

Packing and Crating Basics: Basic Standards and Vocabulary

December 12, 2018

Meg Colbert
Director of Production
Boxart, Inc.
meg@boxart.com



Packing Methods for Flatworks

Flatworks include:

- *Framed works*
 - *Glazed and unglazed*
 - *Ornate frames and standard museum frames*
- *Works on paper*
- *Unframed canvases*

Trays for Various Types of Flatworks:

Trays are used as interleaving material when packing single or multiple flatworks into a single crate. The tray acts a rigid surface that both provides support to the flatwork, but also allows for a surface that pads (usually fabricated from Ethafoam) can be adhered to.

Trays are generally made out of the following materials:

- Foam core
- Cardboard
- Acid free cardboard

Depending on the type of flatwork, the orientation of the trays (and the crate) will vary.

Top Loading Trays

- Top loading trays are used for works that need to ride flat
 - *Pastels, charcoal or graphite works, and books are examples of the types of objects that might need to ride flat on a tray.*
- In general, most top loading trays will have a full border of foam, usually Ethafoam.
- The full border on a top loading tray creates structure for other trays to sit on top of; this minimizes pressure on individual objects.
- Generally, the object should be centered on the tray.

FIG 3

TOP LOADING TRAYS

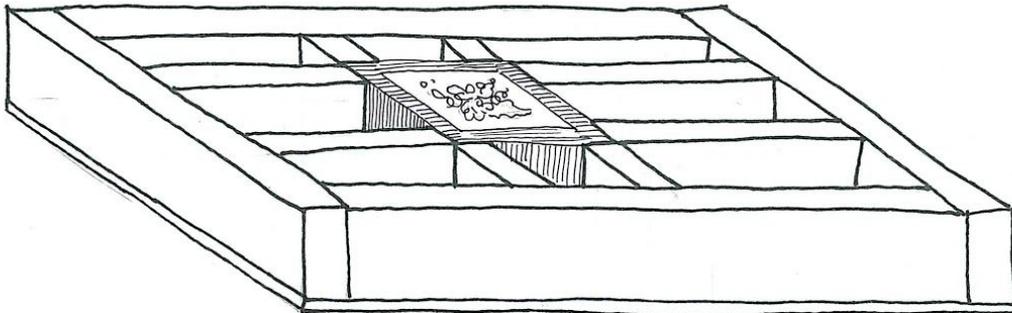
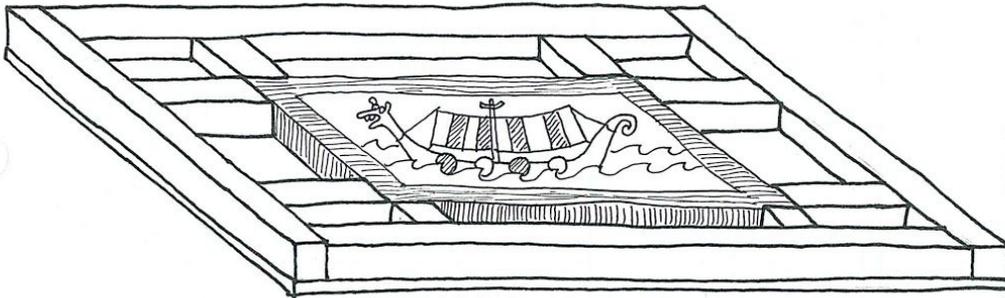
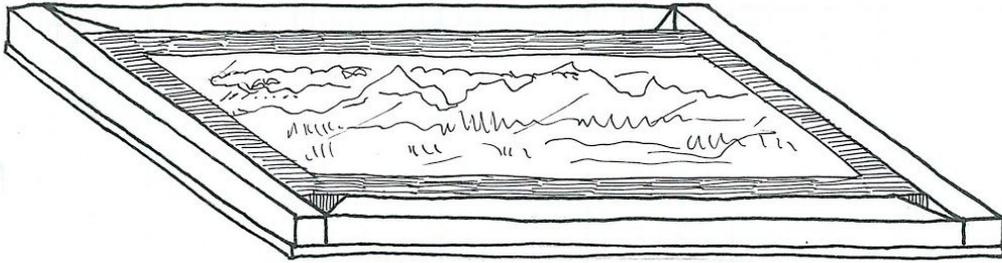
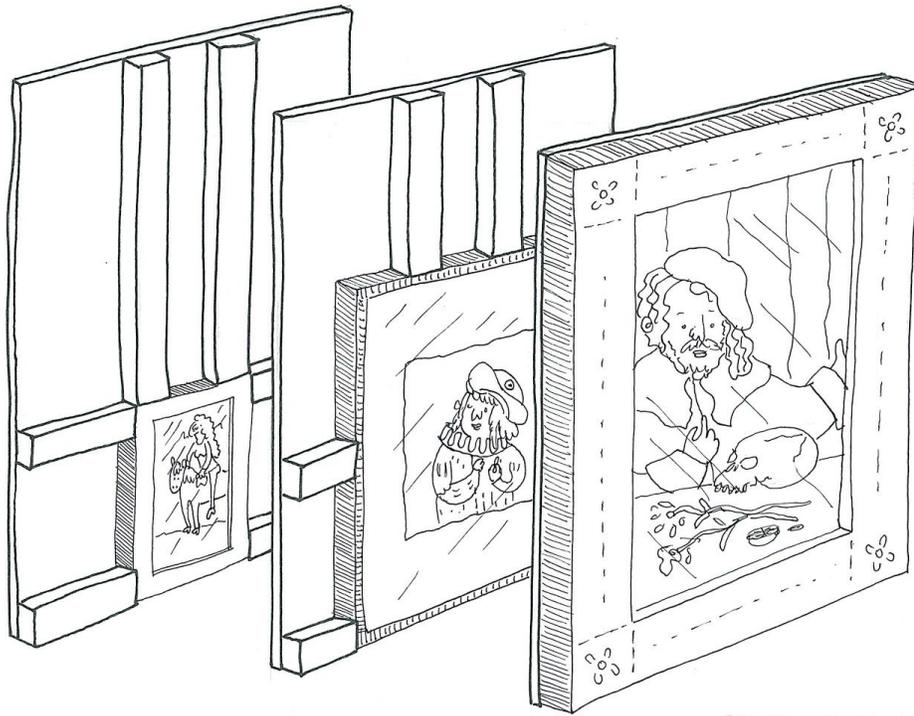


FIG. 2



FRONT LOADING TRAYS

Front Loading Trays

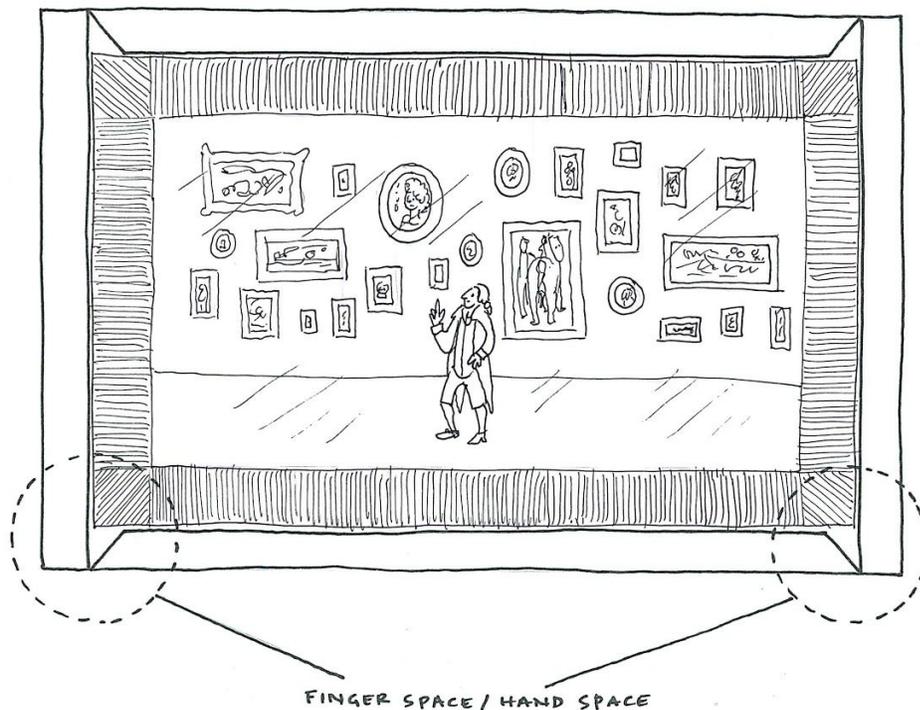
- Front loading trays are packed vertically or horizontally
 - *Framed works such as photographs, drawings, paintings, etc. may ride in a vertical orientation.*
 - *Generally, works on glass will ride in front loading trays, with the exception of pastel or charcoal works under glass, which should usually ride flat to prevent media loss.*
- Front loading trays are for art that should travel in the orientation that it “hangs on the wall”.
- In some instances, artwork will be rotated to ride on its side. This will usually be because of a height restriction for shipping.
 - *If an artwork needs to be rotated onto its side for shipment, it must be confirmed that it is safe to do so, and that the piece is adequately secure (i.e. not hinged) in its frame.*
- The art on each front-loading tray should be aligned with the bottom of the tray, as it is oriented in the crate.

Hand Space on the Tray and in the Crate

For trays that have a full border, as in top loading trays, there should always be hand space provided. This discourages over-handling of the object, and allows for the object to be placed and removed easily.

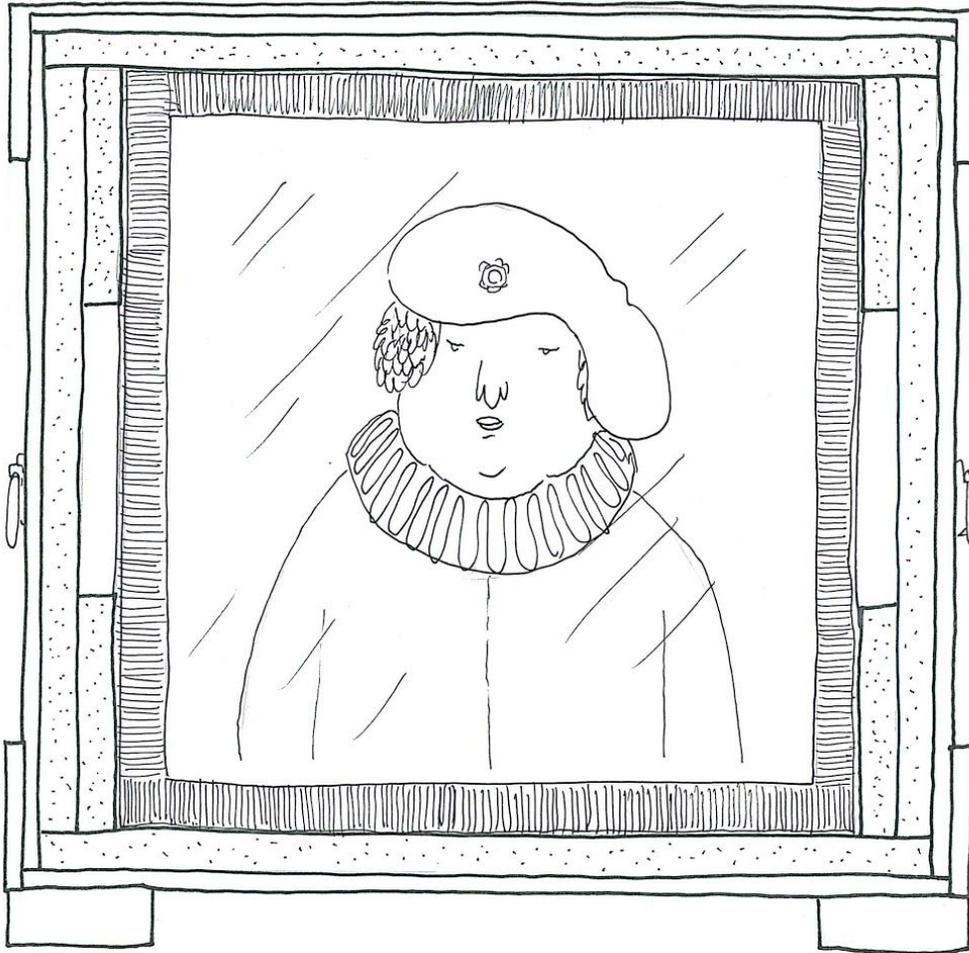
FIG 4

HAND SPACE ON A TOP LOADING TRAY



If there is no hand space on the tray, as in a situation where the artwork is the same size as the tray which is going in a fully foam-lined crate, hand space should be allowed for in the crate.

FIG 5



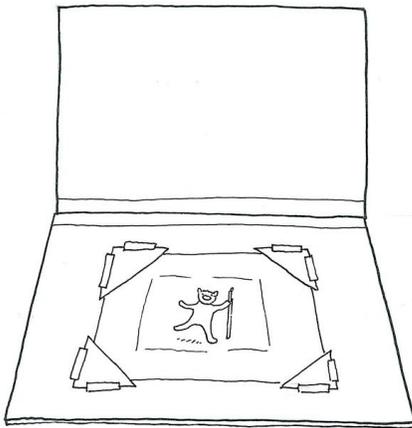
HAND SPACE FOR A FRONT LOADING TRAY IN A CRATE

Portfolios for Unframed Works on Paper, Printed Media, Etc.

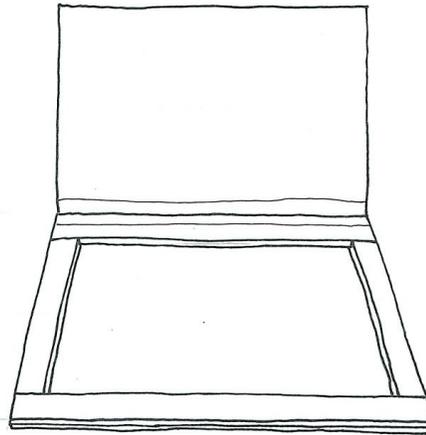
- Portfolios provide a safe handling and transit solution for unframed works on paper, printed media, unframed photographs, etc.
- Portfolios can be made from foam core, acid free cardboard, or regular cardboard.
- A portfolio with a hinged lid is made to hold a work on paper and can be packed onto a tray, into a slot, or into a crate directly. It is generally ideal for portfolios to ride flat, though it not always necessary that they do.

FIG 7

TYPES OF PORTFOLIOS



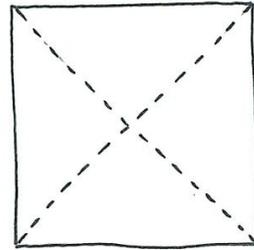
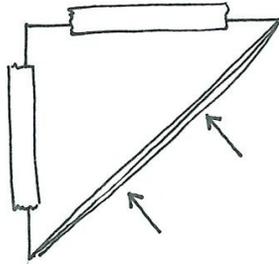
HINGED PORTFOLIO



HINGED SINK PORTFOLIO

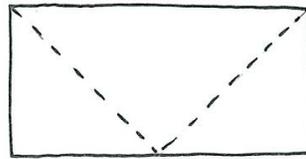
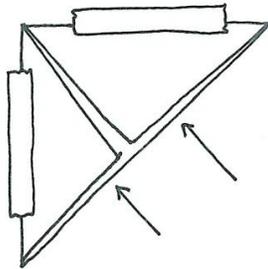
FIG. 6

a.



FOLD PATTERN

b.



FOLD PATTERN

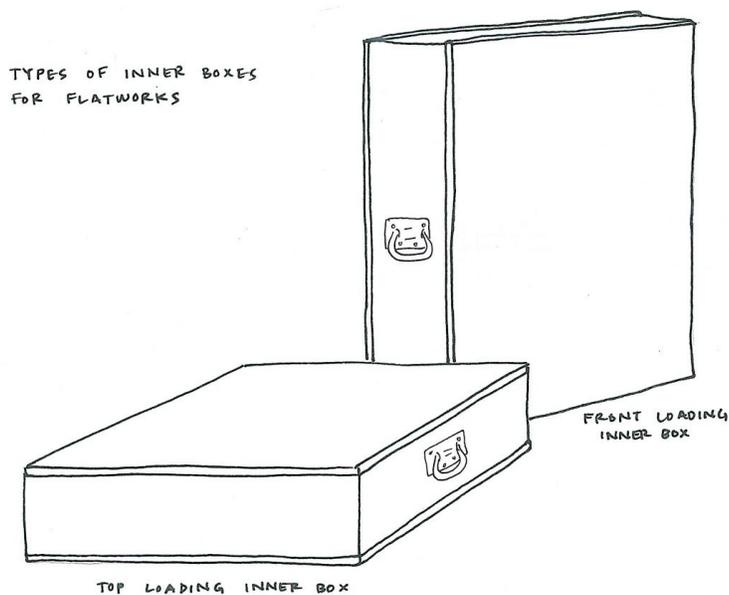
TYPES OF PAPER CORNERS FOR PORTFOLIOS

- Works inside portfolios will generally be held in place with “corners”. These corners can be made from hard Tyvek, Glassine, or any other type of archival paper. The corners themselves are usually adhered to the portfolio using artists tape, though other types of tape, such as fabric tape or double-sided tape may be used.
- Depending on the type and number of objects being housed in the portfolio, interleaving material (such as Glassine or silicone release paper) may be used in between each piece.
- A “Sink Portfolio” will have a border that provides for some depth of the piece being contained within.

Inner Boxes for Flatworks

- An “inner box” is a box made of wood, or other materials, that is packed inside an outer crate. Often, the outer crate will be fully climatized and lined with insulating foam, while the inner box is not.
- There are some situations where certain flatworks may need the extra protection of an inner box. This may be for handling needs, or because the piece or its frame are especially fragile or ornate.

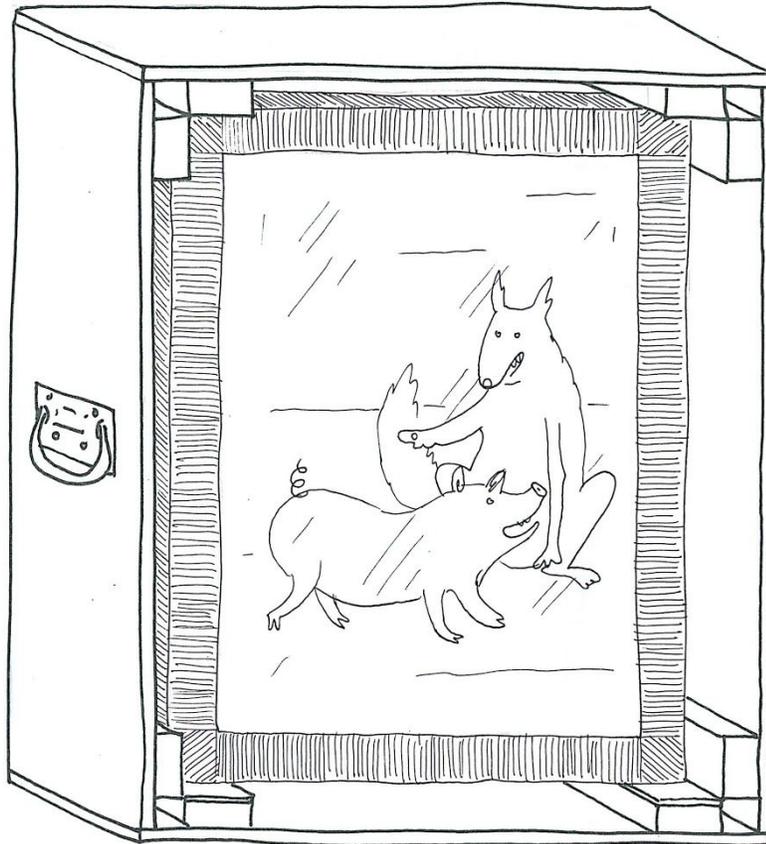
FIG 8



- An inner box will generally be constructed from wood, using a combination of plywood and either pine or poplar, depending on size and materials constraints. Some inner boxes may use a lid and/or back that is constructed from a combination of either pine or poplar and Coroplast. The Coroplast's corrugation allows for some airflow within the inner component.

Interior Treatments for Inner Boxes

Fig 9

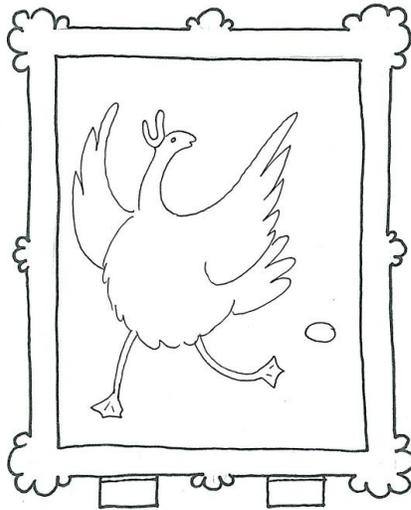


INTERIOR OF INNER BOX FOR FLATWORK

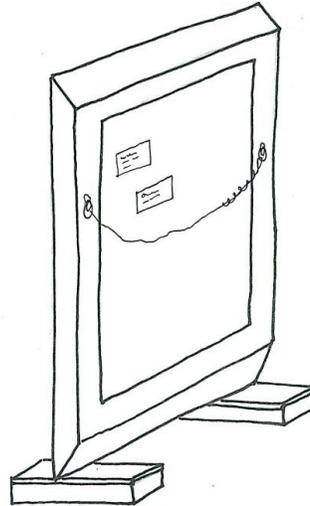
- In general, inner boxes (and crates) that are not fully lined with Esterfoam or U-foam will get strips of 2.2 Ethafoam on all sides.

- If the artwork to be packed is heavy, the bottom pads may be made of 4.0 Ethafoam, often with a rigid material such as HDPE or Masonite to prevent the piece from sinking into the foam.

Fig 10



PADS WITH RIGID MATERIAL AVOID ORNATE AREAS



PADS WITH RIGID MATERIAL HELP PREVENT SINKING ON A BEVELED FRAME

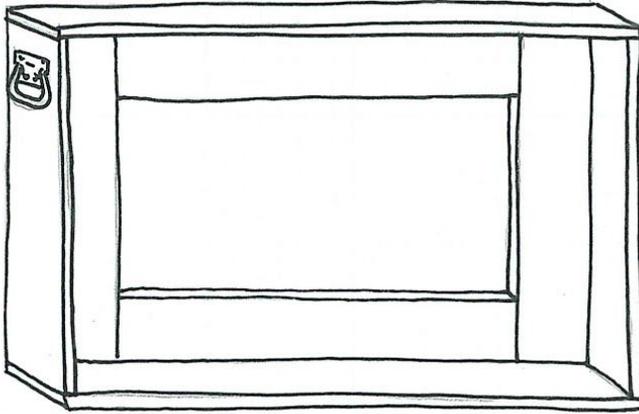
- The entire bottom of the inner box may be lined with Esterfoam or U-foam and a rigid material to prevent sinking.

Travel Frames

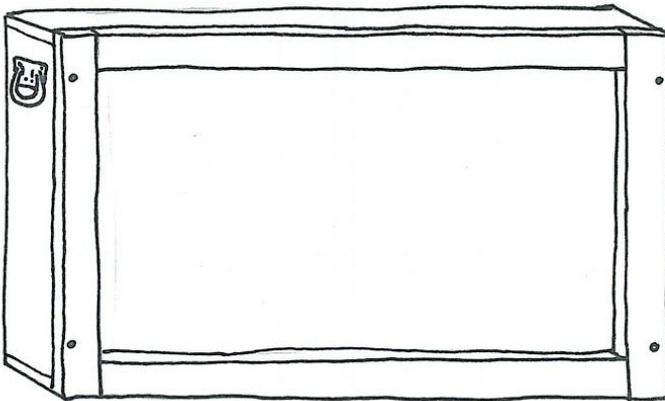
- Travel frames provide a handling and shipping solution for those works that:
 - Are unframed
 - Have surface protrusions that cannot be touched
 - Extremely delicate or ornate frame or structure, or are an unusual shape
- Travel frames are generally constructed out of pine or poplar, and may have front slats, or a lid lined with Coroplast.

FIG 11

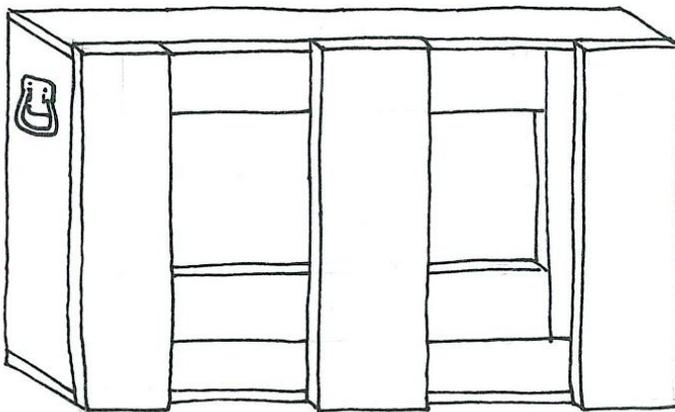
TYPES OF TRAVEL FRAMES



NO LID



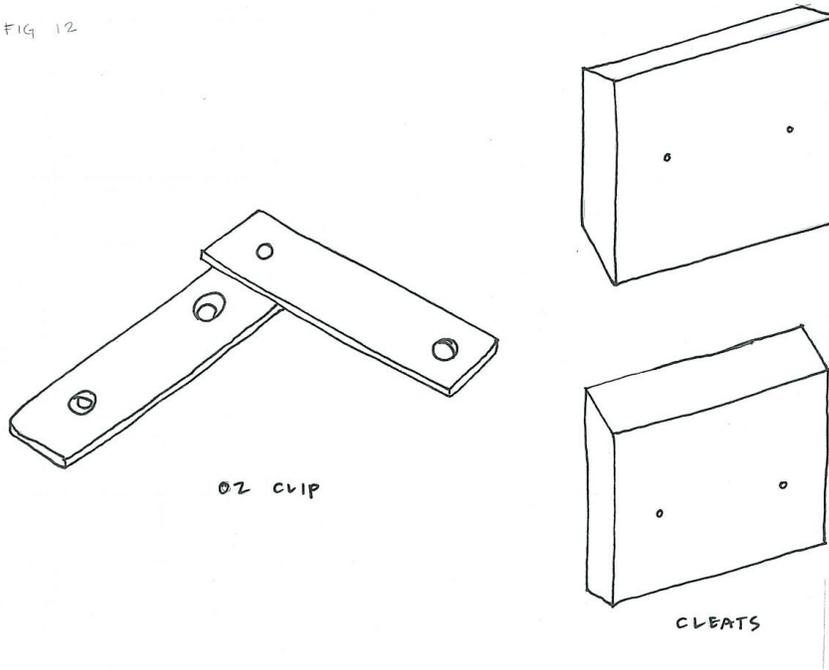
WITH LID



WITH SLATS

- Typically, the object will be mounted into the travel frame using Oz Clips™ , although Oz Clips™ are not the only method of mounted the object in the travel frame. Cleats, sliding braces, and bolts are also options.

FIG 12



Both travel frames and inner boxes can travel in front loading crates, top loading crates, or slot loading crates.

Packing Methods for Sculptures and Other “3 Dimensional Objects”

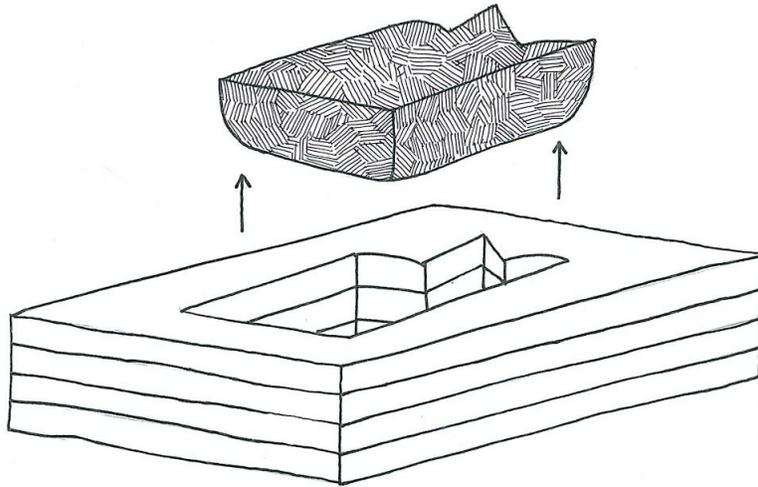
Cavity Packing

One recommended method to pack very fragile, ceramic, or glass objects is the cavity pack.

- Cavity packing involves cutting a cavity into multiple layers of Esterfoam or U-foam that contours to the shape of the object.
 - *Objects made from silver should never directly contact Esterfoam as it can cause them to tarnish rapidly.*

FIG 1

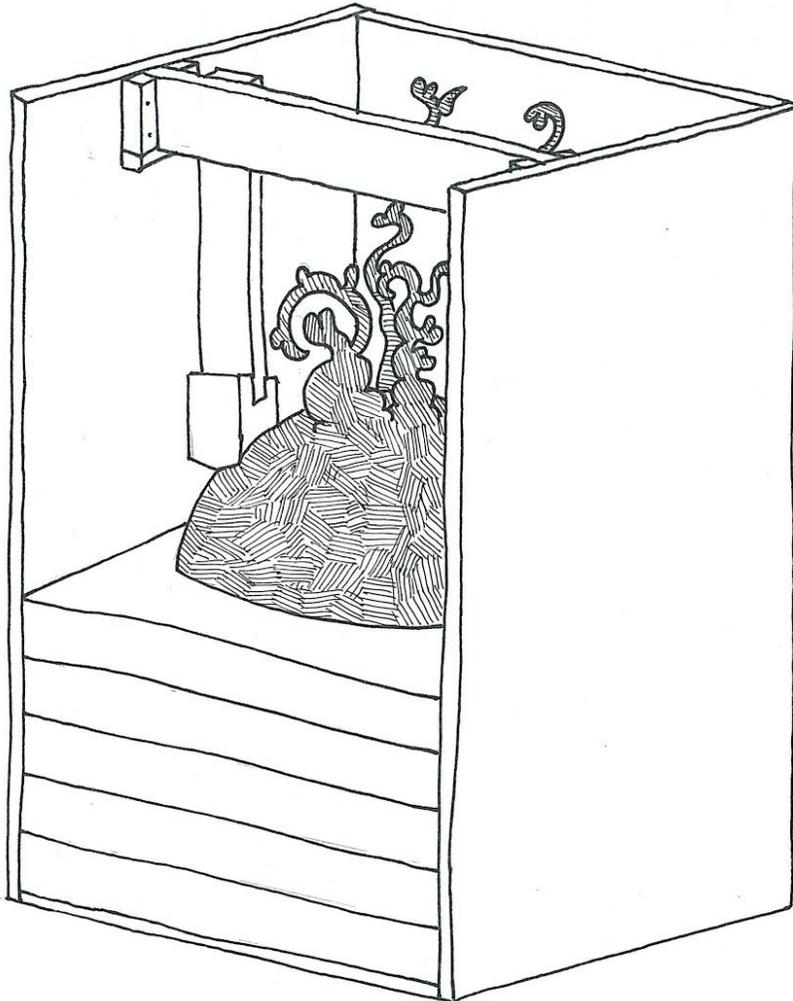
CAVITY PACK



Lined Cavity Packs

- Often, cavity packs will be lined with a material that provides a smooth surface for the object to sit against.
 - Soft Tyvek is a material that is often used to line cavities; it should be avoided as a material where the object has a delicate patina where the soft Tyvek could leave an imprint.
 - Some cavities may be lined with acid free tissue; alternatively, rather than lining the cavity, the object itself can be wrapped in tissue.
- A half cavity pack allows the top half of the art to be braced or padded with more specific pads. This is usually recommended when the object being packed has a very fragile and ornate top half.

FIG. 19



HALF CAVITY PACK

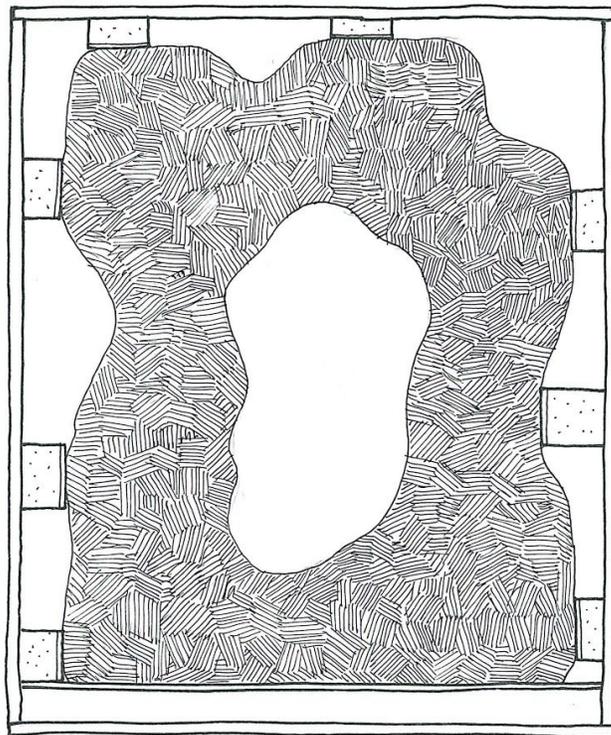
- Cavity packs should allow for hand space to encourage proper handling of the object whenever possible.

Inner Boxes for Sculptures and other “3 Dimensional Objects”

Wooden inner boxes can provide extra protection for delicate sculptures, aid in handling, and allow for brace-packed objects to be housed in fully climatized crates.

- Depending on the shape of the object, it may be possible to pad it into the box with the pads (usually Ethafoam) glued directly to the walls of the box.

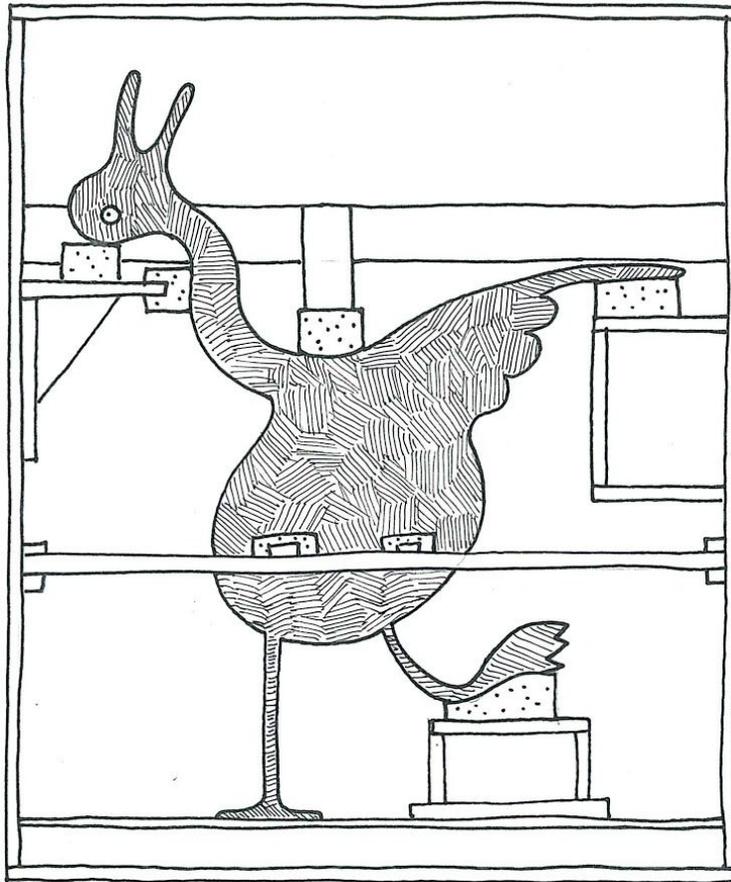
FIG 20



SCULPTURE PACK WITH NO BRACES

- If the object has a highly irregular shape, a combination of wood braces and Ethafoam pads should be used. The use of wood braces is called “brace packing”.

Fig 21



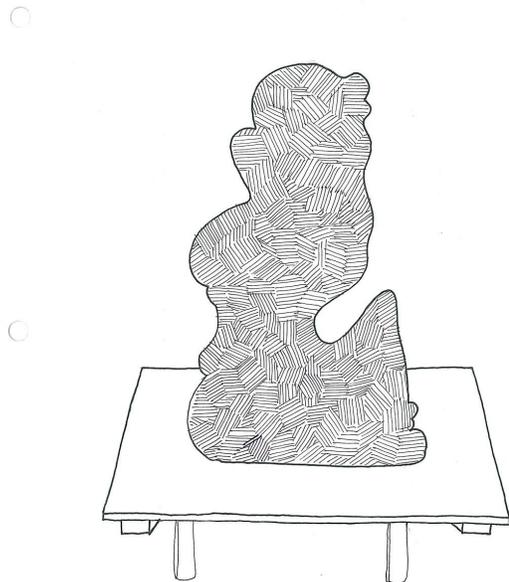
SCULPTURE PACK WITH BRACES

- There are two types of brace packs: “screw-in brace packs” and “track brace packs”
 - Screw in brace packs use removable braces that are secured by screwing them in (usually from the exterior of the box or crate). This is an appropriate solution for crates or boxes that are only traveling to one or two destinations. Over time, with repeated installation, screw-in braces may shift, or the screw holes may strip out making the brace less stable.
 - Track braces function like screw-in braces, but instead of being screwed into the walls of the crate they slide into permanent tracks that are installed on the walls of the crate or inner box. This allows them to be removed and reinstalled many times, and is an appropriate solution for an object that will travel to multiple destinations.

Sculpture Trays

- Sculpture trays are made out of plywood and are used for objects that are very heavy and may need to be moved using mechanical equipment (i.e. forklifts or rigging) or objects that should not be handled directly.
- An interleaving material, such as rigid HDPE or acid free cardboard, can be adhered on the tray between the plywood and the object.
- Sculpture trays should have skids that allow for hand space when lifting the tray. These skids can also allow room for the forks of a forklift.

Fig 22



SCULPTURE TRAY

Types of Crates and Their Features

There are many types of crates, whose features can be mixed and matched, depending on the object's needs, the budget of the institution, and the type of shipping involved. Below are some common crate standards, with various features explained more in depth.

- Fully climatized museum quality crate:
 - Will be fully lined with Esterfoam, U-foam.
 - Will have battened sides constructed out of either 3/8" or 1/2" plywood and 3/4" pine battens.
 - *Plywood used to construct a crate should **never** be less than 3/8" thick.*
 - May have an inner component
 - Will have end blocks and a rain cap

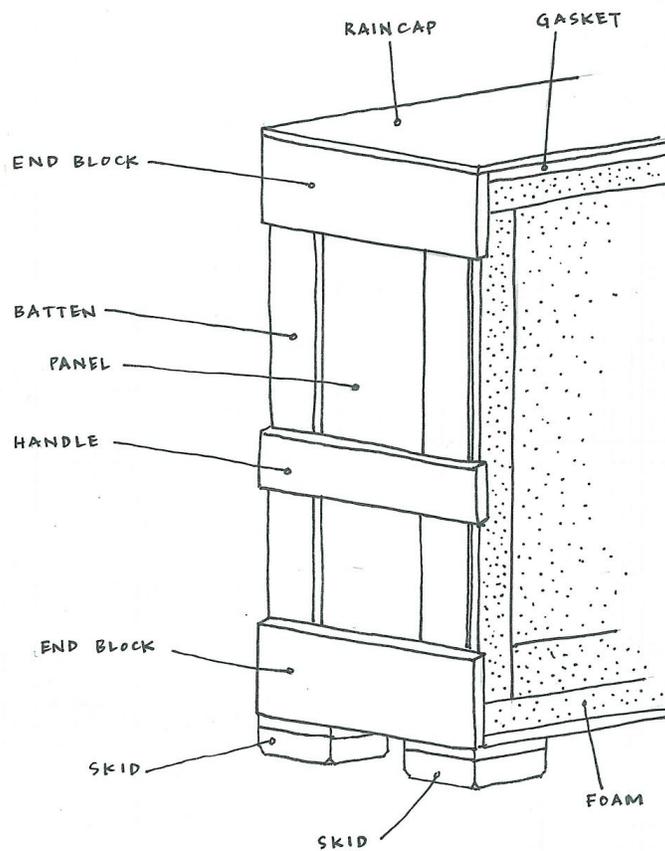
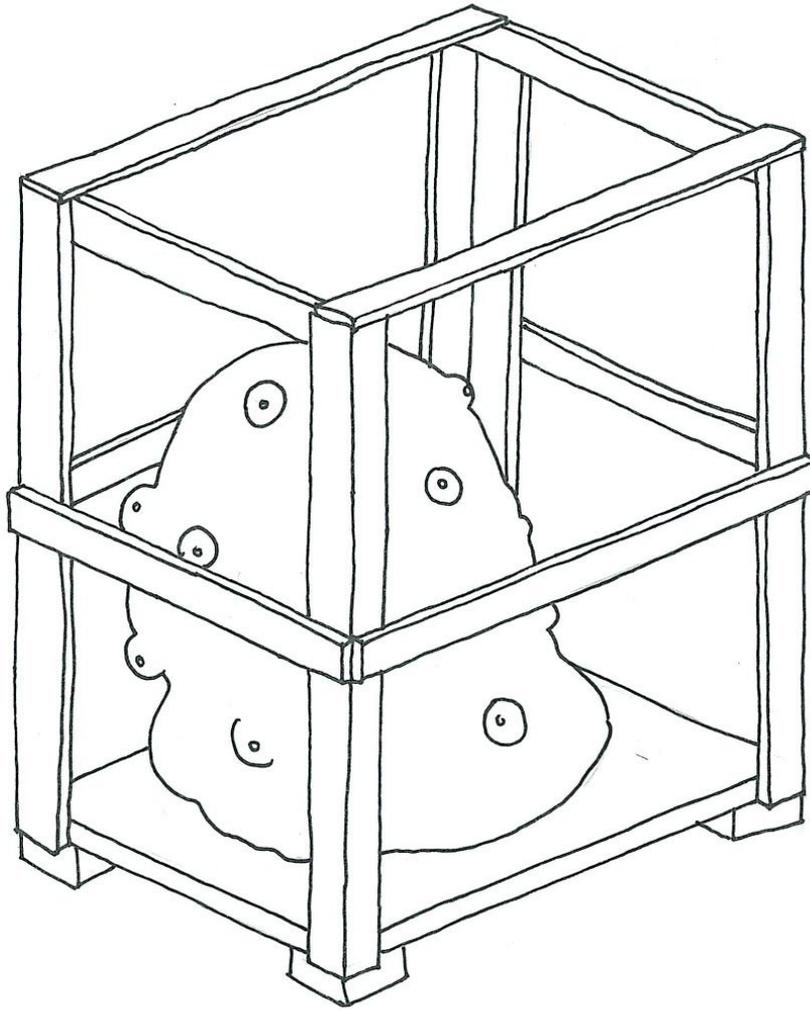


FIG. 25



SLAT CRATE