

Requirements for Tosogu Photographs to be submitted to the Kokusai Tosogu Kai and a Method of Photography to meet these Requirements

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Introduction

The purpose of this document is to discuss the necessary requirements for photographs of tosogu to be used by the Kokusai Tosogu Kai (KTK) in its formal publications and to suggest a method of meeting these requirements.

Background

What is considered to be a “proper” photograph of tosogu is very different from what those in the west would think of as the “correct” way to photograph such fittings. A western photographer’s first instinct might be to copy what the advertising industry does with jewelry, with its flashy high key lighting/backgrounds, desire to print the finished product much larger than life, inventive angles of view, etc. The more classic approach to photographing tosogu is to photograph against a plain background, with relatively simple lighting, with the tosogu being viewed, for the most part, from straight on, and seldom with enlargements greater than life size without a good reason (to provide better view of a mei, highlight a particular feature of workmanship or metal activity, etc.).

Requirements

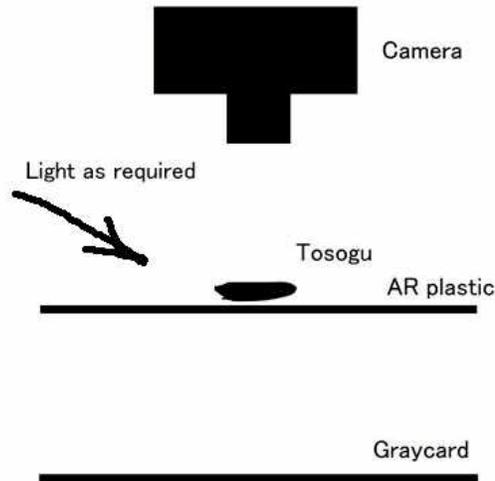
In accordance with these more conservative aesthetic standards, photographs taken of tosogu meant for inclusion in KTK publications should adhere to the following standards:

1. The end photograph should have a featureless 18% gray background
2. The end photograph should also be shadowless (a method is described later in this document)
3. To facilitate printing at the correct size, a metric scale showing mm should be visible in the X and Y directions in the photograph. These should be placed so that there is some space between the tosogu and the scales to allow the tosogu photo to be cropped to size without having to rework the photograph to remove the scales (or to at least minimize this retouch work).
4. There should be some method of identifying the photograph placed in the photograph that is meaningful (a “post it” note with an identification number, for example)
5. Photographs should be taken orthogonal to the tosogu unless there is a good reason not to do so (to show some special feature, for example)
6. The photograph should have sufficient resolution for the tosogu to be printed full size at high quality after the scales/identification information has been cropped from the photograph. Given the desired scale placement, this author will posit that that this resolution can be achieved with no less than a high quality 6 Mega pixel digital camera or a 35mm SLR camera with a high quality lens – this may be conservative, but its better to have too much resolution than too little. NOTE: For general tosogu photography (where the edges of the photograph can be very close to the edges of the tosogu and much greater than full size enlargements aren’t required), a high quality 3-4 Megapixel camera works well.
7. If a digital camera is used, finished photographs should be provided in either TIFF, jpeg, or the new digital negative (.dng) formats. If the JPEG format is used, it should be set to have minimal compression to minimize artifacts. The color space should be set to sRGB (and actually, if film is used a high-resolution scan would be appreciated following these guidelines).
8. Minimal sharpening should be used unless the photographer is knowledgeable in this area (oversharpening looks bad...).

Proposed setup

To meet these requirements, the author has used the following setup with success:

Figure – 1 Camera setup:



In this setup, the Tosogu is placed on a piece of anti-reflective (AR) plastic (commonly used for picture framing and available at craft and plastic supply stores), with the “matte” side being the one the tosogu rests on. This plastic is then suspended above a common photographic “graycard” or a neutral gray surface (this author uses several children’s blocks wrapped in flat black construction paper for suspending the AR plastic above the gray background).

NOTE: Do not use glass for this purpose. It is much harder than the tosogu and can EASILY cause scratching or other damage by dragging the tosogu across the surface, dropping the tosogu on the surface, etc. Note also that while the plastic is MUCH softer, care should still be taken when placing the tosogu on this surface, as soft metal pieces can still be damaged by dropping them on the plastic surface, dragging them across the plastic surface, etc.

Irregularly shaped tosogu can be held “parallel” by a number of methods (chunks of foam, “museum wax” or other concoctions for this purpose (fun tack), etc.). Just be certain the method chosen will not cause damage to the surface of the tosogu.

The camera is held perpendicular to the surface of the AR plastic, and lighting/reflectors/gobos are used as required/desired for lighting. The gray card can either be illuminated by a dedicated light or by “excess” light from the tosogu lighting.

The camera has to be far enough away from the tosogu that the scales/reference information can be seen in the photograph. The camera’s aperture should be set so that all the visible areas of the tosogu are in focus. The plastic must be mounted high enough above graycard surface that shadows are not cast onto it by the tosogu (or the graycard must be illuminated to remove the shadows). These shadows can also be “photoshopped” out as well, though great care must be taken to make the illumination levels match/look “right”.

The camera can be held above this by the use of a copy stand, tripod, etc. The only real requirements are that the mounting be rigid enough to prevent movement of the camera or fittings during the time the picture

is taken and that the camera focal plane is parallel to the plane where the tosogu is placed. To that end, it is strongly recommended that either the shutter lockup/remote release be used on an SLR, and that the timer be used on digital cameras w/o a shutter. A method of getting the planarity “close enough” is to use a Level on the plane the tosogu is placed on, and a level that attaches to the camera’s hotshoe (its more difficult to achieve the required coplanarity if the camera does not have a hotshoe, but it can be done).

If the tosogu is very reflective, usually the camera’s reflection can be hidden by using a black camera at a significant distance, camouflage (cutting a hole in flat black paper and taking the photograph through the hole works), and making sure everything that the camera can “see” in the tosogu’s reflection is going to not be visible (done a number of different ways – distance, black (or necessary color) cards, necessary colors projected on surfaces, lighting power differential, etc.).

For lighting of the tosogu itself, what this author has found most useful is one or more lights “skimmed” across the tosogu to increase contrast, with white/black cards used as necessary. Note that the author has also found that photographs of tosogu made from shakudo look far better when modern innovations such as light tents are NOT used (black cards/tents) seem most useful on these items), with white/silver cards used to highlight gold/silver features as necessary. The light sources should be larger than the tosogu being photographed to soften the shadows (use soft boxes, plumber’s lights w/ large reflectors, etc.). The author also strongly recommends not using the “in camera” flash (turn it off via controls, or block it).

To minimize “grain”, the author recommends setting the camera to the lowest ISO available or using slower film (ISO of 160 or less) if a film camera is being used for the photos.

A photograph of a “typical” setup is shown in Figure – 2. There are a number of things in this photograph that should be noted.

First, note the distance between the graycard and the AR plastic. While this distance is acceptable for a digital SLR/film SLR, the distance must be increased when using a consumer digital camera to prevent the texture of the graycard from being recorded (or the photograph must be “fixed” in photoshop). This is because the effective depth of field is larger on these cameras due to the geometry of the lens/sensor (google “circle of confusion” for more information). The camera’s “f-stop” needs to be adjusted to provide a sharp image from the highest point of the tosogu to the surface of the AR plate. Often consumer digital cameras must be put into manual focus mode to prevent errors in their autofocus system from deciding to change the focus point every shot. In addition, it might be necessary to put the camera into completely manual mode and control the shutter speed as well due to metering “quirks” (this is one reason why an 18% gray background is recommended – it makes getting a correct exposure with a consumer digital camera MUCH easier).

Second, note the level attached to the camera hotshoe. Placing a small bubble level on the back of a camera w/o a hotshoe (they usually have the lcd reasonably parallel with the image plane in most consumer digital cameras) is an alternate workaround for cameras w/o hotshoes. Note that the surface the tosogu goes on should be fairly level as well. This is done to maximize the depth of field and minimize rework necessary on the photo.

Third, note the lighting. They are actually not in the optimal place for lighting a lot of pieces, though the angle above the AR plastic is fairly “typical” (the lighting usually needs to be adjusted to show each piece in its best light). Note also the size – the lights should be larger than the tosogu being photographed. Plumber’s lights work well enough and cost far less than the specialized lights shown. In addition, it should be noted also that the light coming from the door at the upper left of the photograph should have been “blocked” to minimize color temperature/intensity changes (though usually this effect is minimal if most of the light is coming from controlled lights). This author recommends doing a custom white balance for the purposes of these photographs (refer to your manual if you do not know what this is or how to do it).

And finally, there are some helpful items shown – a sandbag used to damp vibrations on the copy stand column, and the blower and antistatic “tiger rag” used for dust control.

Figure – 2: Photograph of typical setup



A typical setup as viewed through the camera is shown in figure – 3:

Figure – 3: Typical photo of tosogu:



In this particular photo, there are halogen lights placed to shine light at a low angle of incidence from the upper left and upper right, with a “white card” reflector at the bottom to provide additional highlighting. A “black card” gobo can be seen in the upper right hand corner of the photo that was used in this particular situation to control a highlight on the rim of the tsuba.

Note the location of the scales. They have been placed far enough away from the tosogu itself so that additional retouching will probably not be needed, or at least the need for such retouching is minimized.

Note also that it saves everybody a lot of trouble if an entire “set” of photographs are taken at the same focal length/distance from the camera (if possible), or at least the number of different distances are

minimized. This will minimize the number of transformations necessary to get the tosogu photographs to 1:1 scale.

It should be noted that there will still probably need to be an occasional “fix” needed with pictures using this to remove occasional reflections from the AR plastic, etc.

Figure – 4 shows a “typical” finished tsuba photo (note that the scales, etc. have been clipped out and the photograph has been adjusted to 1:1 scale).

Figure – 4: Finished photograph



It should also be noted there are a number of other ways to achieve this same “floating” appearance (use of a light table/softbox underneath the tosogu, sticks with museum wax or fun tack to hold the tosogu above the background, hanging the tosogu vertically and taking its picture against a gray background, etc. All of these methods have strengths and weaknesses that it is beyond the scope of this paper to discuss. There are also alternative imaging systems, (scanners, etc.) that have their own strengths, weaknesses, and techniques that are also beyond the scope of this document and are therefore not discussed.

Conclusion:

In conclusion, the requirements for what constitutes an acceptable photograph have been spelled out and a method for achieving the photograph has been described.

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