

Making and Printing Custom Decals at Home

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What do you do when the kit decals are missing or don't accurately represent the model in the box? You can look for aftermarket decals, raid the spares box or try making and printing custom decals at home. I was recently faced with the choice when the 1/72 Typhoon IB kit decals represented a later version of the aircraft and two 1/48 helicopters which were on the bench did not have decals at all. I decided to make my own decals.

The first step was to find reference material with pictures of the actual aircraft. I quickly found some high quality pictures of a Hawker Typhoon IB serial number MN180. This aircraft fell into the correct serial number range which had the older smaller tail, three bladed propeller and new bubbletop canopy. The picture represented a new aircraft departing the factory while other research indicated this aircraft carried squadron codes SF-Q when assigned to 137 Squadron four months later. For the Typhoon I needed to make the six inch serial numbers "MN180" and the 24 inch SF-Q squadron and aircraft codes in 1/72 scale.



Hawker Typhoon Ib MN180 at the Gloster factory at Hucclecote, Gloucestershire, 10th January 1944. This Typhoon went on to serve with 56 Squadron and later 137 Squadron, with whom it finished its days with a forced landing at Predannack, Cornwall after the engine cut whilst in the circuit after fuel starvation on 27 April 1944. Crash reports indicate the aircraft was coded SF-Q while assigned to the 137 Squadron.

The OH-58C and UH-1H helicopter kits did not have decals with them. These were out of production ESCI kits and so old that the decals would probably have been unusable even if they were in the kit. With the helicopters I struck pay dirt when I found an Army Technical Manual (TM), TM 55-1500-345-23 PAINTING AND MARKING OF ARMY AIRCRAFT on the internet. This manual contained a wealth of information including the size, location, and wording of aircraft stencils for both helicopters. The table extract below provides an example of the information available in the TM. In this case item 41 specifies that the UNITED STATES ARMY stencil on the tail boom will be in 6 inch letters. I concentrated primarily on stencils that were 1.5 inches or larger.

41	Both sides of Tail Boom, most AFT letter (Y-left side U-right side) to be 4.0 inch forward of stabilizer. Letters centered on center line of tail boom. Letters to be 6 in. high aircraft black #37038. Additional dimensions and spacing in accordance with Fig. 8-2.	UNITED STATES ARMY
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Extract from TM 55-1500-345-23 PAINTING AND MARKING OF ARMY AIRCRAFT

Photographs of the helicopter provided additional information on the rotor paint scheme, exhaust stack detail and aircraft serial numbers.



OH-58C Serial Number 20771

The decals I needed for the helicopters included the aircraft serial number, data stencil, “United States Army” on the tail boom and the tail rotor warning arrows. These were all flat black stencils which simplified the process. Since the decals I was making included more than just text, I decided to use PowerPoint (PPT) instead of Word for the project.

Using the reference material described earlier, it was relatively easy to type the required text or copy and paste text from the TM. Unfortunately, the fonts for RAF codes and Army block lettering are not in the standard Microsoft Office font library. A quick internet search pulled up references to the military simulation community which creates and paints skins for aircraft computer simulations. I found numerous fonts in TTF format which can be downloaded for free and saved to the desktop. <http://www.bobsyouruncle.net/font-types.htm> or <http://www.simmerspaintshop.com/forums/dlcat-military-fonts-19/>

To add the new fonts to your computer click “Start” then “Control Panel” and finally “Fonts”. Drag and drop the desired fonts you saved to the desktop into the “fonts” panel. I used the font “RAF WW2 851ATH” for the Typhoon serial numbers and USAAF Code for the helicopters.

USAF Code = **PRISON CITY MODELERS 2013**

Cyrillic = **ПРИСОН ЦИТЫ МОДЭЛЭРС 2013**

Japanese = 临盟京民联乐 加京明亲 来联東节快节盟民 佛东方夫

Stencil Gothic = **Prison-City-Modelers-2013**

RCAF = **PRISON CITY MODELERS 2013**

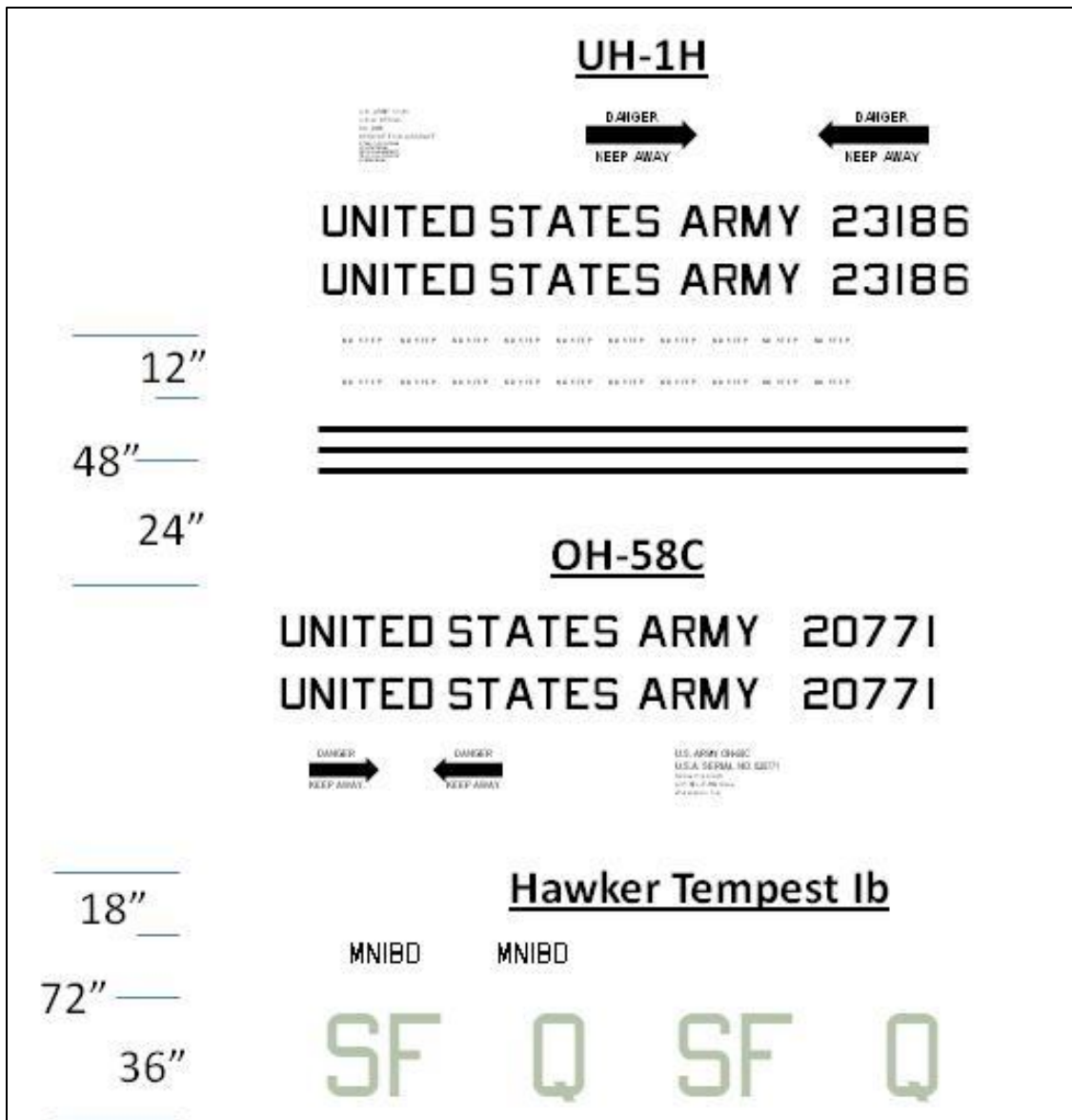
Examples of military fonts which can be added to your computer font library

After selecting the font, the next step was to size and space the lettering to the appropriate scale. Turn on the rulers and gridlines in PowerPoint by going to the “View” menu and turning on rulers and gridlines. The rulers and gridlines provide a ready reference for size. Using some basic math I determined for 1/72 scale the six inch serial numbers are 1/12 inches tall decals and the 24 inch squadron codes are 1/3 inch decals. This worked out neatly to a font size of 6 and 24 respectively for the “RAF WW2 851ATH” font. The squadron codes were painted in a RAF color called Sky Type S. To correctly color the squadron codes I turned to

<http://www.simmerspaintshop.com/page-rgb-colors-UK.html> which provides the correct RGB colors for the computer. To input the color, highlight the text which you desire to color, click “font color” in the toolbar, click “more options”, click the “custom” tab and then enter the Red/Green/Blue numbers for the desired color.

The helicopters are both 1/48 scale so the six inch serial numbers are 1/8 inch tall decals. This worked out to a font size of 12.5 in the USAAF Code font for six inch letters. The letter spacing in this font originally looked too close together so I changed the spacing from 1.0 to 1.2. You can do this by right clicking the text, selecting “font” and then “character spacing”. Additional stencils for the 1/48 helicopters were made using the basic rule of thumb that every inch in height required two font points. For example 1 inch stencils are 2 font, 1.5 inch stencils 3 font, etc. Finally, I drew the arrows for the tail rotor warning stencils based on the dimensions specified in the TM. These are easily drawn in PowerPoint using the rulers and gridlines as guides. I also added some NO STEP stencils and drew 2 inch wide straight black lines which I can cut to length as needed.

Printing the draft decals on regular paper provided a way to verify that the height and spacing fit the model before final production. After passing the final check simply print the decals on a laser printer and apply them as usual to the model.



Custom decal sheet

This project was completed printing black lettering on clear decal paper. I plan to experiment with gray and yellow lettering to determine if the base color bleeds through the decal. While I've made decals for aircraft models, the technique is also applicable to armor especially when developing custom markings.