Building Shipping Crates

AAZK Conference 2013
Resources

• International Air Transport Association (IATA) Manual
Resources

• Pages 332 – 333 were references for the impala crate shown in the following images.
Antelope Shipping Crate:

• This is based on the requirements of the IATA.
• Interior dimensions set by the keepers’ requirements for the particular animal to be shipped.
**Antelope Shipping Crate:**

- The sides and tops have 1” wide slots that are covered with a wire mesh called hardware cloth.
Antelope Shipping Crate:
• There are guillotine doors on both ends of the crate.
• For added security, lockable hasps are attached to the doors.
**Antelope Shipping Crate:**

- Only one of the doors is required to have a food and water hatch.
- The hatch provides a way to give the animal food and water without having to open the guillotine door.
Antelope Shipping Crate:
• The slots provide plenty of ventilation.
• The slots also provide good visibility into and outside of the crates.
Antelope Shipping Crate:

• To help prevent injuries, the sharp edges of the hardware cloth are covered with a wood frame.
Antelope Shipping Crate:
• View of the top of the crate showing the 1” ventilation slots.
• 8” corner brackets are used throughout to help stabilize the crates.
Antelope Shipping Crate:
• Crate handles are positioned so that keepers can more easily pick them up and carry them.
• For comfort, the handles are rounded using a ½” radius bit.
• The handles are attached to the frame of the crate allowing a comfortable gap between the crate and the handles.
Antelope Shipping Crate:
• Ventilation holes covered with hardware cloth.
• The 2 x 2 frame lifts the crate so that, if necessary, the crate can be mechanically lifted.
Antelope Shipping Crate:

• Screws are used throughout to insure solid construction.
Antelope Shipping Crate:
• The base is made of ¾” exterior grade plywood
• ½” slots are routed in the base through which urine and feces can go.
• The edges of the slots are rounded using a 1/8” radius round-over bit.
• The slots are also spaced wide enough apart as to provide adequate footing for the animal.
• To protect the plywood, spar urethane is applied to both sides of the base.
Antelope Shipping Crate:
• The bottom is solid to catch the urine and feces.
• The bottom also has several coats of spar urethane to help protect the wood and make cleaning easier.
Antelope Shipping Crate:

• For easier cleaning the base can be removed and hosed off
Antelope Shipping Crate:
• Flat head stainless steel screws are used to secure the base to the bottom frame of the crate.
**Resources**

• This manual is used when an animal is transported by trucks or other container vehicles.

• This was the reference for the crane shipping crate.
Crane Shipping Crate

• The crane shipping crate is not required to have as many ventilation slots as the impala crate; Nor is it required to have the food and water hatch.

• There is only one door on this crate.

• For shipping purposes the door is secured with wood screws driven into the frame.
Crane Shipping Crate

• The ventilation holes are rounded using a ¼” radius round-over bit.
• The black ventilation mesh is to help keep the bird calm.
Crane Shipping Crate

• Angle brackets are attached to the frame to provide stability.
• The door guides are beveled to help the bird enter and exit the crate.
• The inside corners have beveled supports.
• The back has a window covered with hardware cloth and a curtain to allow keepers to periodically check on the bird.
• The keepers added the cushioned material to the top and bottom of the crate.
Crane Shipping Crate

• Screws are used throughout construction of the crates
Crane Shipping Crate

• Better view of the ventilation holes and the beveled door guides
**Tools Needed**

• The edges of the slots and/or holes are rounded over using an 1/8” or ¼” radius bit as shown.

• Using a rounding over bit smoothes the edges but also helps eliminate a lot of sanding.
**Tools Needed**

- The top bit is a $\frac{1}{2}$” radius bit used for rounding over the edges of the crate handles.
- The bottom bit is an 1/8” radius bit used to round over the slots and holes.
Tools Needed

• View of a plunge router with a ½” straight bit used to cut the slots in the impala crates.
Tools Needed

• Jig used with the plunge router to guide the router when cutting the slots in the doors of the impala crate.