

# JUST PAINT

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Research Focus:

## SAFE HANDLING AND TRANSPORTATION OF ACRYLIC PAINTINGS

When artists create paintings their focus is typically on issues of aesthetics. Concerns over the substrate, ground, painting materials and the overall durability or integrity of the work are typically either built into the working style, or not. Usually, last among the concerns for the work is its stability in regards to its storage and/or shipping. An

artist may have looked at any given painting hundreds of times to assure it meets certain criteria of the show, event, or new owner; but, in order for the work to survive, it is critical to look at the work from the unusual perspective of the mover. How fragile is this work? How heavy is it? What are the dimensions? Are there any special concerns for this object that need to be considered?

Successfully transporting artwork hinges on several key factors. Understanding what sort of things can go wrong and what precautionary measures must be taken, will greatly reduce potential problems.

Paintings constructed with acrylic artist paints seem indestructible compared to many more delicate painting mediums such as gouache, watercolor, encaustics and tempera, or drawing mediums such as pastels or charcoal. The common understanding of the advantage of acrylic paints over oil is that they will not suffer the problems caused by oil paints' embrittlement over time. Under most conditions, acrylic paintings remain flexible and are able to withstand considerable abuse. It is just this sense of ease of care that artists have presumed, which has led to carelessness and caused significant problems when transporting or moving acrylic paintings.

There are many helpful resources for artists to consult before packaging and transporting

works. This issue of Just Paint offers some excerpts from these resources. The purpose of this article is not to recreate those resources, which are rich with examples and suggestions, but to examine some of the significant issues with works completed in acrylic that may not specifically be covered in this compilation of literature. A resource list is included at the end of this article for invaluable references regarding appropriate care when moving and storing acrylic paintings.

### PRACTICAL CONSIDERATIONS

*(or the disclaimer up front)*

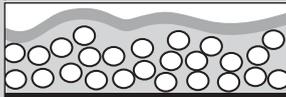
This article is organized starting with the most protective of all the packaging techniques, crating. This is done to call specific attention to best practices; realizing that artists more often than not find other creative ways to transport work. Best practices are provided for these other methods as well, with the important caveat that none of these methods is without risk. As one moves down the ladder of best practices, the risk significantly increases that something untoward may happen to the work.

### *What is being protected?*

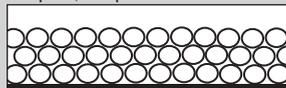
Acrylic paintings have several unique attributes that create value as a fine artists' medium, but these attributes can also be significant factors for concern in addressing the

### THE FOUR STAGES OF ACRYLIC DRYING

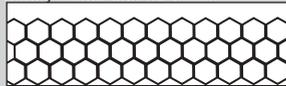
Stage 1 - Initial evaporation, paint still workable



Stage 2 - Solids become more compact, evaporation slows



Stage 3 - Solids form a continuous honey-comb like structure



Stage 4 - Final evaporation forming a continuous film



\* Critical properties such as adhesion, hardness, clarity and loss of tack are not completed until the film is fully cured.

\* An acrylic film is at its greatest risk during this curing process.

Figure 1

packaging and moving of the paintings. Under most environmental conditions, acrylic paintings are very flexible, which dramatically reduces the potential for cracking in most situations, yet the price paid for this flexibility is a softer film; one that can be scratched, scuffed and marred easily. This is even more of a challenge when working with very matte or underbound acrylic paintings (meaning overloaded with pigment or other solids, exceeding the critical ratios of pigment to binder). Another property of this flexible paint surface is the relative permeable nature of the waterborne acrylic. This property allows for dirt or pollutants to become embedded (especially in a fresher film). Finally, the most significant property of the acrylic film (again especially representative of fresh films) is the potential tackiness of the surface.

The nature of the acrylic surface leads to one inevitable conclusion: that for an acrylic painting, it is critical to protect the painting's surface. This is probably obvious to every reader so far, but as opposed to oil paint films in which the greatest danger is fracturing the painting's film, protecting the acrylic painting does require at least some different considerations. Although protecting the painting's surface must be the primary directive for packing and shipping acrylic paintings, it does not provide for all the necessary considerations.

Acrylic paint films become brittle at low temperatures, usually around 40° F. Transit by air freight or in unheated trucks in cold winter weather can result in cracked paint films due to vibration during transit. The obvious way to prevent this problem is to ship in a temperature controlled truck. In the case of shipment by air, steps must be taken to assure that the paint layer does not vibrate during transit. The use of a rigid backing

board will sufficiently dampen transit vibrations.

### PHYSICAL CONSIDERATIONS OF ARTWORK

*How a painting is constructed is crucial in determining the potential methods of transportation.*

A canvas can be transported either stretched or unstretched and therefore, it's important to consider the consequences of both. A rolled canvas may ship more easily and cost efficiently, but when it arrives it will have to be unrolled and re-stretched - both actions may damage the artwork. Rolled, the surface is seemingly protected, yet in this condition, care must be taken to avoid the potential of the painting surface picking up fibers in the overlying canvas. If the stretched canvas is to be moved, the surface and back must be protected and the corners must be able to sustain an impact from handling. Additionally, if the work is transported in cold weather, provisions must be made for reducing shock to the painting surface. These issues will be addressed later in the article.

A panel painting or works attached to rigid board will also need the surface and corners protected and although it is significantly protected from vibration, it will have to potentially withstand other objects being stacked on top of it.

*The age of artwork is also of importance during moving.*

While acrylics dry very quickly, they can take much longer to fully cure. Film thickness, materials used and environmental factors determine the time required for paint films to cure. An uncured acrylic film will be softer and more prone to blocking and ferrotyping, while an older, more fully cured piece will be less prone to damage.

### THE IMPACT OF PAINT FILM CURING DURING SHIPMENT

There are four stages involved in the drying of acrylic paint films (See Figure 1). The first stage is the initial evaporation of water occurring at a linear rate, throughout which the paint remains wet and workable. The second stage begins as the acrylic solids in the film become more compacted. In the third stage of drying, the acrylic polymer solids - more or less spherical in shape - begin deforming as a result of capillary action caused by the flow of water to the surface, thus eliminating interstitial area and forming a continuous, honey-comb like structure. At this point, the paint film feels dry to the touch. The last stage of drying involves the final evaporation of water and coalescing solvent, particle compaction, along with chain entanglement of the polymer solids, forming a continuous film. Critical properties such as adhesion, hardness and clarity are not completed until the film is fully cured. (For more information about acrylic film formation, refer to the GOLDEN "Technical Notes on Drying" Information Sheet). An acrylic film is at its greatest risk during this curing process.

If the artwork is shipped before the paint has been allowed to fully cure, several negative situations can occur. Since the paint film is still developing, it has the greatest chance of adhering to anything and everything with which it comes in contact. Packing materials such as glassine and cardboard can become permanently bonded to the paint surface. Two paintings facing and in contact with each other can easily become bonded together, most likely resulting in the damage of both surfaces. Additionally, a fresh paint film is more likely to attract dirt and dust particles that will potentially become permanently embedded in the paint film.

Thick paint films can develop

cracks and crazes during excessive movement while curing. Cold temperatures can harm the film formation process and may even result in early delamination. Temperatures below 49° F do not allow for the proper alignment and deformation of the polymers.

A paint film retains its shape as it cures. If a partially cured painting is rolled up for shipping and stays rolled while the film cures, it will be very difficult to level out the canvas when unrolled. This rolled film will be more likely to crack as it's unrolled, especially under lower temperatures. Folded paintings would suffer even more so.

### PACKING ARTWORK FOR SHIPPING

A new set of parameters is created each time artwork is transported. Ideally, the best shipping method for any acrylic painting is one where nothing is allowed to touch the surface of the work. It cannot be stressed enough that most damage in shipping occurs because something came in contact with the painting surface, causing one or more of the following types of damage:

#### *Ferrotyping*

- The transfer of texture from the packing materials to the surface of the painting.
- Sheen alteration in high spots.
- Unwanted texture created on smooth surfaces, or the reverse.

#### *Back and Forth Movement Across the Painting Surface*

- Marring
- Burnished matte surfaces
- Physical loss of paint
- Blocking/Materials adhering to the surface
- Paper, plastic and other packing items physically attaching to the painting surface.
- Attempting removal may pull up paint or harm substrates.
- Most likely permanent damage

#### *Cracking*

- This generally requires sharp impact to substrate or surface at temperatures below 45° F.
- This can also occur when a painting, still drying, receives a gentle impact.

If you want your paintings to have the best chance for longevity, put each painting into its own packing container. This eliminates the opportunity for surface contact, assuring a greater chance that the artwork will arrive without impairment. Careful planning and packing will increase the likelihood that the support will also remain undamaged. Of course, this is also the most expensive means of packing and transport, and admittedly, artists are forced to make significant compromises in shipping. Yet it must at least be an important

- Provide handles for lifting and moving
- Survive a multi-venue tour without compromise of any of the above functions

#### *Case Dimensions and Size Limitations*

The volume of the case depends on the size and number of paintings to be packed, thickness of thermal insulation and thickness of cushioning materials used. The type and amount of foam materials to be used in the packing case must be determined prior to case construction. There are limitations to the size case that can be accommodated by transport vehicles. For dimension and weight requirements contact your local transportation service.

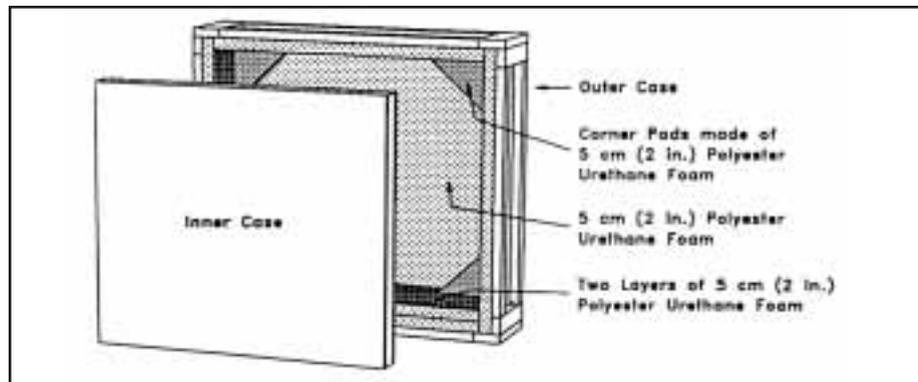


Figure 2, *Art in Transit Handbook*, National Gallery of Art, Washington

consideration before going to lesser protective methods.

### PACKING CASES FOR ARTWORK

For a packing case to be most effective, it must fulfill these functions:

- Support the painting, insulation and cushioning foams
- Protect the contents from impact and puncture without serious distortion
- Maintain a sealed environment
- Protect against intrusion of moisture

#### *Case Materials*

The majority of cases are still constructed from plywood, which has inherent advantages over aluminum and fiberglass. Plywood has a high strength-to-weight ratio, provides some insulation, some relative humidity buffering, and is relatively inexpensive.

#### *Puncture Resistance*

If plywood is used as a construction material, the thickness of the plywood has a considerable effect on the puncture resistance of the sides of the case. Plywood thicknesses between 3/8 inch and

# RESEARCH FROM THE GOLDEN LABORATORY

## *Rolling Artwork for Transportation*

### Cracking Tests Conducted at 35 Degrees Fahrenheit

	1/8-3/16 Inch Painted Surface In	1/8-3/16 Inch Painted Surface Out	1/8-3/16 Inch Painted Surface In	1/8-3/16 Inch Painted Surface Out	1/8-3/16 Inch Painted Surface In	1/8-3/16 Inch Painted Surface Out
Roll Diameter in Inches	1.5	1.5	4	4	6	6
Regular Gel (Gloss)	3	2	0	0	0	0
(HB) Ultramarine Blue	5	5	5	5	0	0
(HB) Quinacridone Red	3	0	0	0	0	0
(HB) Burnt Umber	4	3	2	1	0	0
(HB) Dioxazine Purple	0	0	0	0	0	0
(HB) Mars Yellow	1	3	0	0	0	0
Matte Burnt Sienna	5	4	4	4	0	0

**Table #1** shows the effects of unrolling an acrylic film wrapped on 1.5 inch, 4 inch and 6 inch cores at 35°F (28% humidity).

Separate films were originally rolled facing in as well as facing out to see the resulting effects on potential cracking.

Test strips were either ½ or 1 inch wide, 250 ml thick (approx. ¼ inch wet film).

Note: Degree of cracking rated from 0 - 5. 0 = No observable cracks, 5 = Severe cracking. (HB) = GOLDEN Heavy Body Paint

Although the effects of rapid loading or impacting the acrylic paint film has been thoroughly studied by Mecklenburg et. al., often overlooked by artists is the effect of rapidly unrolling a canvas, which has been subjected to colder temperatures.

Recently GOLDEN Laboratory Technicians conducted tests to

obtain results that might provide practical implications for artists transporting rolled canvases. Tests included samples of aged acrylic films, which were rolled onto various diameter cores. Several different colors (pigment loads) and mediums were rolled both compressed (paint film in) and extended (paint film out). Multiple

unrolling tests were conducted on these films at various temperatures (49, 35 and 13 degrees F). Although tests included some cores at 6-inch diameters, most of the tests were run at the more severe 1.5 and 4 inch diameters. The paint films were well aged, ranging from 3 to 9 years old. Unrolling was conducted at approximately 1

1/2 inch are typically found on small-to-medium sized cases, up to 72 inches long. Plywood thicknesses up to 3/4 inches are found in the larger cases.

### **Impact Resistance and Structural Rigidity**

The construction methods of the case, particularly where materials are joined, have a significant effect on the strength as well as the rigidity of the case. A case having edges and corners that are well joined can have over ten times the strength and one-hundred times the rigidity of a case that has corners and edges that are poorly joined. It is recommended that the edges and corners be both screwed and glued together.

### **Provisions for Lifting**

For cases light enough to be

lifted by one or two people, hand-holds should be provided on the case. For cases requiring mechanical means for lifting, such as forklifts, blocks (skids) should be provided that allow the forklift tines to slide under the case. (See Figure 2)

### **Case Stability and Topple Resistance**

Large packing cases containing a single painting can be high and narrow. This can make them unstable and prone to topple even if slightly jarred. Provisions should be made to prevent such accidents.

### **VIBRATION AND SHOCK PROTECTION FOR CANVAS PAINTINGS**

#### **Backboards**

It is advisable to attach backboards to the reverse of all paintings to reduce the potential of damage caused by puncture,

vibration and shock.

- A stiff backing board will enclose an air cavity behind the painting. As a consequence, the painting's tendency to vibrate is reduced due to the stiffening effect of air trapped between the backboard and the reverse of the painting canvas.
- A flexible backboard may have limited effectiveness. Relatively stiff materials are best for backboards, or securing the center of a flexible backboard to the cross braces on larger works.
- Large stretchers usually have crossbars. Several small pieces of the backboard material should be cut and attached to each open rectangle bordered by crossbars and outer stretcher members, if possible.

**Cracking Tests Conducted at Varied Temperatures**

	1/8-3/16 Inch Painted Surface In 49 Degrees F	1/8-3/16 Inch Painted Surface Out 35 Degrees F	1/8-3/16 Inch Painted Surface In 13 Degrees F
Roll Diameter in Inches	1.5	1.5	4
Regular Gel (Gloss)	4	4	5
(HB) Naphthol Red Lt.	--	--	5

**Table #2** shows the effects of unrolling 250 ml (approx. 1/4 inch wet film) paint films at various temperatures. *Note: Degree of cracking rated from 0 - 5. 0 = No observable cracks, 5 = Severe cracking.*

**Cracking Tests Conducted at 13 Degrees Fahrenheit**

	1/8-3/16 Inch Painted Surface In	1/8-3/16 Inch Painted Surface Out	1/8-3/16 Inch Painted Surface In	1/8-3/16 Inch Painted Surface Out
Roll Diameter in Inches	1.5	1.5	4	4
Regular Gel (Gloss)	4	4	5	--
(HB) Naphthol Red Lt.	--	--	5	3
Matte Naphthol Red Lt.	--	--	5	4

**Table #3** demonstrates that all thick films showed severe cracking when unrolled at 13°F and 39% humidity. (The resulting films were so stiff it required two people to unroll the canvas.) *Note: Degree of cracking rated from 0 - 5. 0 = No observable cracks, 5 = Severe cracking.*

inch per second. The acrylics were able to elongate without cracking when tests were conducted at much slower rates (other than extreme freezing).

The results were as one might expect. Films wrapped around the larger cores had significantly less cracking (Table 1). Notably, the

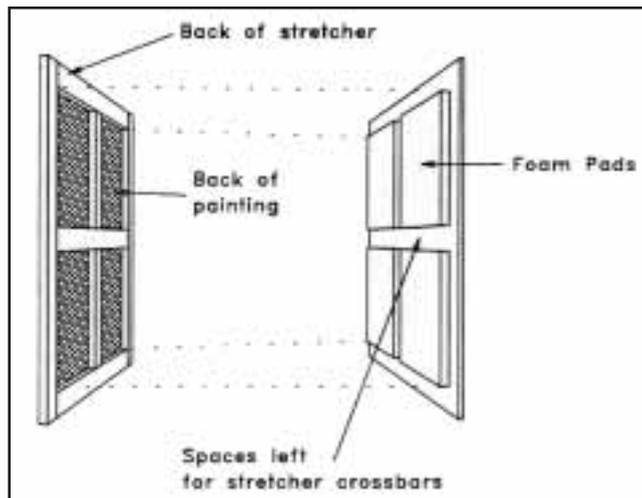
films wrapped around the 6-inch core had no cracking in the 35° F test. Also expected, were the results showing the colder the temperature, the more prone the rolled acrylic film was to cracking (Table 2). The tests also confirmed that films showed less quantity and severity of cracking when the rolled

paint surface was facing out. The greatest differences occurred between pigmented and non-pigmented coatings, again confirming the results one would expect from the studies by Mecklenburg et. al. Colors with a high pigment load were significantly stiffer and therefore showed considerably more cracking when unrolled at 35° F. The tests in Table 3 conducted at 13° F showed some specific anomalies. As suggested again in the Mecklenburg papers, acrylic gains significantly in tensile strength as the film gets colder. The paint films were so hard it required two staff members to unroll the film. Not only did the paint film shatter, but enough force was required to also shatter the cotton canvas.

**Backboard with Foam**

During handling and transport, slack canvases on large paintings can strike the crossbars of the stretchers. This can be avoided by attaching pieces of foam to the backboard. (See Figure 3)

- The foam should be very close to the back of the canvas without actually touching it.
- A low-density polyester urethane foam works well because it is soft and relatively lightweight. Polyester urethane foams are not chemically stable and should not be left behind the painting for extended periods. Many factors affect the rate of the foam's deterioration, making it impossible to estimate how long the foam can stay behind the painting.
- The foam can be attached to the backboard with double-stick tape or hot glue. The foam must be



*Figure 3, Art in Transit Handbook, National Gallery of Art, Washington*

securely attached to ensure that there is no risk of it pulling away from the backboard and coming in direct contact with the canvas.

- The backboard should be secured to the stretcher with screws.

**Stretcher Lining**

Stretcher lining is a procedure developed by Peter Booth at the Tate Gallery for reducing the vibration of a canvas painting. It involves attaching to the reverse of the original stretcher a new piece of fabric, preferably a thin but exceptionally stiff fabric such as polyester sailcloth. The painting is not in any way disturbed. The procedure should not be confused with the process conservators call "lining," which is a procedure where the original canvas is adhered to a new fabric in order to strengthen it.

With the fabric in position,

there is less risk of crossbar-related cracks developing through impact, as a continuous surface, rather than the crossbar's edges, would be contacted. A further advantage has been demonstrated in vibration tests showing a marked reduction of canvas displacement in response to low-frequency vibration.

### **Method of Attaching the Stretcher Lining:**

- Cut a piece of fabric approximately the same size as the painting.
- Temporarily attach it to the back of the stretcher with a few staples.
- Cut out curved segments of the fabric to allow space for the crossbar(s) and wedges (stretcher keys).
- Remove the staples to free the material that should be folded and inserted between the canvas and crossbar(s).
- Once the fabric is unfolded and correctly positioned, attach fabric along the edges to the back face of the stretcher.
- Stretch the fabric while attaching it. (See Figure 4)

### **SHIPPING COLLAR**

Museums often use a shipping collar to protect their paintings. The wooden collar adds rigidity to the structure and a backing board can be attached to the back of the collar. The collar should project beyond the face of the painting so a rigid cover of foam core can be attached to the surrounding collar without touching the face of the painting. The entire package of collar, backboard, and face cover can then be wrapped in plastic without fear of damage to the painting surface.

### **SOFT PACKING**

One trend in art transportation that must be acknowledged is the increasing use of soft packing, as the cost of exhibitions and the

associated shipment of paintings increases. Soft packing is common for graphic works such as prints and drawings and the practice has spread from commercial galleries and artists to museums. Soft packing is the replacement of plywood sided cases, with one having cardboard or foam sides.

No work of art should be soft packed unless the institution is willing to risk major damage. Also, while there is extensive experience in soft packing, there has been little scientific research into how the best protection can be offered at minimal cost.

If soft packing is chosen, then it should be limited to local moves.

The National Gallery of Art recommends a wooden collar or travel frame should be attached to the reverse of the painting or frame for protection. Nothing should touch the surface of the painting. Any materials used to wrap it should be kept above the surface and made of non-abrasive materials. Foam should be used around the painting to offer temperature insulation and shock protection.

### **ROLLING PAINTINGS**

Of course, there will be times when rolling a painting is the only way to transport work, but the following tips can help minimize risks:

- Allow adequate time for the paint film to completely cure.
- Place an interleaf of polyethylene plastic no less than 4 ml thick

onto the surface of the canvas before rolling. It should be cleaned of release agents, dust and other contaminants. **Do not use bubble wrap, plastic wrap or thin plastics for this purpose, because they will likely ferrotypes the painting surface.**

- Roll and unroll paintings at room temperature. Rolling while cold may result in cracking, especially in thick paint films.
- Roll relatively loosely to reduce the risk of ferrotyping or adhesion.
- Roll with the paint film facing outward. Rolling with the paint film facing inward increases tension by causing compression of the paint film.

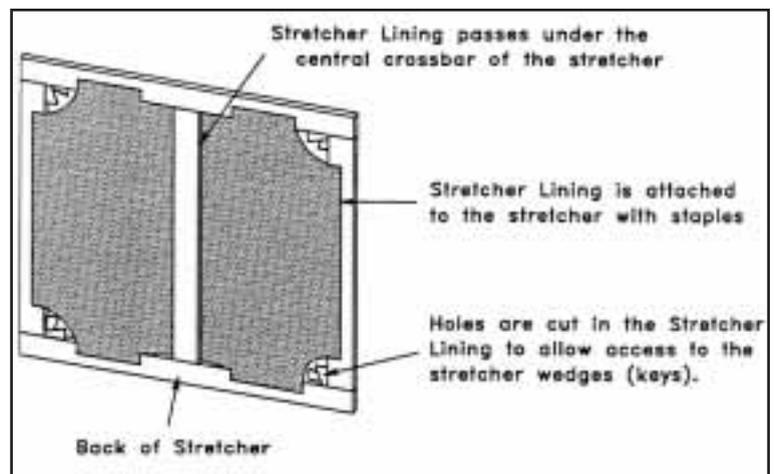


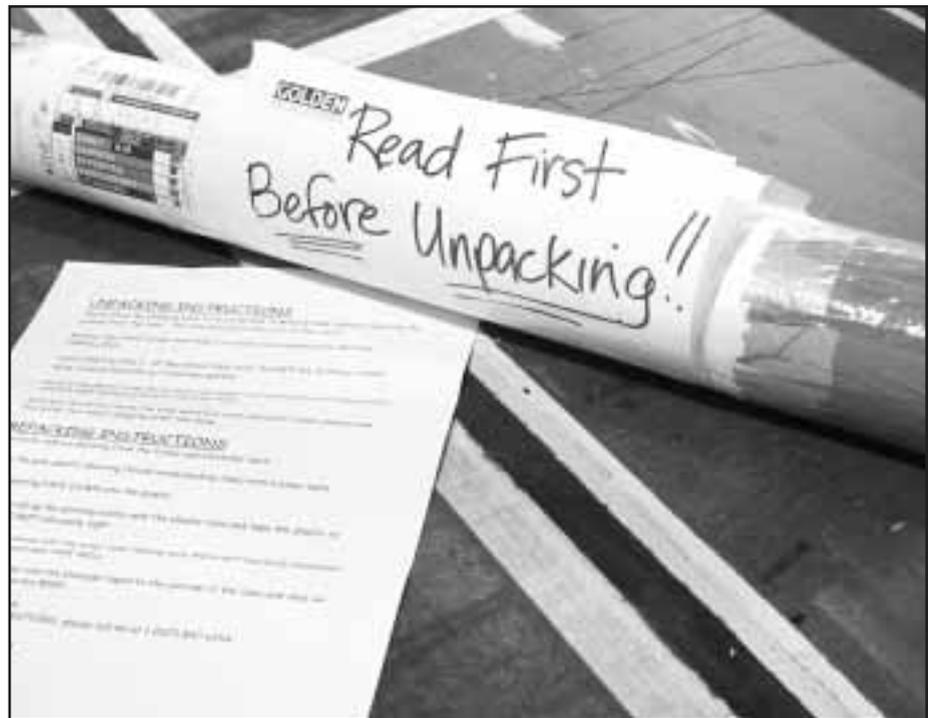
Figure 4, *Art in Transit Handbook*, National Gallery of Art, Washington

- Once packed, tape securely, but not too tightly.
- Roll up the canvas as evenly as possible.
- Use a cardboard core six inches or greater. Tighter rolling increases the compression of the film.
- Put the rolled canvas into a larger tube. Use additional packing material to assure that the inner tube fits snugly in the larger tube.
- Whenever possible, the tube should be kept upright to reduce weight on any one side. This is most important for large canvases.
- Do not store paintings rolled up for extended periods of time. Unroll the painting as soon as reasonably possible.

- Sonotubes® are a product used by many artists who roll their artwork for transportation. Sonotubes® can be found at [www.sonoco.com](http://www.sonoco.com).

### MARKING CONTAINERS AND UNPACKING INSTRUCTIONS

If the painting is going to be opened by someone other than the sender, an envelope with explicit instructions for unpacking and repacking should be securely taped to the outside of the container. The taped envelope should read, "*To avoid damage, read first before unpacking*," or something similar. These instructions become invaluable if there is a dispute about any damage occurring during shipping, unpacking or repacking after an exhibit. Be sure to urge that all packing materials be kept with the crate(s). Do not assume that the person who unpacks will be the same person to repack the artwork. If the painting is being shipped to another country, it's imperative that documentation in languages of those countries be used, so that an unwary inspector does not carelessly open a container without proper precautions. Check with all applicable agencies as to the preferred documentation.



### ARTWORK STORAGE AND TRANSPORTATION RESOURCES

While the risks and problems surrounding the transportation of art are formidable, they are not insurmountable. Education on this issue will allow transportation of artwork with minimum risk and expense. There are professionals dedicated to just this task and they may be hired if the artwork is sufficiently valuable. There is also literature that can give guidance in

this area. Some helpful resources are listed in this article.

If you have any further questions regarding this issue, feel free to contact the GOLDEN Technical Support Department at 1-800-959-6543 or go to [www.goldenpaints.com](http://www.goldenpaints.com).

## Resources: Safe Handling and Transportation of Acrylic Paintings

For further information see:

Peter Booth, "Stretcher Design: Problems and Solutions," *The Conservator* 13, (1989).

T. Green, "Vibration Control: Paintings on Canvas Supports," *Art in Transit: Studies in the Transport of Paintings* (1991).

P.J. Marcon, "Shock, Vibration, and the Shipping Environment," *Art in Transit: Studies in the Transport of Paintings* (1991).

Mervin Richard, Marion F. Mecklenburg and Ross M. Merrill. "Art in Transit," *Handbook for Packing and Transporting Paintings* (1991).

Jill Snyder, "Caring for Your Art," *A Guide for Artists, Collectors, Galleries, and Art Institutions* (2001).

# Insurance Considerations When Transporting Artwork

Something else to consider when talking about safe handling of artwork is transportation options. The transportation services most commonly used to transport works of art are road or air transit. Air transport is the most common, efficient and safe means of moving art over long distances, domestically or internationally. Choices include parcel services, such as those offered by the United States Postal Service, United Parcel Service (UPS), DHL, Federal Express (FedEx), and other private companies or commercial air freight carriers.

Many artists and institutions use these services regularly, without any complaint. Service is economical, convenient and prompt. However, restrictions on size, weight and insurance place limitations on artists that may not be suited to their art. Insurance in particular, is the gray area in which most problems occur.<sup>1</sup> Paying close

attention to declared value and limits of liability sections in FedEx and UPS Service Guides are a good protective practice.

According to FedEx, "shipments (packages or freight) containing all or part of the following items are limited to a maximum declared value of \$500:

1. Artwork, including any work created or developed by the application of skill, taste or creative talent for sale, display or collection. This includes, but is not limited to, items (and their parts) such as paintings, drawings, vases, tapestries, limited-edition prints, fine art, statuary, sculpture, collectors' items, customized or personalized musical instruments.
2. Film, photographic images, including photographic negatives, photographic chromes and photographic slides.
3. Any commodity that by its

inherent nature is particularly susceptible to damage, or the market value of which is particularly variable or difficult to ascertain."

According to UPS, articles of "unusual value" are prohibited from being offered for shipment. This definition explicitly includes "works of art."

We recommend shipping via FedEx and make sure that the value of your artwork is declared at the time of the shipment. If you are shipping something worth over \$500, you should ask your insurance company about purchasing additional insurance since FedEx doesn't offer insurance.

For further information, contact your local UPS or FedEx office.

<sup>1</sup>Snyder, Jill. 2001, 1990, 1996. Caring for Your Art. 145-146, 148-149.



The Sam & Adele **Golden Foundation** for the Arts, Inc.

In its ongoing effort to become a resource and significant contributor to the professional visual artist, The Sam and Adele Golden Foundation<sup>SM</sup> for the Arts, Inc., is in the process of creating a "Gallery" on the foundation Web site. The Web site will feature remaining paintings from the foundation's first silent auction. Twenty-nine recognized artists who are committed to helping the Golden Foundation grow donated paintings for the auction. The gallery will highlight the artists and their work and provide an opportunity for visitors to the site to purchase the paintings.

Jean-Marc Golden, a member of the foundation board of directors has generously provided his Web designing skills and expertise to help make the Web gallery possible. We invite you to visit our sales gallery at:  
[www.goldenfoundation.org](http://www.goldenfoundation.org).

During the first three years of accepting applications from visual artists, the Golden Foundation processed hundreds of applications. The Selection Committee, consisting primarily of artists and art professionals of distinction reviewed several thousand works. They had the highest praise for the quality of the work that was submitted.

In an effort to grow the endowment of the Foundation, the board of directors agreed to offer grants to artists and arts organizations in alternate years. In the year 2003, grants were awarded to professional artists working in paint. Next year, 2004, grants will be awarded solely to cultural organizations that directly support visual artists. The deadline to receive proposals from organizations is October 1, 2004.

For more information, please contact Lucy Tower Funke, Foundation Director at (607) 847-8158 or send an E-mail to [info@goldenfoundation.org](mailto:info@goldenfoundation.org).

# ASTM International:

## Providing the value, strength and respect of marketplace consensus

ASTM International is one of the largest voluntary standards development organizations in the world. The not-for-profit organization provides a global forum for the development and publication of voluntary consensus standards for materials, products, systems, and services.

Founded in 1898, the organization has over 30,000 members from 100 nations, including Golden Artist Colors, Inc. ASTM International's voluntary members are producers, users, consumers and representatives of government and academia. In over 130 varied industry areas such as metals, paints, plastics, textiles, petroleum, construction, energy, the environment, medical services and devices, and many others, ASTM standards serve as the basis for manufacturing, procurement and regulatory activities. ASTM Headquarters has no technical research or testing facilities; all the research work is done voluntarily by ASTM members located throughout the globe and members vote on all aspects of the tests, methods and standards.

More than 10,000 ASTM standards are published each year in the 73 volumes of the Annual Book of ASTM Standards. These standards and related technical information are sold throughout the world.

A few of the standards Golden Artist Colors, Inc. is helping the group research and test right now include the Tinting Strength Standard and the Ground/Primer Standard.

Tinting Strength is often thought of as one of the most important indicators of high quality artist's paints. ASTM D 4838 is currently the Tinting Strength Standard, but because

many manufacturers don't use it, the D01.57 Subcommittee of ASTM is currently working on developing a new method to use for testing the tinting strength of artist's colors in both acrylic and oil media. It has not yet been decided how this test method will be applied to labeling or product quality standards. For example, one alternative being considered is that a minimum tinting strength requirement be added to existing standards, such as D 5098, which is the Standard Specification for Artists' Acrylic Emulsion Paints. Alternatively, it may be possible to have a separate standard that manufacturers can choose to conform to.

"Round robin" tests are being performed at this time to test the proposed test method. A round robin test creates a dynamic where various laboratories will independently use the method and share their results. This gives the subcommittee valuable data and results from multiple independent labs to consider for the validity and feasibility of the test method. Round robin testing also verifies the repeatability and reproducibility of any test methods.

The Ground/Primer Standard is in many ways in its infancy. There is a wide breadth of information and testing to be researched and accomplished to have a fully comprehensible Ground/Primer method. The ASTM subcommittee is currently creating a strategy around the topic and assessing potential avenues to pursue. One interesting direction the Subcommittee is seriously considering is developing a standard that reads similar to an application guide or a "best practices" guide. With the expertise of artists, manufacturers and special interest groups like

conservation scientists and raw material suppliers, the Subcommittee functions as a well-rounded, knowledgeable team.

The Artists' Paints and Related Materials Subcommittee has about 45 voting members and 17 non-voting members, representing an incredibly diverse group of individuals, including artists, educators, conservators, medical doctors, chemists and other materials scientists, and representatives from art materials manufacturers, artists' groups, manufacturers of testing equipment, and regulatory agencies, resulting in a very unique group. This group has developed and published eleven standards, covering such topics as testing of pigments for lightfastness, labeling content, paint performance criteria, and the health hazard labeling of art materials. The group's mission includes the education of artists through the dissemination of information about the Standards. Furthering this part of the mission, the Subcommittee recently has commissioned articles for artists' magazines, to be written by Subcommittee experts. Topics include such issues as quality labeling of artists' paints, lightfastness testing procedures for the non-scientist and descriptions of current research on modern artists' materials, among many others.

The standards that this dedicated group of individuals has developed, have and continue to play a preeminent role in all aspects important to the industry, including classification, sampling, preparation, components, application, analysis, quality assurance, end-use performance requirements, and public health and safety.

# Technical Forum

Your Acrylic Materials questions meet technical expertise

Research Topic: Storage and Transport

Here are some questions and answers covered in the GOLDEN Technical support program. We hope you find this section informational and useful. While you are painting, if you come across a technical difficulty or question, please feel free to contact us for technical assistance at 1-800-959-6543 or go to [www.goldenpaints.com](http://www.goldenpaints.com).

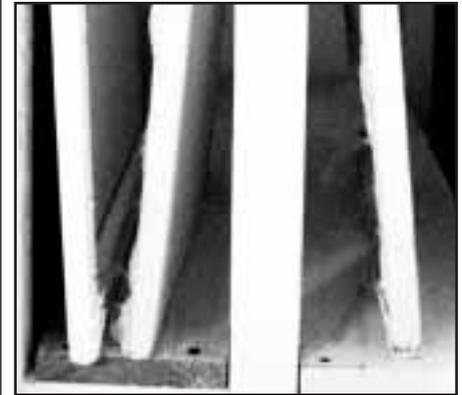
**Q:** *Is it a problem to cover the face of the canvas with glassine sheets, or will they stick when hot?*

**A:** The use of glassine (a thin, dense, transparent or semi-transparent paper highly resistant to the passage of air and grease) on acrylic can be a concern, as there are several factors, which should be addressed. First, it's important to allow the acrylics to have sufficiently cured to reduce their tackiness. The surface should not feel overly tacky and any clear gel medium films should appear to have lost their inherent milky appearance. Bear in mind that the thicker the acrylic paint film is, the longer it will take to dry. Secondly, the specific kind of glassine or release paper can make all of the difference. Finally, we have found that even with the better papers, the amount of weight or pressure can force the two materials to stick together. Therefore, avoid stacking multiple paintings on top of one another and avoid jamming too many paintings into a cabinet together. In short, it is always best to avoid allowing anything to touch the paint surface during storage or transport.

**Q:** *Can you transport acrylic paintings on canvas by rolling them and putting them in tubes?*

**A:** Ideally, shipping paintings with absolutely nothing touching the surface is the safest way to transport work. The main reason is to avoid something sticking to the surface or "ferrotyping" a sheen or texture to the painting's surface. However, we realize that sometimes it is unavoidable to ship a painting without something touching the surface, and our best recommendation is to use a thick polyethylene plastic to cover the painting. Most hardware stores carry the proper kind of plastic sheeting. Look for 4 ml or thicker versions, and try to find one without many folds or a texture. Rolls of smooth black or clear plastic can be found readily, but even these should also be cleaned before use. A non-streaking glass cleaner works well with a lint-free cloth.

Cut and clean a piece of the plastic as needed for the artwork, and lay it onto a CLEAN table or floor. Then lay the canvas face down onto the plastic. Next, using a cardboard or plastic tube of a reasonable diameter (minimum diameter 6 inches is recommended), carefully roll the canvas and plastic sheeting around the tube. Ideally, you don't want them rolled up too tightly, but also not so loose that they may slide around during shipping. Wrap tape around the rolled canvas near both ends and in the center. Avoid taping too tight as well. The rolled canvas should then be put into another larger tube for shipping. If necessary, use more plastic sheeting as cushioning.



*Storing paintings in vertical storage is desirable.*

Remember, this is for shipping only. You do not want to keep a painting stored like this because moisture can be trapped in the plastic and if the painting isn't completely cured, it can retain the rolled shape.

When shipping paintings in cold climates, be aware of the reduction of flexibility of the paint films. The main article of this Just Paint issue will discuss the proper unrolling techniques when the painting arrives at its destination.

**Q:** *I live in an area with high heat weather during the summers and at times, an occasional frost. I want to store my canvases in my attic upstairs, where it can be quite hot during the summers. We have attic fans that come on automatically to circulate air out. However, I know not to store acrylic canvases face to face due to softening in hot weather, but what else should I do to protect these pieces if I have to store them up there?*

**A:** This isn't the worst kind of storage. Storing the canvases so nothing is touching the surface is best (hang them if unstretched, stand them upright if stretched). Attics and other similar storage



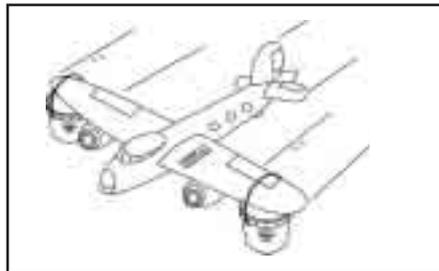
areas usually have a lot of dust. Acrylics can accommodate temperature fluctuations. However, it is critical that the work is not moved or hit while very cold. The danger to the paint film in warm weather is the softening of the paint film. This should not be a problem unless something comes into contact with the work's surface.

Take a section of the attic or barn that is free from water leaks and any other contaminants and create some simple framed-out areas that will accommodate paintings of the scale you normally work in. It's good to settle on the space you intend to use and then draft up some plans. Any unusual sized spaces will be filled with raw canvas and other pack rat items. Once the space has been framed out, then use heavy gauge plastic (comes in rolls at the hardware store) and tack it around the outside of the frame to reduce dust and bugs from settling on the paintings. If the space you selected has questionable walls, tack the plastic down before framing as well. Make sure not to cover the vent fans as you would still want some air movement.

**Q:** *I am painting an exterior mural overseas and I was wondering if there were any airline restrictions on taking supplies aboard the plane?*

**A:** Air travel in a post-9/11 world is different, whether traveling in America or abroad. The best suggestion is to mail the paints to your destination ahead of time, or have a store "drop-ship" them to your location. In some cases, additional packages on a plane can cost you an additional \$250 over

the ticket price! While most water based, non-toxic materials should not be of concern, it's important to have the appropriate paperwork to accompany the products. Material Safety Data Sheets (MSDS) should be packed with the paints. Our MSDS are available in a US format and a European format, both in English only. In addition to the MSDS, GOLDEN can provide a certification letter to you when you need to travel with our paints. We also encourage artists to inform the airline in advance about the need to carry on or check such materials; that they will be bringing the documents described above with them; and to ask if there is any other concerns that should be



addressed prior to arriving at the airport. Finally, due to our worldwide distribution, you may want to check if there are any GOLDEN suppliers near your destination. We suggest consulting with the GOLDEN International Sales Department for advice on these matters. They can be contacted by telephone at (607) 847-6154 or [sales@goldenpaints.com](mailto:sales@goldenpaints.com). Also, keep in mind that depending on the value of the products, you may be required to pay duty fees, custom fees, etc., so a "Customs Broker" may need to be hired.



## ***New Web site is a Resource for Artists***

*The Sam and Adele Golden Foundation<sup>SM</sup> for the Arts, Inc. aims to be a meaningful resource for the professional visual artist. In our effort to assist artists we invite you to explore the exciting new NYFA (New York Foundation for the Arts) Web site at: [www.nyfa.org/source](http://www.nyfa.org/source).*

*This is the nation's most extensive database of awards, services, and publications for artists of all disciplines. An easy-to-use search engine allows users to narrow queries by discipline, location, gender, career point, application deadline and more. Artists may receive personal assistance by calling 1-800-232-2789 (1:00-5:00 p.m., EST, Monday-Friday) or e-mail their request to [visual@nyfa.org](mailto:visual@nyfa.org).*

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