ALIEN BEE TEST REPORT

On March 14, 2005, I received three new AB800 monolites and one new AB400, plus accessories. The testing described herein was performed so that I could become familiar with the lights and understand their performance and limitations, and also to make sure that I did not receive a defective unit.

Test Description

I put the lights on light stands, all adjusted to the same 48 inch height above the floor. I put them side by side arranged in a shallow arc so that they were approximately the same distance from the flash exposure meter (Sekonic L518 with fresh batteries) which was mounted on a tripod at a distance of 76 inches from meter dome to modeling lights in the light heads. The light meter dome was 37.5 inches above the floor, which was covered with a dark rug. The meter dome was pointed directly at each light being measured, and each light was pointed directly at the meter. The distance between the left light and the right light was 26 inches. During all measurements, I was seated behind the light meter such that I could not see the dome. All flash units were fitted with the standard 7 inch reflector.

The Sekonic was set to ISO 100. Ambient light in the room as measured by the Sekonic with its hemispherical dome pointed at the lights was f/5.6 @ 1 sec. The flash meter was set to 1/125 sec.

All the AB flash units had power on for approximately one hour prior to testing. AC line voltage was monitored during the tests and remained within 124.0 +/- 0.5 volts.

When testing the flash units in standalone mode (no remote control), all other flashes were disabled (slave triggers disabled by plugging in a dummy sync plug). Modeling lights were off. The flash was triggered by the flash meter button via a sync cord.

All measured data were preceded by two unmeasured flashes after all settings were made.

Before measuring a given flash unit, its power setting slider was exercised by two cycles of full left to full right and back. Then for each power setting, the slider was moved to the desired setting, wiggled back and forth a couple of times about the setpoint, then carefully adjusted to be exactly on the desired setpoint, then tapped a couple of times.

Data points at a given setting were taken at intervals of approximately five seconds. The intervals were not timed, it was just what it took to reach up to the light meter to trigger the flash, read the meter, and record the result.

No color temperature measurements were made.

SUMMARY OF RESULTS

Using Rear Panel Controls

1. Light output consistency at 1/16 power and above was excellent, within 0.1 f-stop over a series of ten flashes at each power setting on each unit.

2. Absolute light output matching among the three AB800s was within 0.1 f-stop at full power. The AB400 was within 0.1 f-stop of being one stop below the AB800s, at full power.

3. At 1/32 power, the AB400 and two of the AB800s exhibited 0.5 stop variations, and one AB800 exhibited 0.7 stop variation over a series of ten flashes.

4. From the full power setting down to the 1/16 power setting, the decrease in light was within about 0.2 stop of the expected value at each setting for all units. The 1/32 setting was always slightly lower.

5. Firing the flash units using their built-in slave triggers gave the same results as using a sync cord from the flash meter. There was no change in consistency.

Using LG4X Wired Remote

Results were very close to the results using rear panel controls. Two of the AB800s exhibited 0.1 stop consistency down to 1/32 power, one AB800 was consistent at 1/16 but showed 0.7 stop variation at 1/32 (using the same channel on the remote). I tested all the remote channels using the AB400, and saw a slight increase in variability compared to using rear panel controls. At 1/16 power, I saw a 0.5 stop variation using one of the remote channels. I really don't know if this is characteristic of the AB400 or the remote. I think larger data sets are required to sort this out.

A Note on Flash Consistency

A couple of times, when I measured a string of data that bounced back and forth between two adjacent 0.1 stop readings of the light meter, I hypothesized that the actual reading was right on the boundary between the two values. I moved the meter about an inch, which at the 76" distance, should be about 0.05 stop, and should shift the light value to be more centered in one of the light meter 0.1 stop bins. When I did that, every reading in a string of 10 or 20 flashes was exactly the same number. This shows that the actual consistency is better than +/- 0.05 stop.

Modeling Light Performance

1. At full power, modeling light output matched within 0.2 f-stop among all the units. (Note: at 24 inches, distance is critical, and some of this variation could have been test setup. 0.2 f-stop = 1.7 inches.)

2. From full power down to 1/16 power, modeling light output tracked the expected values to within 0.1 f-stop. Below that, it dropped about 0.5 stop from expected.

NOTE: The LG4X instructions are not very clear (to me) about setting switches for the modeling lights. In order for the remote to have control of the modeling lights, the flash unit switches must be set to Modeling Lights ON, Tracking ON. The Cycle switch on the flash unit always retains control.

ANOMALY: The only functional anomaly I observed concerns the recycle behavior of the AB400, and was not observed on any of the AB800s. It only occurs on the lowest power setting. Sometimes, after firing the AB400 on the lowest power setting, the red DUMP light comes and the green OK light goes off for about two seconds. This suggests to me that the recharge circuit sometimes overcharges the capacitor and the overcharge has to bleed off before it declares Ready. A further anomalous aspect of this behavior is that if the modeling lights are set to Cycle, meaning that they should turn off when the flash is fired and turn back on when the flash is ready, they turn back on while the red Dump light is still on and before the green OK light comes back on.

Sync Voltage

Sync voltage for all four units ranged from 4.6 to 4.8 volts DC, positive on the center pin.

DATA

Flash Consistency Test, Local Control

AB400, Local control

1/32	f/2.0 + 0.1	f/2.0 + 0.1	f/1.4 + 0.6	f/2.0 + 0.1	f/2.0 + 0.2	f/1.4 + 0.6	f/2.0 + 0.1	f/2.0 + 0.2	f/1.4 + 0.6	f/2.0 + 0.1
1/16	2.8 + 0.2	2.8 + 0.2	2.8 + 0.2	2.8 + 0.2	2.8 + 0.2	2.8 + 0.2	2.8 + 0.2	2.8 + 0.2	2.8 + 0.2	2.8 + 0.2
1/8	4.0 + 0.2	4.0 + 0.4	4.0 + 0.3	4.0 + 0.4	4.0 + 0.3	4.0 + 0.4	4.0 + 0.3	4.0 + 0.4	4.0 + 0.3	4.0 + 0.4
¼	5.6 + 0.4	5.6 + 0.4	5.6 + 0.4	5.6 + 0.5	5.6 + 0.5	5.6 + 0.4	5.6 + 0.4	5.6 + 0.4	5.6 + 0.4	5.6 + 0.4
½	8.0 + 0.3	8.0 + 0.3	8.0 + 0.4	8.0 + 0.3	8.0 + 0.3	8.0 + 0.3	8.0 + 0.3	8.0 + 0.3	8.0 + 0.4	8.0 + 0.3
1	11 + 0.4	11 + 0.3	11 + 0.4	11 + 0.4	11 + 0.4	11 + 0.4	11 + 0.4	11 + 0.4	11 + 0.4	11 + 0.4

AB800 white, Local Control

1/32	2.8 + 0.4	2.8 + 0.2	2.0 + 0.9	2.8 + 0.5	2.8 + 0.2	2.8 + 0.5	2.8 + 0.2	2.8 + 0.5	2.8 + 0.2	2.8 + 0.5	
1/16	4.0 + 0.6	4.0 + 0.5	4.0 + 0.5	4.0 + 0.5	4.0 + 0.5	4.0 + 0.5	4.0 + 0.5	4.0 + 0.5	4.0 + 0.5	4.0 + 0.5	4.0 + 0.5
1/8	5.6 + 0.7	5.6 + 0.7	5.6 + 0.7	5.6 + 0.7	5.6 + 0.7	5.6 + 0.7	5.6 + 0.7	5.6 + 0.7	5.6 + 0.7	5.6 + 0.7	5.6 + 0.7
¼	8.0 + 0.8	8.0 + 0.8	8.0 + 0.7	8.0 + 0.8	8.0 + 0.7	8.0 + 0.7	8.0 + 0.8	8.0 + 0.8	8.0 + 0.7	8.0 + 0.7	8.0 + 0.7
½	11 + 0.7	11 + 0.7	11 + 0.7	11 + 0.7	11 + 0.7	11 + 0.6	11 + 0.6	11 + 0.6	11 + 0.6	11 + 0.7	11 + 0.6
1	16 + 0.5	16 + 0.5	16 + 0.5	16 + 0.5	16 + 0.5	16 + 0.5	16 + 0.5	16 + 0.5	16 + 0.5	16 + 0.5	16 + 0.5

AB800 green, Local Control

1/32	2.8 + 0.1	2.8 + 0.5	2.8 + 0.2	2.8 + 0.5	2.8 + 0.0	2.8 + 0.5	2.8 + 0.2	2.8 + 0.5	2.8 + 0.0	2.8 + 0.5
1/16	4.0 + 0.6	4.0 + 0.5	4.0 + 0.6	4.0 + 0.6	4.0 + 0.6	4.0 + 0.6	4.0 + 0.6	4.0 + 0.6	4.0 + 0.6	4.0 + 0.6
1/8	5.6 + 0.6	5.6 + 0.6	5.6 + 0.6	5.6 + 0.6	5.6 + 0.6	5.6 + 0.6	5.6 + 0.6	5.6 + 0.6	5.6 + 0.7	5.6 + 0.7
¼	8.0 + 0.6	8.0 + 0.6	8.0 + 0.7	8.0 + 0.6	8.0 + 0.6	8.0 + 0.7	8.0 + 0.7	8.0 + 0.6	8.0 + 0.6	8.0 + 0.6
½	11 + 0.6	11 + 0.6	11 + 0.6	11 + 0.6	11 + 0.6	11 + 0.6	11 + 0.6	11 + 0.6	11 + 0.6	11 + 0.5
1	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4

AB800 yellow, Local Control

1/32	2.0 + 0.8	2.0 + 0.4	2.8 + 0.0	2.8 + 0.4	2.8 + 0.1	2.8 + 0.5	2.8 + 0.0	2.0 + 0.9	2.8 + 0.4	2.8 + 0.1
1/16	4.0 + 0.5	4.0 + 0.4	4.0 + 0.5	4.0 + 0.4	4.0 + 0.4	4.0 + 0.4	4.0 + 0.4	4.0 + 0.4	4.0 + 0.5	4.0 + 0.4
1/8	5.6 + 0.6	5.6 + 0.6	5.6 + 0.6	5.6 + 0.6	5.6 + 0.6	5.6 + 0.6	5.6 + 0.6	5.6 + 0.6	5.6 + 0.6	5.6 + 0.6
¼	8.0 + 0.6	8.0 + 0.7	8.0 + 0.6	8.0 + 0.6	8.0 + 0.6	8.0 + 0.6	8.0 + 0.6	8.0 + 0.6	8.0 + 0.6	8.0 + 0.6
½	11 + 0.5	11 + 0.5	11 + 0.5	11 + 0.5	11 + 0.5	11 + 0.5	11 + 0.5	11 + 0.5	11 + 0.5	11 + 0.5
1	16 + 0.4	16 + 0.5	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4

Flash consistency test using built-in slave triggers.

Used Canon 550EX Speedlite in manual mode set to 1/128 power. Speedlite was kept behind the light meter where it could not see the dome. Speedlite was zoomed to 105mm and aimed at wall/ceiling behind ABs. Flash meter could not register the Speedlite flash.

Test was only performed at lowest power setting of AB400.

AB400, Slave Trigger

1/32	2.0 + 0.0	2.0 + 0.1	2.0 + 0.1	2.0 + 0.1	2.0 + 0.1	1.4 + 0.6	2.0 + 0.1	2.0 + 0.1	2.0 + 0.1	2.0 + 0.1
	2.0 + 0.1	2.0 + 0.1	2.0 + 0.1	2.0 + 0.1	2.0 + 0.1	2.0 + 0.1	2.0 + 0.2	2.0 + 0.0	2.0 + 0.1	

AB400, Sync cord trigger (for comparison with above)

1/32	2.0 + 0.2	2.0 + 0.1	2.0 + 0.2	2.0 + 0.1	2.0 + 0.1	2.0 + 0.1	2.0 + 0.2	2.0 + 0.1	2.0 + 0.2	1.4 + 0.6
	2.0 + 0.1	2.0 + 0.1	2.0 + 0.1	2.0 + 0.1	2.0 + 0.1	2.0 + 0.2	2.0 + 0.1	2.0 + 0.2	2.0 + 0.1	2.0 + 0.1

Flash consistency test using LG4X Wired Remote.

The first test was using all four remote channels on the AB400. Then one remote channel was used on all three AB800s.

The remote sliders were exercised as described as for the rear panel sliders.

AB400, Remote Channel #1

Left Limit	2.8 + 0.4	2.8 + 0.2	2.0 + 0.6	2.0 + 0.6	2.0 + 0.6	2.0 + 0.6	1.4 + 0.2	1.4 + 0.9	1.4 + 0.6	1.4 + 0.6	1.4 + 0.5
	1.4 + 0.5	1.4 + 0.5	1.4 + 0.5	1.4 + 0.5	1.4 + 0.5	1.4 + 0.5	1.4 + 0.5	1.4 + 0.5	1.4 + 0.6	1.4 + 0.5	1.4 + 0.5
1/32	2.0 + 0.8	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7
1/16	2.8 + 0.6	2.8 + 0.9	2.8 + 0.6	2.8 + 0.9	2.8 + 0.9	2.8 + 0.6	2.8 + 0.9	2.8 + 0.9	2.8 + 0.9	2.8 + 0.9	2.8 + 0.9
1/8	4.0 + 0.8	4.0 + 0.7	4.0 + 0.8	4.0 + 0.8	4.0 + 0.7	4.0 + 0.8	4.0 + 0.7	4.0 + 0.8	4.0 + 0.8	4.0 + 0.8	4.0 + 0.8
1/4	5.6 + 0.4	5.6 + 0.4	5.6 + 0.4	5.6 + 0.5	5.6 + 0.4	5.6 + 0.4	5.6 + 0.5	5.6 + 0.4	5.6 + 0.4	5.6 + 0.4	5.6 + 0.5
1/2	8.0 + 0.4	8.0 + 0.3	8.0 + 0.3	8.0 + 0.3	8.0 + 0.3	8.0 + 0.3	8.0 + 0.3	8.0 + 0.3	8.0 + 0.3	8.0 + 0.3	8.0 + 0.3
1	11 + 0.3	11 + 0.3	11 + 0.3	11 + 0.3	11 + 0.3	11 + 0.3	11 + 0.3	11 + 0.3	11 + 0.3	11 + 0.3	11 + 0.3

AB400, Remote Channel #2

Left Limit	1.4 + 0.7	1.4 + 0.6	1.4 + 0.6	1.4 + 0.6	1.4 + 0.6	1.4 + 0.7	1.4 + 0.7	1.4 + 0.6	1.4 + 0.6	1.4 + 0.7	1.4 + 0.6
1/32	2.0 + 0.7	2.0 + 0.4	2.0 + 0.7	2.0 + 0.2	2.0 + 0.9	2.0 + 0.3	2.0 + 0.9	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7
1/16	2.8 + 0.9	2.8 + 0.9	2.8 + 0.9	4.0 + 0.0	2.8 + 0.9	2.8 + 0.9	4.0 + 0.0	2.8 + 0.9	4.0 + 0.0	4.0 + 0.1	
1	11 + 0.3	11 + 0.3									

AB400, Remote Channel #3

Left Limit	1.4 + 0.8	1.4 + 0.7	1.4 + 0.5	1.4 + 0.6	1.4 + 0.6	1.4 + 0.6	1.4 + 0.6	1.4 + 0.5	1.4 + 0.6	1.4 + 0.6	
1/32	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7	2.0 + 0.8	2.0 + 0.7	2.0 + 0.7	
1	11 + 0.4	11 + 0.3	11 + 0.4								

AB400, Remote Channel #4

Left Limit	1.4 + 0.7	1.4 + 0.7	1.4 + 0.7	1.4 + 0.7	1.4 + 0.6	1.4 + 0.6	1.4 + 0.6	1.4 + 0.5	1.4 + 0.6	1.4 + 0.6	1.4 + 0.6
1/32	2.0 + 0.8	2.0 + 0.7	2.0 + 0.8	2.0 + 0.8	2.0 + 0.8	2.0 + 0.7	2.0 + 0.8	2.0 + 0.8	2.0 + 0.8	2.0 + 0.8	2.0 + 0.8
1	11 + 0.4	11 + 0.3	11 + 0.3	11 + 0.3							

AB800 white, Remote Channel #4

Left Limit	2.0 + 0.8	2.0 + 0.7	2.0 + 0.8	2.0 + 0.8	2.0 + 0.9	2.0 + 0.7	2.0 + 0.8	2.0 + 0.9	2.0 + 0.8	2.0 + 0.8	
1/32	2.8 + 0.7	2.8 + 0.2	2.8 + 0.5	2.8 + 0.2	2.8 + 0.6	2.8 + 0.8	2.8 + 0.7	2.8 + 0.8	2.8 + 0.8	2.8 + 0.1	
1/16	5.6 + 0.0	5.6 + 0.0	5.6 + 0.0	5.6 + 0.0	5.6 + 0.0	5.6 + 0.0	5.6 + 0.0	5.6 + 0.0	5.6 + 0.0	5.6 + 0.0	
1	16 + 0.5	16 + 0.5	16 + 0.4	16 + 0.5	16 + 0.4	16 + 0.5	16 + 0.4	16 + 0.5	16 + 0.4	16 + 0.4	

AB800 green, Remote Channel #4

Left Limit	2.0 + 0.8	2.0 + 0.8	2.0 + 0.8	2.0 + 0.7	2.0 + 0.8	2.0 + 0.3	2.0 + 0.0	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7	
1/32	4.0 + 0.4	4.0 + 0.4	4.0 + 0.4	4.0 + 0.4	4.0 + 0.4	4.0 + 0.4	4.0 + 0.4	4.0 + 0.4	4.0 + 0.4	4.0 + 0.4	4.0 + 0.4
1	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.3	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	

AB800 yellow, Remote Channel #4

Left Limit	2.0 + 0.7	2.0 + 0.7	2.0 + 0.8	2.0 + 0.8	2.0 + 0.7	2.0 + 0.7	2.0 + 0.7	2.0 + 0.8	2.0 + 0.7	2.0 + 0.6	2.0 + 0.7
1/32	2.8 + 0.8	2.8 + 0.6	2.8 + 0.8	2.8 + 0.8	2.8 + 0.8	2.8 + 0.7	2.8 + 0.7	2.8 + 0.7	2.8 + 0.7	2.8 + 0.8	2.8 + 0.7
1	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4	16 + 0.4

Repeating remote test on AB400:

AB400, Remote Channel #1

Left Limit	1.4 + 0.9	1.4 + 0.9	1.4 + 0.5	1.4 + 0.4	1.4 + 0.4	1.4 + 0.4	1.4 + 0.4	1.4 + 0.4	1.4 + 0.4	1.4 + 0.4	1.4 + 0.4
	1.4 + 0.4	1.4 + 0.4	1.4 + 0.4	1.4 + 0.4	1.4 + 0.4						
1/32	2.0 + 0.1	2.0 + 0.7	2.0 + 0.0	2.0 + 0.7	2.0 + 0.1	2.0 + 0.8	2.0 + 0.3	2.0 + 0.2	2.0 + 0.8		
1/16	4.0 + 0.0	2.8 + 0.9	4.0 + 0.0	4.0 + 0.0	2.8 + 0.9	2.8 + 0.9	4.0 + 0.0	2.8 + 0.9	4.0 + 0.0	2.8 + 0.9	

AB400, Remote Channel #2

Left Limit	1.4 + 0.6	1.4 + 0.5	1.4 + 0.5	1.4 + 0.5	1.4 + 0.5	1.4 + 0.5	1.4 + 0.4	1.4 + 0.7	2.0+ 0.2	1.4 + 0.5	1.4 + 0.4
	1.4 + 0.5	1.4 + 0.5	1.4 + 0.4								
1/32	2.0 + 0.6	2.0 + 0.6	2.0 + 0.6	2.0 + 0.6	2.0 + 0.6	2.0 + 0.6	2.0 + 0.6	2.0 + 0.6	2.0 + 0.6	2.0 + 0.6	2.0 + 0.1
	2.0 + 0.7	2.0 + 0.6									
1/16	2.8 + 0.8	2.8 + 0.8	4.0 + 0.0	2.8 + 0.9	2.8 + 0.9	4.0 + 0.0	4.0 + 0.0	4.0 + 0.0	4.0 + 0.0	4.0 + 0.0	4.0 + 0.0
	4.0 + 0.0										

AB400, Remote Channel #3

Left Limit	1.4 + 0.5	2.0 + 0.1	2.0 + 0.1	1.4 + 0.6	2.0 + 0.0	2.0 + 0.1	1.0 + 0.5	2.0 + 0.1	2.0 + 0.0	1.4 + 0.5	1.4 + 0.5
1/32	2.0 + 0.7	2.0 + 0.7	2.0 + 0.6	2.0 + 0.6	2.0 + 0.6	2.0 + 0.6	2.0 + 0.6	2.0 + 0.6	2.0 + 0.7	2.0 + 0.6	2.0 + 0.6
1/16	2.8 + 0.8	2.8 + 0.7	2.8 + 0.8	2.8 + 0.8	2.8 + 0.5	2.8 + 0.9	4.0 + 0.0	2.8 + 0.8	2.8 + 0.8	2.8 + 0.8	

Modeling Light Test

Sekonic dome 24" from modeling light, on axis. Used LG4X Wired Remote to control modeling lights. Dark room, below ability of Sekonic to measure ambient.

AB400

1	1/2	1/4	1/8	1/16	1/32	Left Limit
f/16 + 0.0	11 + 0.0	8 + 0.1	5.6 + 0.0	4.0 + 0.1	2.0 + 0.9	2.0 + 0.0

AB800 white

1	1/2	1/4	1/8	1/16	1/32	Left Limit
f/11 + 0.8	8+ 0.8	5.6 + 0.9	4.0 + 0.8	2.8 + 0.6	2.0 + 0.2	1.4 + 0.4

AB800 green

1	1/2	1/4	1/8	1/16	1/32	Left Limit
f/16 + 0.0	11 + 0.0	8 + 0.1	5.6 + 0.0	4.0 + 0.0	2.0 + 0.6	1.4 + 0.8

AB800 yellow

1	1/2	1/4	1/8	1/16	1/32	Left Limit
f/11 + 0.8	8 + 0.8	5.6 + 0.9	4.0 + 0.9	2.8 + 0.8	2.0 + 0.4	1.4 + 0.6

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