Automatic DA6

User Manual

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# Purpose and Intent

The point of using an automated DA6 is twofold: Speed & Redundancy.

What better way to solve these problems than to automate the process using VBA scripting? Visual Basic for Applications is a programming language that is built in to Microsoft Office out-of-the-box and supports communication between nearly every Office 365 application.

For more information about Visual Basic for Applications, see the [Microsoft Docs entry](https://docs.microsoft.com/en-us/office/vba/api/overview/) or [Wikipedia](https://en.wikipedia.org/wiki/Visual_Basic_for_Applications).

For more specific information on Excel VBA, click [here](https://docs.microsoft.com/en-us/office/vba/api/overview/excel).

***Disclaimer****: You* ***must*** *enable all features for this document to function properly.*

# The Other Sheets

Upon opening this document, you will be greeted by the DA6 “homepage”.

At the bottom, click the blue “Holidays” tab to get started and follow along with this guide.

## The Holidays Sheet

The “Holidays” sheet contains one table. This table will be referenced from now on as the Holidays Table. The Holidays table contains entries for specific holidays and their corresponding Day of No Scheduled Activity (DONSA).

Unit specific Training Holidays and any additional DONSA’s can be entered here as well.

* To quickly input dates, use the mm/dd/yy format. Example : 1/25/19

## “Archived” Sheets

Whenever you save a DA6 to archive, it is saved under the following format: MMM YYYY (JAN 2019)

After a DA6 is saved, all conditional formatting is removed and all formulas are replaced with their previously displayed value.

# The DA6

***Disclaimer****: You* ***must*** *enable all features for this document to function properly.*

Any time you open the document, you must enable all features and make it a trusted document. The first sheet that should pop up after you click “Enable all Features” is the DA6. This is where the magic happens.

There is hidden data in Cells E5 to 10; this data is used for the “AssignDuties\_DA6” macro and is explained in the “Macros” section.

## Official Army Doctrine

This DA6 document is valid and legitimate under Appendix B of Army Regulation 220-45.

## Adding and Removing Entries

### Adding Entries

All names entered in the document must be Last name followed by a comma and a space and then the first name, all completely capitalized. (LAST, FIRST). To optimize this, a data entry form was created, now adding a user is as easy as clicking a button.

* Click the “ADD SM TO DA6” button to open up a form.
* Enter the SM’s Last and First names and then select their rank. Click the rank you want to select.
* Click the “Add SM to DA6” button on the Form and the new entry will be inserted at the proper location.

***There should be no issues with the document if you add entries this way.***

For more information, refer to Button5\_Click in the Macros Section.

### Removing Entries

Removing entries from the DA6 is incredibly easy.

Right-click on the row number to the far left of the sheet and click “Delete” to delete the entire row.

***There should be no issues with the document if you delete entries this way.***

## The Buttons

All of the buttons on this sheet are linked to similarly named macros.

If a button is accidentally deleted, go to the “Developer” tab > Insert > Button (Form Control)

# The Macros

The real magic of this document is in the Macros.

## FillData\_DA6: “The Time Saver”

**In order for this macro to work, you must have the Master Troops to Task workbook open, as this macro reads the data on the troops to task and inputs it on to the DA6.**

How does it work?

* Firstly, the Macro clears all data that is currently entered into the DA6.
* The macro goes down the list of names on the DA6 and searches for those names on the Troops to Task.
* If the name is found on the troops to task, the macro then gets all data corresponding to the range of days between the Start and End dates on the DA6.
* Once it has all the data, it pastes the data one cell at a time on the correct row.
* After it finishes that row, it moves on to the next name and does it all over again.

**It is extremely important that all SM’s on the DA6 are also on the Troops to Task, and that their names are spelled correctly in both documents.** If the macro cannot match a name on the DA6 to a name on the troops to task, it simply skips the name. Please refer to the “Adding and Removing Entries” section for more info on putting names on the document.

## AssignDuties\_DA6: “The Decision Maker”

This macro picks SM’s for duties based on the “hidden” data in cells E5 to E10. (The text color on these cells is white, which “hides” the contents.) The purpose of these cells is so that the macro knows which ranks to pick names from. This data is formatted as follows: RNK-RNK with no spaces between the dash and the rank. (Example: SFC-SSG)

The macro uses this data to find the top (first rank) and bottom (second rank) of the range it needs to select to pick SM’s for that corresponding duty.

How does it work?

* The macro iterates through the range at the top of the sheet that indicates when duties will be pulled and how many duties will the pulled on that day.
* The macro checks each day, one at a time, for every duty at the top of the page.
* If that day is marked for a duty, it checks the “Rank Range” it needs to select at the beginning of that row. Example: SDNCO = SFC-SSG, with the first SFC being the TOP of the range and the last SSG being the BOTTOM.
* The macro then checks in the “Rank Range” that was previously determined for the SM that is available with the highest number of days since their last duty and places a duty marker (denoted “#”) in the cell for that day.

While this macro will usually pick the exact same names that a human would pick, if there is an issue then the SM’s chosen for duty can be tweaked manually. It is highly encouraged that you check behind this macro to make sure there are no conflicts with SM’s pulling certain duties such as B co. CQ, which requires a certification to be eligible for the duty.

## Clear\_DA6: “The Do-Over”

There are 3 different “Clear” macros in this sheet:

* ClearPrompt\_DA6
* Clear\_DA6
* FullClear\_DA6

The macro that is executed when you click the “Clear” button is ClearPrompt\_DA6, which only clears the selected duties, unless you decide to clear the entire sheet as well.

How does it work? (ClearPrompt\_DA6)

* After clicking the “Clear” button, the macro will clear all previously selected duties on the DA6.
* The user will be prompted if they would like to clear the rest of the sheet as well. Yes or No
* If yes, the Clear\_DA6 macro is called which clears the rest of the data on the DA6, leaving you with a blank form.
* If no, the macro is finished and will exit.

How does it work? (Clear\_DA6)

* This macro is designed to be called by other functions and has no prompts and returns nothing
* If this macro is called, it completely clears the DA6, restoring it to a blank slate while preserving the duty days selected at the top.

How does it work? (FullClear\_DA6)

* This macro is designed to be called by the Save\_DA6 macro.
* It completely clears the DA6 and the selected duty days at the top.

## Save\_DA6: “The Archivist”

When saving the DA6, it is extremely important to be sure that no other changes need to be made. Once the DA6 is saved, it cannot be converted back to a working document and must be re-made for that month on the DA6 Sheet. After clicking this button, a prompt is displayed with the following message:

“You are about to save this DA6 to archive. Formulas and Macros will no longer work on the saved copy of this sheet. This sheet should only be saved once you are completely done with it, as there is no way to undo this action. Are you sure you want to save this sheet?”

The prompt has three decision buttons: Yes, No, and Cancel.

* “No” and “Cancel” have the same effect; nothing happens.
* After clicking “Yes”, the DA6 is copied and renamed in the format of “MMM YYYY”.
* All conditional formats are removed and all buttons are deleted.

Another prompt will appear, asking if you would like to start the next month’s DA6 while displaying the next month. Yes or No.

* “No”; nothing happens
* “Yes”; FullClear\_DA6 is called and the DA6 sheet is cleared of all data and selected duty days at the top are also deleted.
* The day counters from the last day of the month on the DA6 that was just saved are copied over to the official DA6 sheet.
* The next month, which was displayed in the prompt, is inputted into the “MONTH” cell.
* All the dates and counters are updated automatically

**Reminder**: There is no way to undo this macro. It should only be executed if there are no more changes that need to be made to the sheet.

*Tip*: For best possible scenario where no more changes need to be made, wait until the last day of the month or until the next DA6 needs to be made.

## Button5\_Click (AddUserForm.Show): “The Odd One Out”

Button5\_Click isn’t like the other macros in this workbook. It summons a user form that takes user data (last, first, rank) and uses it to insert a new person onto the DA6 in the proper location.

How does it work? Well, there’s a *short* explanation and a *long* explanation

#### The Short Explanation

Background: The DA6 is ordered in the following way.

1. By Rank (top to bottom, descending): Officer, Warrant Officer, Enlisted
2. By Name (A-Z, ascending): Last name, First name

How does it work?

When adding a name, the macro checks the Rank of the SM being added and then checks the DA6 to see if that rank exists on the sheet.

* If the **rank** DOES exist on the sheet, the name will be inserted in that range alphabetically.

E**xample**: SSG H will come between SSG B and SSG K.

* If the **rank** DOES NOT exist on the sheet, then the name will be inserted in between the other ranks in the proper alphabetical order.

**Example**: If there are no CW2s on the sheet, but there are CPTs and SFCs, then the CW2 will be inserted between the *last* CPT and the *first* SFC.

#### The LONG Explanation

Background: The DA6 is ordered in the following way.

1. By Name (A-Z, ascending): Last name, First name
2. By Rank (top to bottom, descending): Officer, Warrant Officer, Enlisted
   1. O3 to O1; with O3 being first and O1 being last
   2. W3 to W1; with W3 being first and W1 being last
   3. E8(MSG) to E1; with E8 being first and E1 being last

How does it work?

After inputting the SM’s information on the AddUserForm, the macro iterates through the approved list of ranks that can be added to the DA6 and determines the ranges where names with those ranks would be inserted. Simultaneously, the macro is checking the rank of the inputted SM against the rank that is being checked from the list in that iteration.

**If the rank exists on the DA6 sheet AND the rank of the SM matches the rank being checked in that iteration**:

Adding a new entry should be as easy as finding the name that the entry should come BEFORE. To do this, there is a VBA function called StrComp() which compares text strings and returns one of three values:

* 1 is greater than, meaning the new name comes AFTER the name currently selected.
* 0 is equal to, meaning the two strings are the same
* -1 is less than, meaning the name comes BEFORE the name currently selected.

To insert a name, the new name must be inserted on the first row that returns a -1, and this is because when a row is inserted it shifts all other rows DOWN including the data that was on the row before the insert. With that in mind:

* Within the “Insert Range”, the macro uses StrComp() to compare the name of the SM to the names within the range to determine where to insert it alphabetically.
* The name is inserted and all rows below are shifted down, including the row that used to be in that spot.
* Formats and Formulas are copied from below or above depending on the row number.
  + If the name was inserted on the first row, formats and formulas are copied from BELOW
  + If the name was inserted on any row below the first row, formats and formulas are copied from ABOVE

**If the rank does NOT exist on the DA6 sheet:**

* The “Insert Range” for ranks that do not exist on the sheet is on one line, so there is no need to check alphabetical order.
* The name is inserted and all rows are shifted down, including the row that used to be in that spot.
* Formats and Formulas are copied from below or above depending on the row number.
  + If the name was inserted on the first row, formats and formulas are copied from BELOW
  + If the name was inserted on any row below the first row, formats and formulas are copied from ABOVE