

6) 油彩画の応急処置

状況と損傷

津波により被災した油彩画の損傷要因は、主に冠水による作品自体の材料劣化と、津波の水力や水中での衝突などの外的要因の両者が挙げられます。また、双方の破損要因が相乗作用を引き起こすこともあります。さらに、現場からの救出時期が遅れば、カビの発生など損傷要因が増加します。

被災作品を早急に被災現場から搬出すべき事は言うまでもありませんが、被災後の混乱の中では、本格的な修復計画を立てることは困難であり、段階を追って処置を進めるしかありません。東日本大震災の美術作品第一次レスキュー活動では、被災現場からの搬出、搬出後の応急処置、計画的な安定化処理と修復といった大きく3段階の処置が必要でした。いずれにしても、早急に現地調査を行って作品の状態と量を把握した上で、作品搬出先を決定し作業人員の確保などが必要です。本稿では搬出時と搬出先における初期段階での応急処置について述べます。

現場からの搬出時の処置

被災現場での作業は時間的にもスペース的にも制限があり、限られた処置しかできません。最低限の処置に留めてできるだけ早く搬出作業を終わらせ、次の段階で安全な場所で落ちついて応急処置をすべきでしょう。津波による被災の場合は、砂などの付着物が多い反面、海塩

物質の効果で乾燥が緩やかで、急激な乾燥による材料の収縮が若干免れ、また、カビの繁殖も短期間であれば抑制されるという真水とは異なった点もあります。

1. 清掃

まず作品を作業スペースに移動させたら、大きな付着物や砂を刷毛や布で除去します(図1)。

2. 支持体の固定補強

木枠に張られた作品は、側面の固定釘の外れや緩みがないかを確認し、必要に応じてガンステープなどで追加固定して補強します。ただし、画布に湿気が残っている時点では、適度な緩みを残しておきます。乾燥時に画布の張りが強すぎて画布や木枠が破損する恐れがあります。

3. 画面の養生

画布に湿気が残っている場合、絵具層の状態から判断して支持体乾燥時の浮き上がりや剥落の発生が懸念される場合は、和紙と薄い水性糊で表打ちの養生を施します(図2)。緊急時には薄く溶いたヤマト糊やティッシュペーパーでも代用できます。しかし、絵具の浮き上がりがなく、搬出後すぐに応急処置ができる段取りが組まれていれば、この場での表打ちは避けるという判断もあるでしょう。むしろ、落ち着いた状況で絵具層の汚れを除去し、その後に表打ちなどの養生をする方が後の修復処置が安全に行い易くなります。

搬出後の作業場での応急処置

この場では本格的な修復までの間、損傷を進行させず、

6) Immediate Treatment of Oil Paintings

Condition and damage

The following two factors are the presumable causes of damage to oil paintings affected by tsunamis: water damage caused by material degradation from being immersed in water, and damage caused by external factors such as the hydraulic effect of the tsunami or collisions with other objects in the water. Furthermore, these two factors can cause damage from synergistic effects. Moreover, when the time required for salvaging the paintings from the disaster site is extended, damage factors, such as mold growth, can be increased.

Obviously, disaster-damaged artwork must be removed from the disaster site as soon as possible. However, it is difficult to develop a full-scale restoration plan in the confusion following the disaster, and treatment can only be performed methodically. The following three steps were necessary for the immediate handling of artwork damaged by the Great East Japan Earthquake: transferring from the disaster site, post-transfer emergency treatment, and planned stabilization and restoration. In any case, an on-site survey must be conducted as soon as possible to grasp the conditions and the amount of damaged artwork in order to decide the artwork transfer destination and to make necessary arrangements such as ensuring a sufficient number of staff is present. Early-stage emergency treatments performed for the transferring process and at the transfer destination are described in this section.

Treatments during the process of transferring from the disaster site

Only limited treatments can be performed at the disaster site since both time and space for recovery activities is limited at the site. It is recommended that treatment to be performed at the disaster site is kept to a minimum to complete the transfer process as quickly as possible, and that emergency treatments

are performed as the next step when action can be taken under more settled conditions. While paintings damaged by tsunami acquire large amounts of accretions such as sand, they dry slowly because of the effects from sea salt. This creates conditions differing from damage caused by freshwater; contraction of materials due to rapid drying is somewhat subdued, and mold growth is suppressed, though this effect is only for the short-term.

1. Cleaning

First, after transferring the artwork to a workspace, remove large accretions and sand using a large brush and a cloth (Fig. 1).

2. Reinforcement of the support fixings

For paintings mounted on stretchers, check to see if the fixing tacks on the side have come off or have loosened, and reinforce them as needed by applying additional measures such as applying staples using a staple gun. However, leave an adequate amount of flexibility if the canvas is damp. Failure to do so may damage the canvas or the stretcher when the painting dries because of overly tight canvas tension.

3. Protection of the painting surface

When moisture remains in the canvas and, based on the conditions of the layer of paint, there are concerns over the possibility of paint loss or lifting once the support dries, the surface is covered using Japanese paper and a thin water based adhesive to protect it (Fig. 2). In an emergency situation, sheets of tissue paper and a thin solution of starch glue dissolved in water can be used as substitutes. However, if no paint is coming loose and arrangements have already been made so that emergency treatment can be performed immediately after the paintings are transferred from the disaster site, another option would be to refrain from protection with paper on the surface of the painting. Actually, it would make it easier to perform subsequent restoration treatments with a higher degree of safety



図1 被災現場での応急処置 撮影：寺口淳治氏
Fig. 1 Performing emergency treatment at the disaster site. (Photo taken by Mr. Junji Teraguchi)



図2 被災現場で行った画面養生の表打ち
Fig. 2 Protection of the surface performed at the disaster site



図3 裏面に付着した流出バルブの除去
Fig. 3 Removing runoff pulp attached to the back side



図4 掃除機、ヘラを使用して、裏面の隔々の付着物を除去
Fig. 4 Removing accretions from the back of the canvas using a vacuum and a spatula



図5 裏面の汚れ清掃作業
Fig. 5 Removing the contamination from the back side

図6 画布裏面全体に繁殖したカビ
Fig. 6 Mold growth covering nearly the entire back side of the canvas



安定した状態を維持させることが目的です。そのためには、ある程度の期間の安定と共に本格修復に不都合を起こさない処置方法、材料の選択が必要です。

1. 付着物の除去、清掃

画面および裏面に付着しているごみや砂、カビなどを丁寧に除去します。木枠と画布の間に入った砂などは、画布を木枠から外す事ができない場合は刷毛、ヘラ、掃除機、ブロワーなどを利用して除去し、特に塩分を含んだ残留物ができるだけ残らないようにしなくてはなりません(図3, 4, 5)。支持体の画布や板には海水の塩分が残留していますが、応急処置の場では、脱塩処置を施すのは難しいでしょう。裏面のカビの繁殖がひどい場合は、エタノールを含んだティッシュでカビをそっと拭いとり、掃除機で残留物を吸い取ります(図6)。掃除機はHEPAフィルター付を使用します。裏面は清掃後、エタノールで拭いて殺菌します。木枠は、水拭きを繰り返します。汚れやカビの除去作業では、防塵マスクやニトリル手袋を着用します。また、除去に使用した紙など廃棄物の管理には、十分に気を付ける必要があります。

2. 画面の洗浄

水やエタノール水溶液、綿棒などを使用して画面洗浄を行います。被災現場で表打ちを施した作品は、表打ちの下に多くの汚れが付着しているため、カビの原因ともなります。表打ちが安全に外せれば除去します。

3. 絵具層の固着強化

浮き上がり、剥落がある場合は膠水で接着します(図7)。浮き上がり箇所や、絵具の固着不良箇所が多く、時間的にこの段階での接着作業が間に合わない場合は、それらの箇所を和紙と水性接着剤で部分的に表打ちをして養生をします(図8)。もし全体に湿気が残っている場合、支持体の乾燥とともに絵具層が浮き上がりを起こす可能性があるかと判断された場合は、再度全面に表打ちを施します。

4. 破損部の処置

突傷や支持体の破損がある場合は、破損部の変形を修正し、表打ちや部分裏打ちなどで補強および仮接着をし、破損部の変形や収縮を防ぎます。木枠の破損などは、交換するか、補強材の取り付けによって支持体として十分な強度の確保と安定を図ります。

5. 殺菌、防カビ

応急処置現場では完全な洗浄はできず、また残留した塩分により湿気を吸収しやすく、カビの発生が懸念されます。防カビのため、チアベンダゾール/エタノール水溶液を塗布します(図9)。カビの繁殖状況によっては燻蒸を検討します。

被災現場において大量にカビが発生した場合は、作業者の健康管理のため、作品を乾燥させた後、処置前に燻蒸を行います。作品数が大量にある場合、スペースが確保されれば鉄骨の枠をビニルシートで覆って行う、被覆燻蒸も有効です(図10)。

if the surface of the painting is protected with paper after the contaminants on the layer of paints are removed under more settled conditions.

Emergency treatment at the workplace following artwork transfer

At the workplace, the goals are to prevent any further advancing of damage and to maintain a stable condition until the time comes to perform full-scale restoration. For this reason, treatments and repair materials which provide stable conditions for a certain period and which do not cause any inconvenience for full-scale restoration should be selected.

1. Removal of accretions and cleaning

Carefully remove the accretions on the surface and the back of the paintings such as filth, sand and mold. When the canvas cannot be removed from the stretcher, remove the sand in between the stretcher and the canvas using a large brush, a spatula, a vacuum cleaner, a blower or other tools. Residual matter containing salt must be removed to the maximum extent possible (Figs. 3 to 5). Though salt from seawater will remain in the canvas and on the board, performing desalination at the emergency treatment setting is likely to be difficult. When mold growth on the back side is extensive, gently remove the mold using sheets of tissue paper containing ethanol, and then suck in the residual matter using a vacuum cleaner (Fig. 6). Use a vacuum cleaner equipped with a HEPA filter. After cleaning, the back side should be sterilized by wiping it with ethanol. The stretcher should be wiped repeatedly with a cloth dampened with water. Wear a dust mask and nitrile gloves when removing contaminants and mold. In addition, be especially cautious when managing waste generated from this process such as paper used for removing contaminants.

2. Painting surface cleaning

The painting surface is cleaned using water, ethanol

solutions, and cotton swabs. The large amounts of accretions existing under the protection of the paintings that have been applied to the surface at the disaster site can also cause mold growth. Remove the protection from the surface if it can be removed safely.

3. Enhancement of paint layer adhesion

Fix any paint loss or lifting to the painting surface using adhesive solutions (Fig. 7). When there are many areas of paint loss, and/or unfixed paints, and fixing those areas will take too much time, cure those areas by partial protection using Japanese paper and a water based adhesive (Fig. 8). When the painting is still damp and there is concern over the possibility of the layers of paint coming off once the support dries, repeat the surface protection step.

4. Treatment of damaged areas

When there are pricks or dents on the painting or damage to the support, prevent deformation or contraction of the damaged areas by first correcting the deformed area and then enhancing and temporarily attaching the area by lining the front side or partially lining the back side. Damaged stretchers should be replaced or treated by applying reinforcement materials to ensure and stabilize the strength of the stretcher as a normally functioning support tool.

5. Sterilization and mold prevention

Cleaning cannot be performed perfectly at an emergency treatment site. Also, there are concerns over the possibility of mold growth since the residual salt in the artwork absorbs moisture easily. To prevent mold growth, a thiabendazole/ethanol solution is applied (Fig. 9). Treatment by fumigation may be performed depending on the extent of the mold growth.

When mold has grown in large amounts on the artwork at the disaster site, the item is dried and then fumigated before performing treatment in order to protect the health of the staff.

保管

応急処置の段階ではカビの発生や材料の変化という面で、まだ不安定な要素を多く含んでいます。応急処置後の作品は、良好な保存環境に置かれるべき事はもちろんですが、定期的な状態確認が必要です。梱包の有無にかかわらず、状態確認がしやすい保管方法を考慮すべきです。

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When there is a large number of works of art and enough workspace, it is appropriate to perform covered fumigation, in which works of art are placed in a steel frame and covered with a vinyl sheet (Fig. 10).

Storage

At the emergency treatment stage, the items still contain many unstable elements in terms of mold growth and changes of the material. Following emergency treatment, needless to say, the art work should be kept in good conditions, also the treated works must be checked periodically. Regardless of whether the items are packed or not, consideration must be given to using storage methods that allow easy access for condition checks.

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図7 浮き上がり接着作業
Fig. 7 Fixing paint in areas where it became loose and lift



図8 剥落、浮き上がり箇所の養生
Fig. 8 Partial protection using Japanese paper on the areas of the paint loss or lifting



図9 洗浄後、裏面に防カビ剤TBZを塗布
Fig. 9 Post-washing application of anti-mold agent TBZ to the back side



図10 ビニルシートで覆う被覆燻蒸のための鉄骨。カビの繁殖がひどいため処置作業前に燻蒸を行った。
Fig. 10 Steel frame to hold up the vinyl sheet for fumigation using a vinyl sheet. Pre-treatment fumigation was necessary because of extensive mold growth.

写真協力：全国美術館会議
By courtesy of the Japanese Council of Art Museums