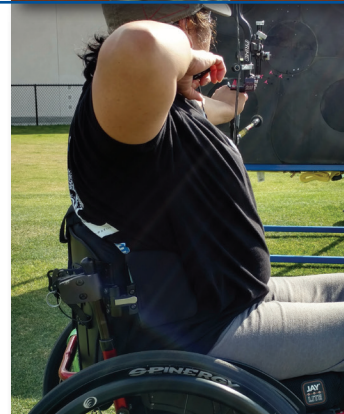
POSITION ONE

The instructor should stand face-to-face with the archer, just behind the Shooting Line. This is the best position to watch an archer take his or her first shot. The instructor may use this position to evaluate an archer's grip, arm strength, ability to draw the bow and release the bowstring. From this position the instructor can observe stance, nock, hook and grip, posture/alignment, raise bow, draw, anchor; and release/follow-through.



POSITION TWO

The instructor should stand behind the archer between the Waiting Line and Shooting Line looking over the draw arm elbow. Standing behind the archer's elbow gives you a view of their vertical posture in this plane. Not all archers can achieve a true vertical alignment or position their holding arm in line with the arrow. However, instructors should train the athlete to consistently achieve a true vertical alignment. From this coaching position the instructor can observe posture/alignment, anchor, and release/follow-through.



POSITION THREE

The instructor should stand behind the archer looking at the back. From this view, you may learn how to better modify the archer's chair, leaning brace, or shoulder position. From this position the instructor can observe posture/alignment, raise bow, and transfer to hold release/follow-through.



POSITION FOUR

The instructor should stand 15 feet behind the archer. Standing at a distance gives the instructor a chance to view the complete form of the archer and his or her body balance. From this position the instructor can observe posture/alignment, and release/follow-through.



CHAPTER 4: EVALUATING THE SHOT PROCESS

SHOOTING POSITION:

As you observe the adapted archer, your evaluation needs to focus on three main areas: the shooting position, release method, and types of assistance needed.

The positions used by most adapted archers are

- Standing
- Sitting/Wheelchair
- Braced support

The illustrations included in this section will provide initial reference points for these positions. You must determine which position will best fit the needs of each archer you evaluate. Stability and consistency are most important. While learning, the archers can use whatever strapping and adaptations are available. Archers intending to compete will need additional instruction on competition rules from USA Archery.

Standing: The most common archer shooting position is standing. Adapted archers who are able should stand if their adaptive devices can be fitted for the standing position.

Sitting/Wheelchair: Adapted archers who cannot stand should sit comfortably in a chair or wheelchair. This position provides stability while they hold the bowstring at full-draw.

Braced: Archers can also stand partially upright or fully upright if they have a braced support to lean against. If the archer cannot stand with adequate stability, they may need to remain in their wheelchair.



VISUALLY IMPAIRED ARCHERS

People with visual impairments can enjoy archery through the use of tactile or sound-emitting sighting devices. Many will need assistance in positioning themselves in a chair or in standing blocks so they can be oriented toward the target.

Once their position is established and their arrow nocked on the bowstring they can raise, draw and aim toward the target by touching their bow hand to a metal or plastic rod. This rod most often is affixed to a tripod and is adjustable like any other archery sight - assistance is required. The result is a very effective means of aiming at short distance targets.



CHAPTER 4: EVALUATING THE SHOT PROCESS

RELEASE METHOD

Each archer must be able to draw and hold the bowstring in some way. The most commonly used methods are:

- Fingers
- Mechanical Hand-Held Release Aid
- Mouth Tab
- Mouth-Activated Mechanical Release Aid
- Assisted by Coach.

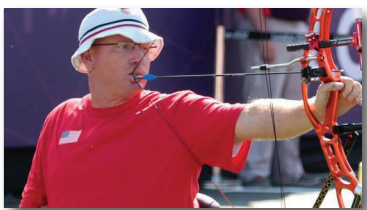
Please consult the illustrations in this section as your point of reference. You will be able to make a decision as to what method may suit each archer you evaluate.

Fingers: Many archers who have full use of their hands prefer to hook the bowstring with their fingers in the traditional method by drawing the bowstring under the chin.

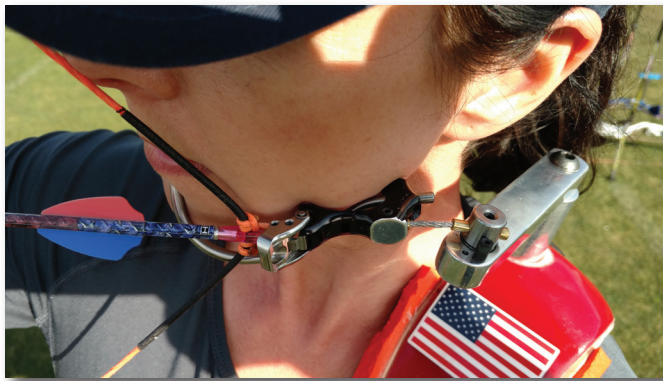


Mechanical hand-held release aid: Archers with full use of their hands who shoot a compound bow may select the mechanical release aid. Some styles of release aids have a trigger while others work on a rotating-hinge principle.

Mouth tab: Some archers who have lost the use of an arm or hand may select the mouth tab. This tab attaches permanently to the bowstring and is held between the archer's molar teeth while drawing, holding, and releasing the bowstring. The mouth tab can be as simple as a piece of leather that is cut out with scissors and has two puncture holes to run the bowstring through the tab above and below the nocking point.



Mouth-activated release aid: Other archers who have lost use of an arm or hand prefer to draw the bow using a shoulder-mounted release aid that is activated by one's mouth or chin.



TYPES OF ASSISTANCE: Some archers may not be able to complete some of the tasks required to operate a bow and arrow. Archers may require assistance in the following areas:

- Gripping the bow handle
- Nocking the arrow on the bowstring
- Drawing the bowstring
- Holding the bowstring at full-draw
- Retrieving arrows from the target

Archers needing this kind of assistance will require the coach or a trained volunteer on each shot. The number of staff or volunteers may limit the number of archers a program can place on the shooting line at any given time.

Gripping the bow: Establishing a good and proper grip on the bow handle is essential before drawing the bowstring. Adapting the archer's prosthetic device may require some creative engineering. The bow can be strapped into the archer's hand if necessary, or the coach can assist with holding the bow. If an archer goes beyond the introductory stage, bracing can be used. Occupational therapists can often help with this process.



CHAPTER 4: EVALUATING THE SHOT PROCESS

Nocking the arrow: Limited use of the hand challenges an archer to nock the arrow onto the bowstring. Some may require assistance with this step.



Drawing the bowstring: While positioning the bow, the archer's bow arm applies force against it, which is essential to drawing the bowstring. If the archer cannot draw the bowstring, then he or she may require volunteer assistance with this step. Some archers have developed stands to help hold the bow.



Holding the drawn bowstring: Holding the bowstring at the full-draw position may require a position that fits the archer's abilities. As shown in the photo below, the archer needs to hold the bowstring low to accommodate a shoulder limitation.



Retrieving arrows: Archers who use wheelchairs and those with walking limitations may need a volunteer or agent to retrieve their arrows from the target. The volunteer or agent must also record the scores. The need for a volunteer or agent will often depend on the shooting surface, for example, indoors on a solid floor versus a grassy, rocky field.



THE SHOT PROCESS

Bow arm and hand challenges can be overcome by using a variety of devices such as hand braces, hand straps, plastic elbow braces and metal braces.

A braced bow hand can enable the athlete to hold their bow. Other athletes may need an arm-length metal framework to resist the force of the bow. Some may need this framework or other device attached to their wheelchair while others learn how to hold their bow with their foot and leg. The remainder of this chapter will provide suggestions for adaptations to assist archers with their shot process.

Nocking the Arrow

The simple act of placing an arrow on the bowstring can present major challenges (see page 28). Seated archers may need a special chair-mounted quiver or someone to place the arrow on the bowstring for them. Athletes can also place the arrows on the ground and use a foot to pick up and nock the arrow on the bowstring.

Standing archers may need a ground quiver, hip quiver, or a back quiver. Other athletes may need a small table or stand for their arrows to make them accessible. Experiment with the placement of the quivers and find where it is easiest for the archer to grip one arrow and turn it so it can be attached to the bowstring.

Hooking the Bowstring

Archers who use mechanical release aids may have difficulty hooking their device to the bowstring (see page 20). Some athletes adapt to using their chin or mouth to accomplish this action while others may put

the bow on their lap and use their bow hand to assist while hooking. A volunteer assistant may also help athletes hook the bowstring.

Athletes with a severe draw-arm challenge may use a shoulder mounted release aid. This adaptation would require using their chin/mouth to hook and then activate the release aid.

Trigger shapes and release aid handle shapes can be modified to fit the needs of the archer. Longer triggers, wider handles, bigger and stiffer string-mounted D-loops may help the archer to be more efficient.

Drawing the Bowstring

A bow properly matched to the archer is essential. When in doubt, begin with a low draw weight as one can always increase it later depending on the archer's ability.

When possible, the archer should extend his bow arm, align his shoulders, and use them to resist the force of the drawn bow. This is not always physically possible and some athletes may need instructor-assistance in holding the bow.

Some athletes may need assistance to hold the bow handle while they hold and release the bowstring or vice versa (see page 19). A metal framework can be utilized to hold their bow while they draw with their able hand. The instructor and archer should be open-minded and creative to find a successful solution.

CHAPTER 4: EVALUATING THE SHOT PROCESS

STEADYING THE BOW

Once the bow is drawn, it is important to hold it relatively still to ensure a safe and timely release of the arrow. Both upper body and lower body challenges must be addressed to accomplish a steady hold.

Bracing: Lower-body challenges may be solved with a wheelchair or some other type of chair. Chest, waist and leg straps or bracing may need to be installed on the chair to improve steadiness. Standing archers may need a post or brace to lean against.

A simple wedge under the heel may be all that is necessary to help an archer maintain proper balance while holding the bow for aiming.

Stability: To assist some archers with stability in their wheelchair you may need to devise a waist or chest strap. This strap enables them to aim steady and repeat their shot execution, which is the first principle of learning archery. Single-arm archers face the same challenges as archers without a disability in that they must develop their stance to generate steadiness. Proper foot spread, weight distribution, setting knees back and correct pelvis positioning must be developed.

Establishing the anchor point: A traditional anchor point may not be an option for many adaptive archers. When possible, the top priority is always to have the holding arm in line with the arrow to promote transfer of holding into the back muscles. The hand or holding device will then touch the neck/jaw/cheek at a place that allows the bowstring/peep sight to locate in front of the aiming eye. When the anchor point is not possible then the peep sight must be situated in front of the aiming eye and the archer must find a way to do that consistently.



Release Technique: Athletes with a functioning release hand deal with the same learning challenges as an archer without a disability. Release technique practice is essential to improving arrow groups in the target. Some archers can use a stretch band or string-bow while others can only practice with their specialized adapted devices. For these archers utilizing specialized adapted devices, it is important to properly design and fabricate the device before they can begin practicing.



Archers using adaptations to release their bowstring need special practice. Sufficient time should be spent on refining the adaptive device or technique. This may range from adjusting the shape of a release aid to changing materials of a mouth tab. Keep in mind that an athlete may take time to grow accustomed to the altered device. As with any archer, the adaptive archer needs additional practice shooting targets and improving their level of consistency.

Letting down the bowstring: Letting down the bowstring is a safety issue and must be practiced. At any given time during group shooting an emergency may occur somewhere on the shooting range requiring the “EMERGENCY” whistle blasts from the instructor. At this point EVERYONE must let-down their drawn bowstring and arrow.

From the first days of training with an adaptive archer you must be conscious of this need to let down. Part of the drawing exercise must involve drawing, holding for a few seconds and then letting down the bowstring. Many instructors do this as part of their normal teaching method and it is highly recommended that you adopt this into your own teaching. Prepare your archer from the beginning, so they can accomplish their let-down safely with some skill.

Resetting: When an arrow is released the holding forces within the archer’s body now also release and the archer’s body shifts. The archer must now reset his or her body position in order to prepare for the next shot. The adaptive archer may need special assistance to accomplish this task. Seated archers may need to shift upward or shift backward in their seat as the release causes some body shifting. They may need some assistance as they perform this action on a continued basis.



Archers using adaptive devices for standing may need to reposition those devices before the next shot is attempted. Instructors should be prepared to assist as needed.

CHAPTER 5: PREPARING AN ADAPTIVE ACTION PLAN

Goal setting is an important part of archer development. For the archer who needs adaptations to shoot their bow, these goals chart their developmental path for athlete growth in the areas of social skills, physical coordination, and enhanced self-image. An Adaptive Action Plan begins with the establishment of the appropriate goals for each individual athlete **(see Appendix C)**.

GOAL SETTING

Adaptive athletes need to set goals so they can chart their progress. Goals for the adaptive athlete may involve three types of individuals: the athlete, the family, and the instructor. Each member of this team may have their own set of goals so communication among the team is essential to establishing an optimum and unified path for progress.

It is important to remember that not every goal can be accomplished in weeks, months or even in two years. For this reason, it is a good idea to organize goals by the time it will take to achieve them (i.e. short range, intermediate range and long range). This has a strong benefit for the archer in that there is always another goal to be achieved; even if they have struggled at one practice, the next class presents another opportunity for success. Work with the archer's team to develop the Adaptive Action Plan that encompasses multiple goal types for best results.

TYPES OF GOALS

Process Based Goals

Process based goals are the path to success and lead to outcome-based goals. They start with an honest self-assessment. These goals are created to master certain skills and improve in both weak and strong areas. They can be easily measured and defined.

Sample: Allison will learn to attach her mechanical release aid to the bowstring using her limited functioning right hand with guided-assistance from the instructor and then progressing to no assistance over the next four training hours.

Trained instructors understand that establishing appropriate process goals is foundational to an athlete's success. As the instructor, you will have to guide the athlete and the family in setting these physically oriented goals.

Certain types of disability, such as Traumatic Brain Injury or other cognitive impairments may cause significant differences in the typical attainment of goals that an instructor might be used to. For example, processes may take more repetitions and time for these athletes.

OUTCOME BASED GOALS

Outcome based goals are result oriented and may be out of the athlete's direct control. Athletes may or may not achieve these goals, because they are dependent on external factors, such as how well another athlete places at an event.

Some types of cognitive disability can affect the archer's ability to process the positive and negative emotions associated with success and failure. For these athletes', it is even more important than usual to provide clear, constructive and calm feedback to the athlete. It may not even be in all athletes best interest to set an outcome-based goal if they have difficulties dealing with results.

Sample: Shooting from 10 meters and a seated position, Allison, with arrow-nocking assistance will be able to use her assisted bow holding device, a hand-held trigger release to self-draw the bowstring to impact the scoring area with 5 more arrows than the other archers in the competition.

SOCIAL DEVELOPMENT GOALS

Archery has a large social aspect. This is evident when archers get together in groups for practice or for tournaments. For some athletes, the growth of their life skills is essential for enhancing their quality of life.

Sample: William has autism and tends to be very shy. Over the next six practice sessions, William will learn to initiate conversations with his three teammates while spotting their arrows in the target during the team game exercise.

SELF-IMAGE GOALS

An athlete's self-image is vital to his or her life balance. The instructor should use encouraging words, a positive tone of voice, and appropriate non-verbal signals to foster the athlete's self-image. The family should be familiar with these forms of encouragement as they support an athlete.

Sample: At least three times in each of the next six practice sessions, the instructor will use positive words of encouragement and praise regarding William's actions: for results at the target, for his work ethic, and for his treatment of others.

As goals are reached, students and coaches must celebrate goals achieved, re-evaluate stated goals and decide upon new short, intermediate and long range goals. Acknowledging successful completion of goals is an important confidence builder and helps the archer to improve his or her mental game.

IMPLEMENTING THE ADAPTIVE ACTION PLAN

A written plan is of little use until you begin to implement it with the student. Implementation of the **Adaptive Action Plan** will require one-on-one teaching skills (verbal and non-verbal) a positive attitude and praise. Positive reinforcement of the archer's work ethic will encourage the archers to improve his or her skills.

The greatest attribute that you can adopt with adaptive archers is patience! First an instructor needs patience while determining the archer's needs in order for them to begin interacting with their equipment. Adopting various coaching positions, as outlined in the previous chapter are essential for this method of instruction.

CHAPTER 5: PREPARING AN ADAPTIVE ACTION PLAN

Effective communication is equally as important as patience. Words paint pictures and so do the instructor's non-verbal signals. Choose them all wisely. Use positive facial expressions and hand gestures at every opportunity, but remember to use silence when appropriate.

In addition, instructors and athletes must be willing to experiment. Trial and error with a variety of equipment is common when dealing with adaptive archers. At this point, it is important to reinforce to the archer that you need their honest input, so you can find the equipment and accessories that are most comfortable and effective for them.



ADAPTIVE ACTION PLAN ADJUSTMENTS

Be sure to follow the written plan and be ready to adjust that plan as circumstances dictate. Plans are made to introduce the athlete to archery, but no plan is perfect so be prepared to make changes, incorporate them into the written plan and move forward.

CHAPTER 6: EVENT PREPARATION AND CLASSIFICATION

Events provide participants with additional opportunities to practice their skills in a social setting. Events can be organized by invitation only or welcome to those of all skill levels. Many competitions also integrate adaptive archers with other archers. Events provide an inspiring atmosphere and are a way to test an archer's skill set and a means to make new friends.

The path for a competitive archer in the adaptive realm is very similar to any other archer. As with other adaptive sporting activities, para archery means the adaptive archer competes alongside all other archers using similar equipment. The prefix para originates from the Greek language and means "beside or alongside."

In most cases, when adaptive archers do not have a separate classification during local and regional events, they will compete with all archers using similar equipment. In national and international events, adaptive archers are separated by their individual classifications regarding ability and equipment.

At the local level, it is not necessary to classify or limit any archer's participation. Anyone who fills the requirements for the club or camp can take part in the archery program. This allows for complete inclusion for those with any physical or cognitive challenges. Not all archery programs need to culminate in competition. Programs can focus on weekly recreational shooting for enjoyment as well as focus on training for local, state, regional and national competitions and beyond.

EVENT RULES

When preparing for competition the archer and the coach should refer to the rules specified for the competition. If an archer competes in USA Archery sanctioned events, World Archery rules will be adhered to. However, not all archery events follow World Archery rules. For example the Jr. Wheelchair Games and others follow different guidelines. Therefore, it is important to review the rules before each event. To view the World Archery rules please visit www.usarchery.org.

EVENT PREPARATION

As with all competitive events, it is best to plan ahead and be prepared. Archers with disabilities often need more planning than other athletes. Items to consider include:

Facility Accessibility

- Transport to hotel
- Transport to the archery field

Restroom Access

- Are the restrooms within reasonable distance to the archery field?
- Are the restrooms accessible to the archer?
- If neither, archers can notify judges and request to make up arrows when they return

CHAPTER 6: EVENT PREPARATION AND CLASSIFICATION

In addition, the archer and coach should plan to bring the following items to the event:

EQUIPMENT

- Classification card with archer's information
- Archery equipment
- Adaptive accessories (i.e. Strapping and body support)
- Shooting Line accessories (i.e. Wheelchair and basic repair tools)
- Archer's agent pass information
- Notebook and pen to log activities and times

CONSIDERATIONS FOR HOSTING AN EVENT WITH ADAPTIVE ARCHERS

If you plan to host an event that will include adaptive archers, you should consider the following:

- A shelter or indoor alternative for inclement weather and sunshade as necessary. If the event will be held on sod or a soft ground surface, provide accessible pathways for wheelchairs.
- Sufficient and readily accessible drinking water and restroom services.
- Easy access and egress to the archery range from parking areas.
- Special medical needs and archer's special modifications. For example, adequate space and special considerations are needed for archers with oversized wheelchairs. In addition, wheelchair competitors sometimes do not move during shooting, so lane assignments can be effected.

When hosting an event, it may be helpful to have rosters organized by group, age, equipment type, or gender categories. Holding a pre-registration and having a larger number of volunteers will help with event flow. If you know the capabilities of the archers in advance, range setup is easier when determining the number of required shooting lanes and targets at given distances. Sometimes, the number and scope of registered participants is an unknown, so flexibility in targeting positions and target sizes is necessary.

Unless the event will be used as official classification or for ranking towards a specific team, it is not mandatory to run an official round. Make the round(s) somewhat challenging, but achievable for most. If using a timing system, double the amount of time needed to shoot and allow additional time for arrow retrieval. For less experienced archers, suggest shooting at larger targets at lessor distances. If possible, have safety netting or soft berm to capture stray arrows. For those beginners, a metal detector will be a very useful addition to your event supplies list.

CLASSIFICATIONS AND THE PARALYMPIC PATHWAY

The pathway for archers on the USA Archery Paralympic team is detailed on the organization's website at www.usarchery.org. USA Archery follows World Archery event rules and conforms to the International Paralympic Committee (IPC) and US Olympic Committee (USOC) guidelines. These guidelines require USA Archery competitors to be classified by a certified national or international classifier who is trained with a medical

background and in aspects of archery skills. The classification is accompanied by a physician's details of the individual's physical disabilities or limitations.

It is important to note that while these Paralympic classifications do not encompass all archers with disabilities (e.g. those with cognitive disabilities), all archers are permitted to take part in competition alongside their non-disabled peers. In local competitions, other categories of classification may exist. For more information on how and where to be classified, please contact USA Archery.

WORLD ARCHERY CLASSIFICATIONS

After an archer has been medically classified, he or she will be put into a shooting category. There are four shooting categories in World Archery. They are usually divided into men and women as follows:

W1 Class

The W1 shooting category can be assigned to an individual who shoots from a wheelchair and has both upper and lower body limitations. A recurve bow or a compound bow without a peep sight or magnifying sight lens may be used. Most individuals compete with a compound bow limited to a 45lb maximum draw weight.



Open Recurve

The Open Recurve category can be assigned to an individual with either upper or lower body limitations that shoots a recurve bow. The recurve bow can be shot from a standing, supported, or wheelchair position, depending on the classification. Standard World Archery recurve equipment rules apply.



Open Compound

The Open Compound category can be assigned to an individual with either upper or lower body limitations that shoots a compound bow. The compound bow can be shot from a standing, supported, or wheelchair position, depending on the classification. Standard World Archery compound equipment rules apply.

Visually Impaired

The Visually Impaired category can be assigned to an individual that has impairment in their vision. VI athletes must wear blindfolds or blackout glasses while competing. Athletes may use tactile sights and are permitted an assistant sitting or standing one meter behind the shooting line to relay information about the position of the arrows in the target, safety and help with scoring.

CHAPTER 6: EVENT PREPARATION AND CLASSIFICATION

CONCLUSION

The information, recommendations and concepts presented in this manual are designed to do one basic thing: help you help archery students. Use what is presented here and you will be able to help ALL archers. This is significant because everyone can enjoy archery in some way if we, as coaches, use the proper adaptation.

The combined experience of the authors of this manual is well over one hundred years. In that time we have encountered thousands of archery students each needing their own adaptations. So, regardless of whether you are just beginning or have years of experience, you can help students succeed!



RECURVE BOW: An archery bow that is constructed of a metal or wooden handle with two flexible limbs attached to its ends and a string connecting the ends of the limbs.

COMPOUND BOW: An archery bow constructed of a metal handle, two flexible limbs with a cam-shaped wheel mounted on the limb tips and connected with flexible cables and string. When the string is displaced (drawn) away from the handle the mechanical advantage of the cams reduces the bowstring holding weight relative to the maximum drawing force.

UNIVERSAL-DRAW COMPOUND BOW: A compound bow whose cams allow the bowstring holding weight to remain constant across a wide range of drawing distances, approximately from 15" to 30" of draw length thus allowing archers of different sizes to use the bow effectively.

TAB: A finger tab consists of a piece leather or plastic placed between your drawing fingers and the bow string in order to protect them and provide a more consistent release of the bowstring.

GLOVE: A drawing-hand shooting glove (usually leather) is used to cover and protect the archers fingers from the bowstring.

MOUTH TAB: A rope or cord attachment on the bowstring at the nocking point that enables the archer to draw and hold the bow using their mouth (molar teeth).

RELEASE AID: A mechanical device that attaches to the bowstring enabling the user to hand-draw and release the string by use of a triggering mechanism.

SHOULDER-MOUNTED RELEASE AID: A mechanical release aid that can be mounted to the shoulder/neck/back of the archer enabling them to chin or mouth or otherwise activate the release aid.

ACTION PLAN: The individualized plan, usually written, made and used by coaches/teachers to set and accomplish goals for a student.

GRIPPING: The action of placing an archers hand on the grip-section of an archery bow. It is ideal for the hand to be relaxed but other adaptations may need to be implemented.

NOCKING: The act of placing the nock-end of an arrow onto the bowstring at a marked and fixed point called the nocking-point.

DRAWING: The act of physically displacing the bowstring away from the bow handle requiring effort from the archer.

GLOSSARY OF KEY TERMS

HOLDING: The act of holding the bowstring in the fully draw position using ones muscle and skeleton.

LET-DOWN: The act of slowly relaxing the bow, without releasing the bowstring, from the holding position to the braced or undrawn position.

W-1: The shooting category given to individuals who have both an upper body and a lower body limitations.

OPEN RECURVE: The shooting category given to individuals who have either an upper body or lower body limitation and choose to shoot a recurve bow.

OPEN COMPOUND: The shooting category given to individuals who have either an upper body or lower body limitation and choose to shoot a compound bow.

VISUALLY IMPAIRED: The shooting category given to individuals that have impairment in their vision.

APPENDIX A AMERICAN DEVELOPMENT MODEL





ADM
AMERICAN DEVELOPMENT MODEL

5 STAGES TO A BETTER SPORT EXPERIENCE

The American Development Model is meant to explain an athlete's advancement through a pathway supporting a healthy sport experience based on their physical, mental and emotional level and potential for growth.

STAGE 5 Thrive & Mentor Age: For Life		5
STAGE 4 Excel for High Performance Age: 15 +	STAGE 4 Participate & Succeed Age: 15 +	4
STAGE 3 Train & Compete AGE: 13 - 19		3
STAGE 2 Develop & Challenge Age: 10 - 16		2
STAGE 1 Discover, Learn & Play Age: 0 - 12		1



© 2015 United States Olympic Committee, a 501(c) (3) nonprofit corporation. TEAMUSA.ORG

APPENDIX B

ARCHER PROFILE FORM

Name: _____ Age: _____ Date: _____

Address: _____

City: _____ State: _____ Zip: _____

Email: _____ Phone: _____

Equipment & Experience

Please list the number of years you have participated in Archery: _____

Please explain your previous archery experience: _____

If applicable, please list the type of equipment you use, as well as your equipment specifications:

Bow Type: Recurve: Compound: Sight Type: _____

Draw Length: _____ Draw Weight: _____

Arrow Type: _____ Release Aid: _____

Please list the accessories you require on the Shooting Line (*i.e. stool, chair straps, wedge*)

The more we know about you, the better we can tailor your archery experience for you. Please let us know if we need to take any of the following into consideration.

Please check all that apply:

I have limited mobility, strength and/or paralysis in any of the following:

- Hands
- Feet
- Upper Leg
- Lower Leg
- Shoulder
- Neck
- Back
- Paraplegic
- Quadriplegic

If you checked yes, please explain: _____

Do you live with any of the following? Please check all that apply:

- Visual impairment
- Balance, dizziness, vertigo
- Hearing impairment
- Memory impairment
- Speech impediment
- Intellectual/Cognitive disability
- Cerebral Palsy
- Autism
- ADD, ADHD
- PTSD

If you checked yes, please explain: _____

Please check all of the following that apply to you:

- Averse to crowds
- Averse to certain touch
- Averse to certain sounds
- Averse to certain environments

If you checked yes, please explain: _____

Is there anything else you'd like your coach to know about you? This can include medical considerations, strengths, abilities, goals, past experiences etc.

Instructor Notes: _____

APPENDIX C ADAPTIVE ACTION PLAN

Name: _____ Age: _____ Date: _____

Address: _____

City: _____ State: _____ Zip: _____

Email: _____ Phone: _____

Coach: _____

Archer Objectives: _____

Family Objectives: _____

Coach Objectives: _____

Equipment

Bow Type: Recurve Compound Barebow Sight Type: _____

Draw Length: _____ Draw Weight: _____

Arrow Type: _____ Release Aid: _____

ADAPTIVE ACTION PLAN (CONTINUED)

Please note any adaptations or considerations that apply for the archer to execute a shot:

1. Stance (*i.e. stool placement, chair straps*)

2. Nock (*i.e. resting bow on chair*)

3. Grip (*i.e. velcro glove*)

4. Hook (*i.e. release aid, harness*)

5. Posture/Alignment (*i.e. deep breaths, body alignment*)

6. Draw (*i.e. bow stand*)

7. Anchor (*i.e. release chin-bar placement*)

8. Expand/Aim (*i.e. expand against chin bar*)

9. Release/Follow Through (*i.e. relax jaw to release mouth tab*)

10. Letting Down the Bowstring, When Applicable (*i.e. shoot arrow in the dirt*)

11. Resetting for the Next Shot (*i.e. reset release harness*)

ADAPTIVE ACTION PLAN (CONTINUED)

Goals for Session 1

Date: _____

1. _____
2. _____
3. _____

Goals for Session 2

Date: _____

1. _____
2. _____
3. _____

Goals for Session 3

Date: _____

1. _____
2. _____
3. _____

Goals for Session 4

Date: _____

1. _____
2. _____
3. _____

Goals for Session 5

Date: _____

1. _____
2. _____
3. _____

Instructor Notes:



