

The HVL-F20AM

Let's be clear. This flash should not be viewed as an "accessory flash" in the conventional sense. It is not much better than your camera's existing pop-up flash – in fact, if your camera does have a built-in pop-up flash, you can safely skip this article. You will most likely not benefit by owning this flash.

So why am I writing about this little flash so enthusiastically, and why does it warrant the space of a full magazine article? Simple: This little flash addresses my biggest gripe about the A900, which is the lack of a pop-up flash.

Why did Sony make that design decision? Well, way back in 1998, Minolta introduced its 2nd Pro autofocus film camera, the Dynax 9. An outstanding camera in all respects (just ask anyone who's used one); however when it was introduced the camera was widely criticized by the mainstream press because it violated the "simple common knowledge" that professional-calibre cameras don't have pop-up flashes. What these media idiots didn't realize was that the pop-up flash was there to trigger wireless flashes cheaply and easily (a foreign concept for all other brands at the time). The lesson: it's more important to cater to the needs of the visionless yet ignorant media instead of your customers.

Fast forward to 2008, with the introduction of the Alpha 900. Yes, the pentaprism was large to begin with

It's a tiny flashgun but its functions – as a wireless trigger – can be boosted with a modification. Gary Friedman performs infra-red surgery.

(to help facilitate the large viewfinder image), and there wasn't much room up top for a built-in flash, so there was some technical justification for not putting a flash up there. But the real truth is that Sony paid more attention to market research (and to what Canon was doing) than to its users when it decided to omit a pop-up flash. A900 users who wanted a fill-flash would just have to buy a separate accessory flash. And users like me who loved to use wireless flash, well, they had to buy the biggest, heaviest and most expensive flash in Sony's lineup: the HVL-F58AM flash just to control the other wireless flashes. This is progress? This is the kind of ridiculousness that Canon shooters have had to put up with until just recently.

Sony didn't apologize for this glaring feature omission. Nor did they say, "Hang on... a new, tiny accessory flash which will address all of your concerns is on the drawing board". I was expecting Sony to introduce an Infrared wireless flash controller, like its competitors, which would be very tiny and would only do wireless, not fill flash. But in May 2009 Sony quietly announced the HVL-F20AM flash (which I will hereby refer to as the "20"), and oh, by the way, when it's attached to an A900 it can trigger wireless flashes, too. The best of both worlds!

Wait, it gets better. The larger distance between the lens and the flash means that there's a reduced chance that the front of your lens will cast a shadow on your subject when shooting in macro mode. It also means less red-eye than what most pop-up flashes will produce. This is also the first pop-up flash (well, that's essentially what this is) that you can bounce off the ceiling. And unlike the A700's pop-up flash, the 20 flash can fire wireless flash signals at 5 frames per second. Oh, and for less than the price of a roll of film and developing



Top: the HVL-F20AM, a miniature £120 flashgun for the Alpha 850 and 900 with other uses, seen next to a cigarette packet. Non politically correct, but makes the point.

Above left two shots: wide direct and bounce settings. Above right two shots: the Tele/Wide switch on the side of the rotating head, and the Direct/Bounce switch on the flash body.



From the left: the HVL-F20AM mounted on the Alpha 900, flipped up for use. The gun in folded down position which also switches it off. Right, the two AAA cells shown here are Energiser Lithium - light weight and much more power.



you can modify it to be instantly transformed into an INFRARED wireless flash controller at the turn of a knob. But more on all of that later.

What it does

So let's start with the basics, and let's compare this flash's performance with that of the A700's pop-up flash (and in doing so, every other Sony DSLR's pop-up flash as well.). The first thing you should know that the A700's pop-up flash, in the best case, will only allow a shot every 0.7 seconds. Even if you're using it as a wireless flash controller (which outputs relatively little light), the fastest shooting speed you can achieve is 0.7s. Contrast this with the 20 flash atop the A900, where you can shoot at a full 5 fps, regardless of whether the flash is fully recharged or not!

In my very informal tests, for a subject 5 feet away and lens set to 50 mm at ISO 200, the 20 flash was able to illuminate the subject properly at 5 frames per second for the first five frames. After that, the pictures started getting darker. I don't know if this was intentional or not, but I applaud this behaviour nevertheless – when shooting people using a fill flash (where the built-in flash is only there to lighten the shadows; not to provide all the illumination), sometimes it's more important to get the right expression than for the fill light to be perfect. I'd rather the camera shoot when I press the button, even if the fill flash isn't ready. Never before have I used a modern automatic camera that allowed me this option.

Interestingly, this very same behavior was observed when shooting at 5 fps in wireless controller mode – the 20 seemed to send out control signals on every single frame for upwards of 30 frames (I stopped testing after that). But interestingly, even when the off-camera flash was set to manual output mode at 1/32nd power (so it could keep up with the 5 fps control signals), the flash only the first five or six shots – and it ignored subsequent signals until I stopped shooting for a second. My conclusion? When the 20 is not fully recharged even the minimal-energy control signals aren't properly formed, resulting in mis-firings. Now we all know that nobody would use the flash this way in the real world, but as an engineer I like to know the limits of my equipment.

This begs the question, "So can I put the 20 flash on to another Sony DSLR and get faster shot-to-shot times?" When used as a fill flash, yes; however you can't use the 20 as a wireless controller on any camera



A wide-angle shot – not enough coverage

other than the A900 (and the A850).

As far as raw power goes, the differences are negligible – the 20 has a guide number of 20, where the A700's flash's guide number is 12. (In the world of guide numbers, the larger the number, the more powerful the flash. As a reference point, the high-end HVL-F58AM has a guide number of – you guessed it – 58.)

Wireless Flash Protocol

It's not very widely known that when the A900 and the large 58 flash were introduced, Sony introduced a brand new wireless flash protocol which offered ratio control and different timings to help address the problem of lazy-eye. The new flash protocol is incompatible with the old flashes, though. So when I got my 20 flash I was concerned that I would not be able to trigger my legacy 56 and 36 flashes.

It turns out that Sony was concerned about this issue too, and made the decision to have the 20 use the OLD wireless flash protocol. This is good news, because it means it can trigger a wider variety of accessory flashes:

- HVL-F58AM
- HVL-F42AM
- HVL-F56AM
- HVL-F36AM
- Minolta 5600HS(D)
- Minolta 3600HS(D)

Older wireless flashes (specifically the xi-series flashes) won't work with this or any DSLR.

Controls

Mechanically, the flash is about as simple as you can get. In keeping with the pop-up flash analogy, you pull it up to turn it on, and push it down to turn it off. (The flash will also automatically turn off and on along with your camera body – a nice feature!) The flash has two small LED's on the back: "On" and "Chg" (charge); there are no other displays or buttons. You can't put the flash into manual output mode (not even on top of an A700 set to manual output).

the frame, and the pre-flash sensor (peering at the focusing screen) can sometimes miss the small object reflecting the weak pre-flash. This can result in a greater number of overexposure errors when shooting flash with wide lenses.

Worse, when shooting a group of people with a wide-angle lens, the distance between the flash and the subject in the far corner is greater than the distance between the flash and the person who's front-and-center, meaning the people in the corner will receive less illumination. The wider the lens, the greater the effect (see photo, top). And so, since I generally avoid shooting wide angle and flash, wide diffusers are a feature I rarely use.

However, there is a feature I wish the flash had instead of the wide diffuser: Instead of moving a diffusion panel in front of the flash tube, I wish I could instead turn the knob and have an Infrared filter appear there.

Why an IR filter?

While it's true that the "Morse-code-like" wireless flash commands which emanate from the 20 are of relatively low intensity and will rarely show up in your shot, there are some shooting conditions (for example when shooting a close subject at a large f/stop like f2.8) where the signals will indeed affect the exposure. (see below, a shot that was designed specifically so that the wireless command flashes would show up in the exposure).



Without IR filter



With IR filter

Since nearly all DSLRs are designed to block infrared light, and since all flashes are designed to receive it, putting an infrared filter in front of the flash will have the flash transmit control signals that are invisible to the camera, yet just as effective at controlling the off-camera flashes.

In my books, I had always advocated taping a strip of exposed and developed color negative film (yes, FILM! Remember that?) and placing it over the pop-up flash, making for an instant and cheap infrared filter for the pop-up, ensuring that the control signals will NEVER show up! Furthermore, putting an IR filter in front of the flash does not seem to affect the distance at which a wireless flash can be triggered.

But in the past, affixing and removing a piece of film on the flash was always kind of a pain. Wouldn't it be great to modify the 20 to be able to just dial-in an infrared filter on demand??

On-Demand IR Filter

I have, in fact, performed such a modification on my 20 flash: I've taken it apart and taped a strip of exposed and developed color negative film on top of the movable wide-angle diffuser. So now invoking the diffuser invokes an IR filter as well. It's a straightforward modification which you can do yourself. And the hardest part is just opening up the case (and voiding the warranty in the process). I never minded voiding the warranty as long as I could get my equipment to do what I wanted.

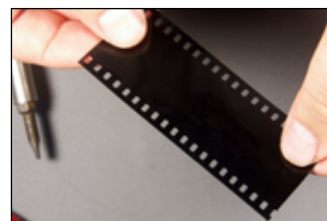
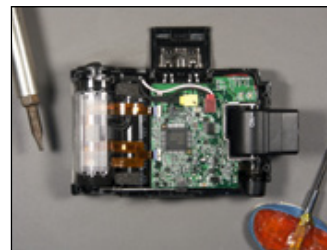
Before I go into how to take the unit apart I should throw in the standard disclaimers: taking a flash apart, even to improve its function, will void the warranty. And although the wires going from the capacitor to the flash tube are pretty well insulated, the possibility of electric shock is always there if you're not careful. If you're not comfortable taking things apart, you might want to enlist the help of a teenager who's into this stuff. But really, in the case of this flash it's pretty straightforward.

So here's how to do it yourself, step-by-step:

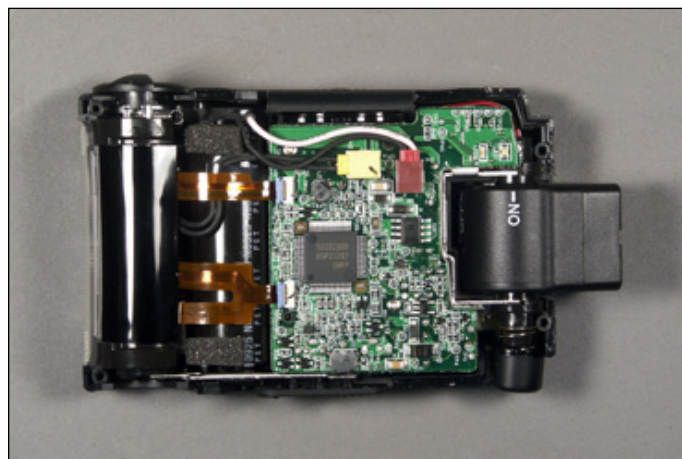
Before you begin, make sure the wide-angle flash diffuser is NOT in front of the flash tube (turn the knob to the "Tele" position).

There are four holes on the back of the flash, each of which is filled in with a small solid rubber tube. You can pull these out rather easily by sticking it with a pin and pulling upward (top photo).

Under the rubber tubes are four Philips-head screws. Using a



Gary Friedman's infrared modification is carried out at your own risk and is not endorsed by the publisher!



small jewelers screwdriver, remove these screws and put them aside.

The two halves of the case are still being held together by internal latches, and to get them apart they must be pried open using a large flat-blade screwdriver. Start from the bottom of the case where the flash hotshoe is; pry the case apart, working your way toward the end which holds the flash (next two pictures).

Be careful not to disturb the physical switch which controls the bounce head. Also try to keep the pieces holding the flash tube in place from coming apart. You can put it back together easily enough, but it's better not to disturb it to begin with.

Now you have the case open as shown in the picture centre left. Our goal is to tape an infrared filter to the wide-angle flash diffuser, visible on the left. Take a piece of fully exposed and developed color negative film and cut it into a strip approximately 3.8cm wide by 1.2cm high.

Affix the piece of film to the wide angle flash diffuser by using a strip of double-stick tape of equal size. You can see the finished modification in the final photo.

Don't try to turn the wheel to turn the flash diffuser while the flash is open; there's something about the design of it that makes this difficult while the case is apart. Once the case is put back together it should turn again quite easily. Put the case back together again and put the 4 screws back in (the pressure of the screws are important!).

Test the new modification. You should be able to turn the wide-angle diffuser panel knob and have the new IR filter rotate to the front of the flash tube.

Now try it on your A900 or A850! With the IR filter in front of the tube, set your camera to MENU>Camera Menu 2>Flash Mode>Wireless.

Take an off-camera flash, attach it to the camera's hot shoe, turn on the flash, and press the camera's shutter release button halfway. This puts the flash into wireless mode. Remove the flash and place it somewhere off-camera, pointing toward your subject. Put the 20 onto your camera, turn it on, and fire a test shot. Your wireless flash should go off and there won't be any control signals in your shot, even if the subject is close and you're shooting wide open!

Now you can be proudly include yourself in the new "DIY" generation of people who improve their products without waiting for manufacturers to do it for them!

Alpha e-Books by Gary Friedman:
www.friedmanarchives.com