NIKON D70 - USING THE BUILT-IN FLASH ALONE & IN WIRELESS MODE WITH SB-800 FLASH UNITS

INTRODUCTION

This material is presented with no guarantees of any kind. I believe it to be correct in all areas. Hopefully I'm correct in that statement. But, with the complexity of this system, the many variables and choices of operations, and the poorly presented info from Nikon, it is probable that I may have erred somewhere.

The purpose of this presentation is hopefully to assist D70 owners in understanding and using the D70, and its internal flash, alone, and also with remote Nikon flashes. It is assumed that readers are familiar with the menu system of the D70 to customize settings, and perform basic camera settings. If you are not, details are presented on **(pg 12)** of the D70 manual. You must be familiar with the (relatively simple) protocols to navigate around the D70 LCD menu.

The Nikon D70 is an exceptional camera. And this also carries over into the built-in flash unit, as well as the SB-800. Unfortunately, the documentation in the D70 manual for the internal flash must have been written by the same person who wrote the manual for the new Nikon SB-800 flash. There is a tremendous amount of material. But, it is so arcane and poorly organized and presented, that it is extremely difficult to understand and use.

The SB-600 is a lower cost version of the SB-800. It has a lower guide number, and cannot be used as an on-camera "Commander" in multiple wireless situations. Wherever there is a reference below to the SB800, the SB-600 can also be used, as in this tutorial, the only Commander is the D70 flash.

This material was assembled and created after reading the D70 and SB-800 manuals (several times), and searching the Internet for material on this matter, as well as "playing" with my equipment. I deemed it necessary to confirm some of the steps by taking test shots. I found lots of material on the Internet, much of it conflicting. The presentation below is not as detailed as the manuals, and is limited to the most important elements. Where the main information below discusses the detailed steps to access camera and flash settings, you may also see a page number referring you to the D70 manual in **(blue).** The pages noted will allow you to read additional details that may not have been presented here.

I have spent many hours reading, understanding, and preparing and editing this material. And, I hope it will be of help to many of the readers. I also hope it does not contain any serious errors, significant omissions, or typos. If you discover any, please send me an e-mail at **ronhirsch@adelphia.net.**

The activities of this tutorialshould function as presented in P, S, A, or M camera mode.

I have not gone into any detail of modes such as SU-4. The main problem with this Nikon system is that there are so many options and settings for all the various capabilities, that the typical user gets lost in the mass of choices.

I personally am concentrating on these choices in a limited fashion.

A QUICK OVERVIEW OF THE STEPS NEEDED TO USE THE D70 FLASH & ONE OR MORE REMOTE SB-800 UNITS

The following is a simplified listing of the scenario and setup steps to configure the D70's built in flash to operate in Commander mode with one or more remote SB-800 flash units. For those of you who are familiar with using the setup procedures on the D70, and the SB800, these steps can be followed as a "short order" approach to setting up things. For those who are unfamiliar with the steps shown, the pages following provide complete details on each of the steps and procedures.

1. *The D70 flash is put in Commander mode, which sets it to Channel 3, Group A,*

2. *The D70 cannot be a contributor to the overall lighting when it is in Commander mode.*

3. *The remote SB-800 flash is set as a "REMOTE", and at Channel 3, Group A.*

4. *There can be as many remotes as desired. Nikon suggests a maximum of 3 (pg 151). They note that more than 3 could cause problems. All remotes must be set at Channel 3, and Group A.*

5. *Flash compensation (if desired), must be set on the D70, and will affect all remotes, as there is only one group. Flash compensation is made via the* *camera button and the sub-command dial.*

6. *The sequence of events the is as follows*
   a. *The D70 sends out a brief communication pulse on Channel 3, to all Group A remotes.*
   b. *This tells the remote(s) to fire a defined test flash which will be received by the D70, and used to calculate the final value for the flash exposure.*
   c. *The D70 calculates the necessary light to properly illuminate the subject, and adjusts this amount by any flash compensation which may have been set on the D70.*
   d. *The D70 then sends a command to the remote(s) specifying the calculated light amount to be provided, followed by a signal to "fire away."*

7. *This completes the process, and the sequence of events is over.*

SETTING UP THE D70 FLASH TO ACT IN COMMANDER MODE, AND STAND ALONE MODE

SYNC MODES FOR THE BUILT-IN FLASH

There are 5 "sync" modes for the D70's built-in flash. These are described on **(pg 95)** of the D70 manual. Do not confuse these sync modes with the operating modes. The best sync mode for most situations is "Front-curtain sync", and it is the default sync when "**two button reset**" on the D70 is used **(pg 111)**. **Except for special situations, I leave the camera set at "Front-curtain sync" for all activities, and I don't bother with "red-eye reduction".**

OPERATING MODES FOR THE BUILT-IN FLASH

There are 3 primary operating flash modes for the internal flash. They are TTL, Manual, and Commander mode **(pg 150-151)**. The desired flash mode is set using the **D70's CSM19** setting **in the camera's menu system**. Details on each of these follows.

1. **MANUAL** - In the CSM19 camera menu **(pg 150)**, select "Manual". You can adjust the light output over the range of "Full" to 1/16th. Choose the desired amount, and exit the menu. Now, whenever the D70 flash is used, that light amount will be produced. There are no preflashes, and no calculations. If the camera exposure is set to "M" mode, the required f stop can be calculated by using the applicable guide number for that flash level setting. If in P, S, or A mode, some experimentation may be needed for optimum results.

    At full power, the built-in D70 flash has a guide number of 56 (ft) at ISO 200. At 1/4 power, the guide number would be 28.

    In Manual mode, no pre-flash in emitted. So, if you were using the D70 with external 3ʳᵈ party flash units attached to optical slave triggers, they would fire correctly, and not be confused by any preflashes. To minimize the light contribution of the D70 flash, if desired, just set it to the lowest power level which will reliably trigger the optical slave sensors on the remotes.

2. **TTL - In the CSM19 camera menu (pg 150), select "TTL". This is the default mode, and what will be used by most users for automatic, worry free flash operation, using the built-in D70 flash. The camera uses a TTL measurement to establish the proper amount of light based on preflash measurements before the actual flash occurs. The camera behaves slightly differently, depending upon whether or not the lens is a CPU lens. This is discussed in detail in the manual (pg 94). Review this material for further info.**

3. **COMMANDER - In the CSM19 camera menu (pg 150), select "Commander". In this mode, the camera's built-in flash does not contribute to the final exposure, but serves to control remote SB-800 flash units. The camera's built-in flash sends out an initial flash command to tell the remote SB-800(s) to fire a test flash for exposure measurement and calculation purposes. The remote(s) each then fire a test flash where the D70 reads and analyzes the reflected light from the subject. It then calculates the proper amount of light for the remote flash to put out for the main exposure. Then the camera communicates to the remote via a brief flash sequence how much light to put out, followed by a command to "fire away". All "TTL" activities occur before the main flash, not during main flash activity.**

Nikon states that the on camera flash contributes negligible light to the subject. I ran a simple test to get the total light output of the D70's preflashes. The total of all contributions made was a guide number of 12 for ISO 200. But, most of these flashes will happen before the shutter has opened, so the effective guide number will be much less than this.

There are 3 options in Commander mode - TTL, AA, and M . These are detailed below. Some users have reported using flash units other than the SB-800 with some success. Some of the wireless capabilities discussed below may well be available via 3rd party flashes with optical slave sensors, but probably only using the D70 flash's manual settings. However, I have recently seen ads from major flash manufacturers, where they are now offering models which are compatible with Nikon's wireless systems, and capable of communicating with Nikon cameras and flash units which are CLS (Creative Lighting System) compatible.

NOTE: When the internal D70 flash is set to commander mode, it operates on Channel 3, Group A only. Therefore all remotes must be set for Channel 3, and Group A. The remote units must also be programmed using their internal settings for the "remote" mode, and Channel 3, and Group A. Setting up the remotes is discussed later on in this document.

i.   TTL control is only usable with the SB-800, or SB-600, and using CPU lenses. The camera calls for a test flash from the remote(s). It then uses its internal software to measure the "test" flash lighting, calculates the amount of light needed for "proper" exposure, and reduces that value by any flash compensation that may have been set in the D70. It then sends out a command pulse, telling the remote(s) how much light to put out, followed by a command to "fire away". Once again, the TTL calculations occur using the test flash from the remote(s), not during the main flash.

ii. AA control is usable with the SB-800, or SB-600, and using CPU lenses. Here, the camera reads the distance from the camera to the subject, reads the aperture setting of the lens, and calculates how much light is needed from the remote(s), and then communicates to the remote flash(es) how much light to contribute. When the camera shutter opens, the flash(es) are fired. The possible problem here, is that the camera does not know what the distance is between the remote(s) and the subject, only from the D70 to the subject. So, it may err in its calculations, and require user corrections to be made.

iii. M control is where the remote SB-800 units are simply triggered to fire when the D70 "command" flash fires. This mode essentially puts the remote(s) in an "optical slave" situation, similar to taking any flash, and using an external optical slave sensor attached to that flash. Except, the amount of light contributed by each remote in this case is the fractional amount selected by the user in the D70's setup window (Full to 1/128) **(pg 150)**. This allows the user to control the output of the remote(s) from the camera itself, whereas normal optical sensor slaves cannot be so controlled. As with all activities when the D70's flash is the Commander, it does not contribute to the final scene lighting.

It should be noted once again, that all remotes are on the same channel(3) & group(A) when using the D70's flash as the commander. Being in the same group means that any setting made for flash exposure compensation will be the same for all remotes. Only by using an SB-800 as the commander can one have the advantage of multiple groups, and assigning different remote units to different groups. This would offer the ability to, for example, to set one

remote at Full power by putting it into Group A (where 0 flash exposure compensation was used), and another at -1 stop by putting it into Group B (where the flash exposure compensation was set at -1 stop).

SETTING UP THE SB-800 UNIT(S) IN REMOTE MODE

1. *To make things easier when setting up an SB-800, it's a good idea to reset the unit to its default settings first. Then the steps below will be easier to follow, as there are no previous custom settings that will affect the flow of events. To return to default settings on the SB-800, press and hold the two buttons for "mode", and "on/off" simultaneously, until the LCD display returns to the TTL non-remote display. This is strongly recommended. And when you are finished using the unit as a remote, resetting to default settings will then allow you to use the SB-800 as a normal TTL flash in the hot shoe of the D70, with no further setting changes needed.*

2. Turn on the SB-800 & press the MODE button as many times as needed, until the unit displays TTL. If you have used the reset above, the current setting should be TTL

3. Press and HOLD DOWN the SEL button for 2-3 seconds and the display changes to 4 boxes. Scroll to the box displaying 2 flash units, and 2 "squiggly" lines. This box is in the upper right of the 6 row/2 column listing. If you have done the starting "reset" you should be in the top row, and only need to push the single "pinetree" button to get there. If the box with the two flash units is not showing, scroll to that box using the + button to move up, and the single pine tree button to get to the upper right box.

4. Press and release the SEL button and it highlights (in black) the word OFF in the list. You are now active in that list and ready to choose this SB-800's function by pressing the + or - button to scroll up or down.

5. Scroll down to the "REMOTE" setting, and press the SEL button.

6. Press the on/off button, and you will be returned to the screen that displays the current settings for the flash unit. You will note that the default settings of Channel 1, and Group A are showing.

7. Press the SEL button and "CH" for channel will be highlighted. Press the + or - button to move to Channel 3. Press SEL again and the highlight will move to highlight "Group". If you are not on Group A, use the + or - button to get there. Then press SEL, and the unit is now set to work with the D70 in commander mode.

8. You can turn off the flash, and when it is turned on again, it will be in the remote mode you have set.

9. You are now ready to use the SB-800 as a wireless remote with D70's flash as the controller.

I hope you find this tutorial easy to use - good luck with your activities.