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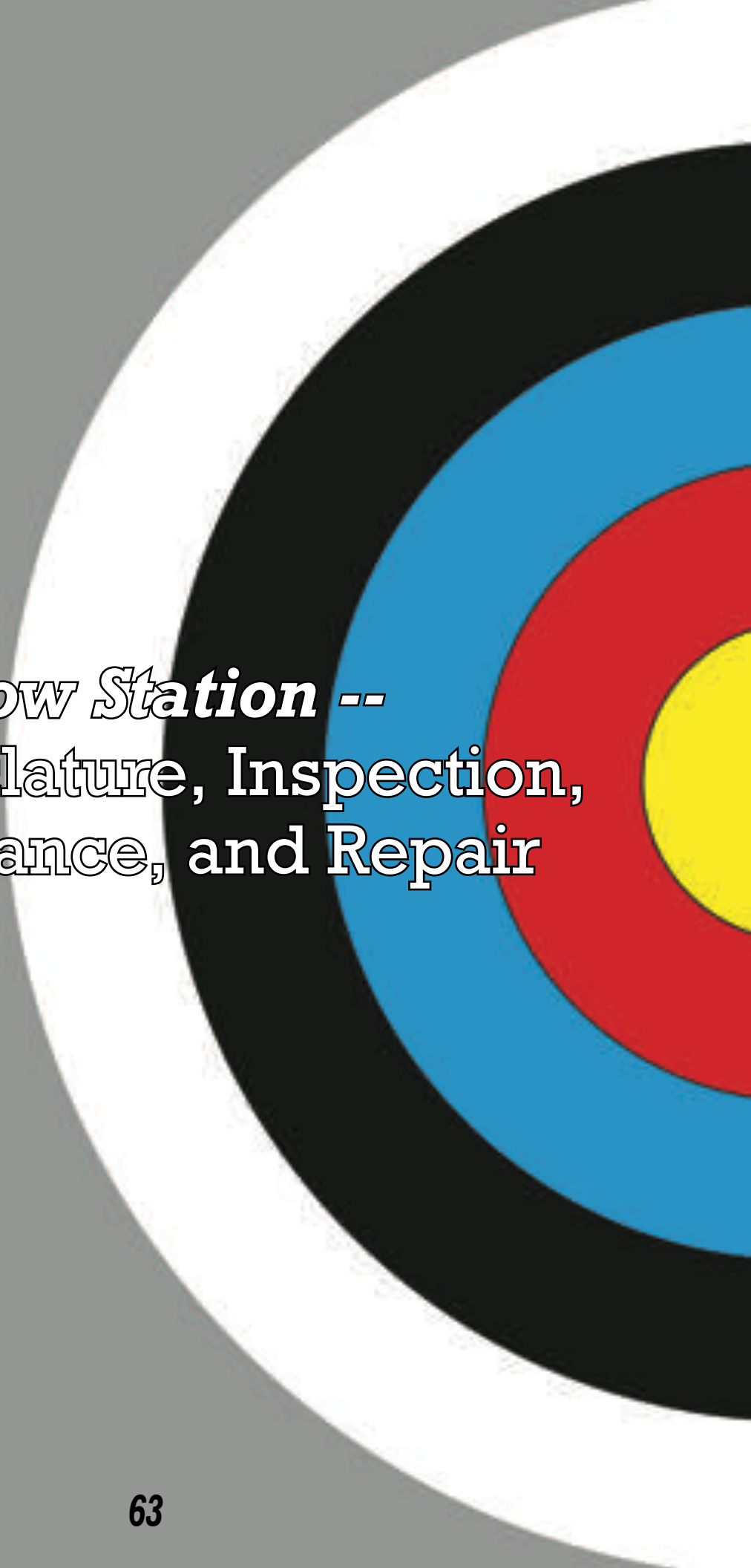

The Arrow Station -- Nomenclature, Inspection, Maintenance, and Repair

9 The Arrow Station -- Nomenclature, Inspection, Maintenance, and Repair

Lesson Objectives

Teach the names of arrow parts, inspection, and repair.

Classroom Application

This is a lesson generally put off until students have enjoyed a day or two of shooting.

Discussion

The only arrow authorized to use in NASP® is a full-length aluminum arrow made and marked specifically for the program. Aluminum is the arrow material of choice for use by youth in NASP® because of its superior safety features. Unlike wood and carbon shaft material, aluminum is very unlikely to splinter when hit by another arrow or upon hitting a hard object.

For safety and classroom management's sake every NASP® arrow is 30 inches (76 centimeters) long plus the point and nock. Whatever the size or age of student in NASP®, every archer shoots this same, full-length arrow. Because only one length of arrow is used, archers can be assured that each arrow is safe for use at their draw length.

As in the "Bow Station" chapter, it is also important to learn the parts of the arrow and to make sure arrows are in proper working order for the sake of performance and safety. Arrows should be inspected before every use, after shooting, and especially if something happens to an arrow that might have damaged it. If an arrow bounces off a target, hits a hard object, or strikes another arrow, it should be thoroughly inspected to determine if it remains safe to shoot. Arrows can have certain slight imperfections for a beginning archery class. Small nicks or holes in arrow vanes will have little impact upon the student's ability to learn archery skills. However, missing or badly damaged vanes should be repaired or replaced. Replace before shooting, missing, cracked, or bent nocks. Arrows should be retired if shafts are bent, cracked or badly dented.

This section covers aspects of arrow nomenclature, inspection, and repair. As with the bow, many instructors will be fully capable of handling most arrow repair needs. However, it is often helpful to develop a cooperative relationship with a local archery shop manager or neighborhood expert to help with these types of issues. Because these people enjoy archery, many will be eager to help you have successful archery classes. Many of these retailers also recognize your students as their future customers.

Materials Needed (figure 9.1)

- *Undamaged arrow*
- *Scissors*
- *Flat table top*
- *Arrows with damaged or missing vane and nocks*
- *Bent arrow and flat table top*
- *Replacement Push-in Nocks*
- *Replacement vanes of the color and length to match other arrows*
- *New Archery Products® replacement vane cartridge (3 vane sleeve)*
- *Vane glue*
- *Vane jig and appropriate clamp*
- *Scraping blade for removing old vanes and glue*
- *Denatured alcohol, 91% or higher isopropyl alcohol, or lens wipe*
- *Ajax® or Comet® cleanser*

Fig. 9.1

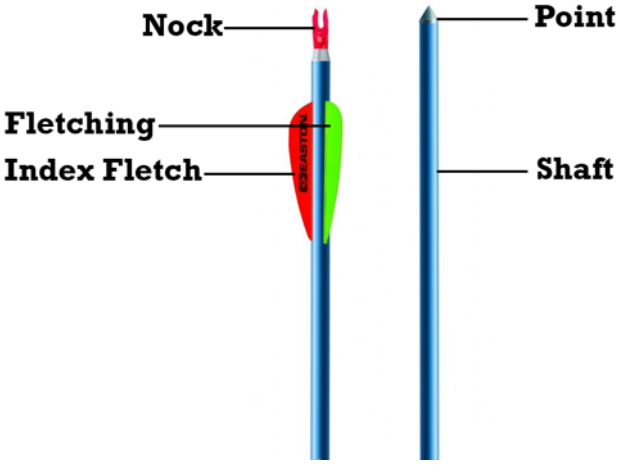

Fig. 9.2

Classroom Set-Up

Usually, the instructor will inspect and repair arrows before archery class and before students arrive. However, if the instructor wants to expose students to these concepts, the student might be motivated to take inspection and care of the equipment more seriously. Learning these skills will also make the new archer more self-sufficient.

If students will be present, they should be seated or standing around equipment station. The instructor should be careful that scraping blades, glue, and isopropyl alcohol are secured beyond student reach. If arrow vane repairs are being made, area should be well ventilated and heat sources should be kept away from glues and alcohol.

It is unnecessary for this lesson to take place on an archery range. For the sake of a safe classroom, bows should be put away during this lesson. Take care that everyone uses safe arrow handling technique when using arrows as props. In other words be careful that people are protected from the sharp nock and points ends of the arrows.

Conducting the Lesson
The Full-Length NASP® Arrow

Sample Introduction
"The title of this lesson is the 'Arrow Station'. The purpose of the lesson is to teach the names of arrow parts, how and when to inspect an arrow, and how to make certain, simple repairs. This is an important lesson for someone who wants to keep as many arrows as possible in safe, shooting condition."

The NASP® Arrow — Nomenclature
A. Have the students spread out so all can see the instructor. If the archery range is set up, have the students stand behind the waiting line.
B. If the class is small enough and safe spacing can be provided, each student or student pair can be provided an arrow to follow along as parts are named. Care must be taken to prevent harm caused by the sharp arrow point and nock.
C. The instructor should point to and name all the parts of the arrow. Students should follow the instructor by also pointing to and naming the part. **(Figure 9.2)**
D. As a review the instructor should again point to the parts while individual students name it.

The NASP® Arrow — Safety Inspection
E. The arrow should be inspected periodically to make sure it is safe to use. This should be done before the beginning of each archery class. The arrow should also be inspected if it misses or bounces off the target, hits a hard object, or strikes or is struck by another arrow.
F. During this lesson the instructor should show every student what a bent and or cracked arrow looks like. Such arrows should be removed from use. **(Figure 9.3)**
G. The instructor should also display arrows with missing, cracked or bent nocks. Such arrows should have their nock replaced before using. **(Figure 9.4)**
H. The instructor should display an assortment of arrows missing vanes, holes in vanes and flapping vanes. It should be explained that one or two holes in a vane will have minimal impact on the arrow's flight and is OK to shoot. However, missing or flapping vane should be replaced before using. **(Figures 9.5)**
I. The instructor should also note that every arrow should have a point. A pointless arrow will damage targets and will fly erratically.

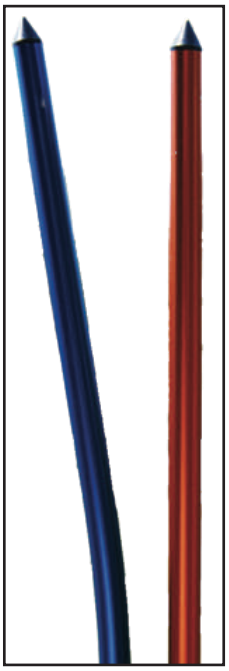

Fig. 9.3

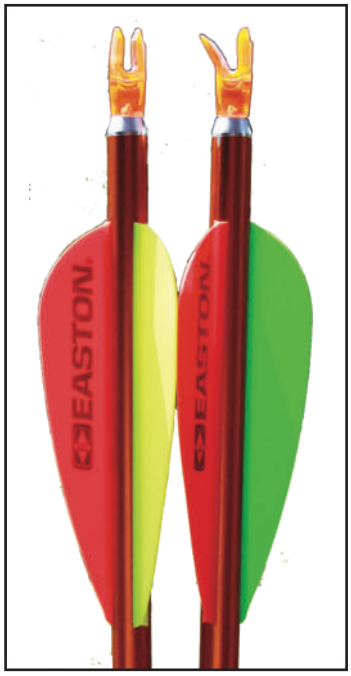

Fig. 9.4

Fig. 9.5

Arrow Nock: A cracked, bent or broken nock can result in a dry-fired bow on the next shot. An arrow with a damaged nock should be repaired before shooting again. Beginning in 2010 NASP® began offering only arrows with push-in nocks. This type of nock is easily removed from an arrow, requires no shaft scraping, and requires no glue for reseating a new nock. If a push-in nock is missing or damaged simply pull it out and push-in a replacement nock of the same size. Glue should be kept off push-in nocks. **(Figure 9.6)**

After pushing in the new nock, make sure the nock's string groove is lined up with the index fletch. Examining an undamaged arrow will help to understand how the nock should be aligned with the index fletch.

Fig. 9.6

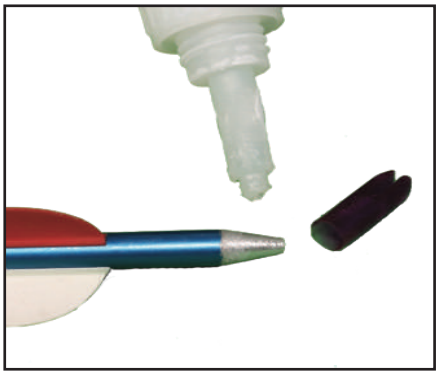

Fig. 9.7

Fig. 9.8

Removing a Glued on Arrow Nock

The object is to remove all of the plastic nock without damaging the end of the arrow. A couple of methods are provided below:

First try to simply twist the nock free with pliers.

A. If unsuccessful with the pliers use a knife to carefully flare the circumference of the bottom of the nock from the shaft. Then with pliers twist the nock and it should come free.
B. Clean by scraping any glue or plastic residue from the area where a new nock will be glued.
C. Place a small drop of glue on the arrow shaft instead of in the nock **(Figure 9.7)**. Place the new nock over the nock end of the arrow shaft and twist completely around to spread the glue. Make sure to align the notch of the nock with the index vane before allowing the glue to dry.

Arrow Fletch: If a vane is missing, flapping or has large holes or tears, it should be replaced. At short distances practiced in NASP®, the arrow will generally fly okay even with a single small hole in one or two fletches. A small tear can be cut out using scissors to make a "v" at the tear. **(Figure 9.8)**

If the fletch is to be replaced follow these steps:

A. Carefully remove the damaged vane along with all vane and glue residue. A special vane removal tool may be acquired for this purpose or a dull knife may be used taking care to protect the shaft from damage.
B. Clean the shaft with a lint-free cloth and denatured or 91% or greater isopropyl alcohol. If stubborn residue exists on the arrow, Ajax® or Comet® cleanser can be used to better clean it. Then, use alcohol for the final wipe down of this area to make sure all dust, hand oils, and water are removed from the shaft before attaching another fletch. Rubbing alcohol is an inferior substitute for isopropyl because it

contains skin moisturizers and will leave an unsightly film on the shaft and prevent adequate fletch attachment.

C. Using vanes of the same material and length, place the vane in the clamp of the fletching jig. If you are replacing an index vane, the jig should be properly aligned. Apply a tiny continuous bead of fletching glue to the vane's attachment surface. Be careful to prevent touching these gluing surfaces to keep finger oil from weakening the glue joint. The arrow's shaft should be placed in the fletching jig. Then set the clamp with the vane and glue on the jig-mounted arrow shaft. When the glue has dried remove it from the jig. Placing a small drop of glue at the front and back of the vane where it attaches to the shaft will help keep the vane from peeling up at these corners. Many modern types of vanes have special coatings on surfaces that will receive glue. It is important to keep from touching or otherwise soiling these areas so glue will adhere properly.

D. In 2015 NASP® and New Archery Products® worked together to design a 3-vane sleeve that can be used to quickly replace all three vanes of a NASP® arrow. Instructions for applying this replacement vane system are provided in **Figure 9.9**.

Arrow Point: If the point is missing, bent or badly flattened, it can be replaced. The point has been glued on with either epoxy or hot-melt glue. The epoxy joint might be difficult or impossible to break. Candle heat may be applied to the point end to relax the hot-melt joint and maybe break the epoxy joint. When the point has been removed replace it by reapplying hot-melt glue or epoxy to the point and re-insert. Wipe off any excess glue.

Fig. 9.9

Checks for Understanding

Why do all student archers in NASP® use a full-length aluminum arrow?

When should arrows be inspected?

What are the advantages of a push-in nock over a glue-on nock?