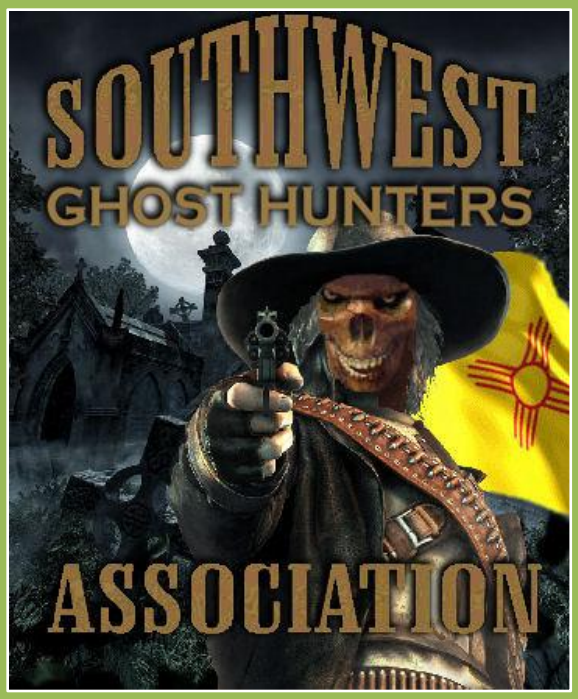
2012

Research/ Investigation Report: Shaffer Hotel, Mountainair, New Mexico



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Southwest Ghost Hunter's Association

Location: Shaffer Hotel, Mountainair, New Mexico

Date: May 26, 2012

Weather: Windy with gusts to 30 mph, temperatures in the high 70's and low 80's

Equipment Used: G.E.I.S.T. video system, 3 digital audio recorders, modified external microphone pair (notated as Xmic and live mic), Natural Trifield Meter, prototype coil magnetic sensor, IR still camera, standard video camera

Personnel: Sarah, Spanky, Derek, Holly, Blu, and Greg

Site Description

The Shaffer Hotel was built in 1923 by Clem "Pop" Shaffer who moved to Mountainair in 1908 with his wife Pearl to practice his blacksmith trade. He set up his blacksmith shop with an adjacent hardware and casket making shop on Main Street, but Pearl died of pneumonia before the end of their first year in town. Shaffer married his second wife, Lena Imboden, a native of Mountainair, in 1913. The two were fortunate enough to strike good water behind the blacksmith shop and the Shaffer's began selling piped water to the nearby businesses as well as barrels to local residents at 10 cents a barrel. They were unfortunate enough that the blacksmith shop and hardware store burned down in 1922.

Figure 1: Original Shaffer blacksmith shop on the site of the current hotel

Local residents convinced Shaffer to build a hotel on the site of his old shop and, understandably dubious of wooden structures, he built the cast-concrete Shaffer Hotel, the concrete reinforced with iron scraps or fractions from his now defunct blacksmith business. He continued to make modifications on the property, adding the restaurant in 1929 with its original ceiling artwork and chandeliers, and the rock inlaid fence surrounding the property (Albuquerque Journal, 8/27/01). There are unconfirmed reports that a Ford dealership and garage once operated behind the hotel and also that the coffin workshop continued. Shaffer died in 1964 and Lena, who ended up running the hotel when Shaffer became a full time artist, died in 1978, shortly before the hotel was placed on the National Register of Historic Places.


Figure 2: Clem "Pop" Shaffer in his later years

Ownership then went through a series of owners, many from out of state, until it finally closed its doors without notice in May of 2000 (Albuquerque Journal, 5/4/00). The Bank of Belen foreclosed on the property in the summer of 2001 and auctioned it off on the steps of the Torrance County Courthouse in September of that year, with the bank itself being the sole bidder and buying the property for resale (Albuquerque Journal, 9/6/01). Despite being purchased in 2002 by a pair of antique dealers from California who had hopes of renovating

the hotel, nothing much was done and the hotel fell into disrepair.

In 2004, Joel Marks purchased the hotel and began a $1 million renovation that took the original 30 guest rooms down to 19, many with private bathrooms. The hotel reopened in December of 2005 (Albuquerque Journal, 1/23/06). This is when the first published reports of hauntings at the hotel appear. Marks claimed that the east hallway upstairs was the most haunted part of the hotel, possibly, he speculated, because it is directly above the hand painted ceiling of the restaurant that Shaffer dedicated so much time to. The hotel changed hands again in January of 2011 when Emma Pack and her husband purchased the property. In a strange coincidence, shortly after the purchase, their home in Willard burned down, much like the Shaffer's did in 1928 (Mountain View Telegraph, 3/17/11).

Ghosts reported at the hotel include both Shaffer and his wife Lena, a cowboy that is said to have hung himself in the bathroom between current rooms 17 and 18, a "big fat lady all white with a big yellow and red face", a woman who cooks in the restaurant kitchen, and a ghostly little girl, possibly the victim of a brutal rape and murder. Reported phenomenon include apparitions of the fat lady, the cowboy, and the cooking woman, footsteps walking right behind people, movement of window blinds, a woman's "confrontational" voice coming from the lobby, and the sound of a little girl laughing. The location of the cowboy hanging story may be suspect since, before the remodel, there were only two bathrooms in the building, so the shared bathroom between rooms 17 and 18 was most likely constructed during the 2005 remodel when 11 bathrooms were added to the hotel.

The layout of the two floors of the hotel that were investigated is shown in Figures 3 through 5. The hunt was confined to the game room and conference room on the first floor, and the Abo Suite and rooms 17 and 18 on the second floor.

Figure 3: Current Shaffer Hotel with locations noted

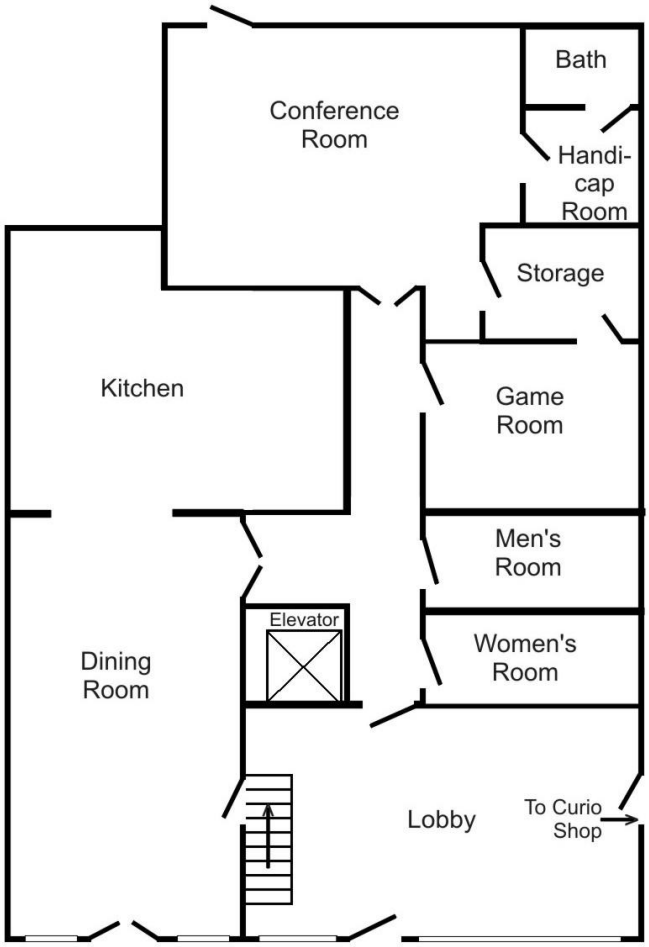

Figure 4: Layout of ground floor of eastern portion of the hotel (not to scale)

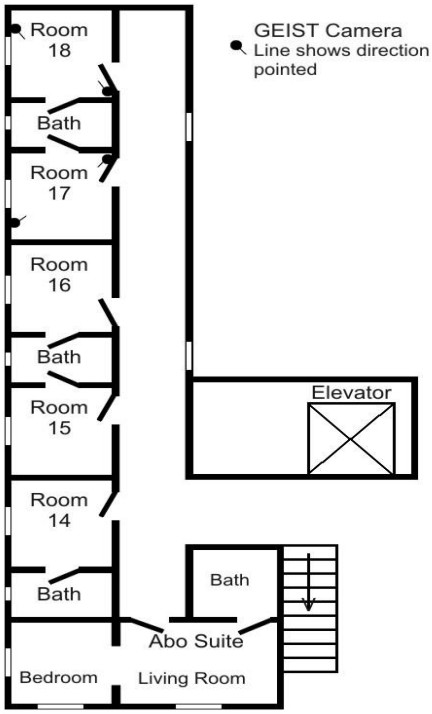

Figure 5: Layout of second floor of the eastern portion of the hotel (not to scale). Solid circles show locations of G.E.I.S.T. cameras with lines showing direction each camera was pointed

Operations

The hunt began by setting up the G.E.S.T. cameras in Rooms 17 and 18. Initially, one camera was installed in each room, one in the hallway pointing towards the Abo Suite and an attempt to install a telemetered camera in the Abo Suite. Unfortunately, the telemetry was not working and, with further consideration, in order to have confirming video of any anomalies recorded, it was decided to put two cameras in each of Rooms 17 and 18 as shown in Figure 5. The recording system was started at 8:17 pm in continuous recording mode.

After the G.E.I.S.T. system was started, the team moved on to do a series of EVP sessions at various locations in the hotel. The EVP sessions were recorded on the two SONY digital recorders with one recorder connected to the Xmic (long microphone cord) and the other to the live mic (short microphone cord). In addition, each session was filmed with the stationary video camera. Other data collected during each session were still IR photos taken at the operators discretion, a Natural Trifield Meter set in the SUM mode with the audible alarm activated, and a prototype magnetic sensor consisting of a passive coil fed through an amplifier and an external sound card and recorded as a sound file on a PC. All members of the team were present for each of the sessions except for Session 9, when the teams split up into teams of two people each with one recorder for each team and no auxiliary equipment except the G.E.I.S.T system. Times, locations, and events occurring during the EVP sessions are as follows:

EVP Session 1 8:43pm – Abo Suite Bedroom: No anomalous events during this session

EVP Session 2 9:02pm – Abo Suite Living Room: Shortly after Spanky asked the question about the flowers at about 3:07 into the recording, several members heard a tapping that seemed to come from behind Spanky near the bathroom door. About a minute and a half later at 4:45, the Xmic thermos shifted on the chair bumping into the Trifield Meter and setting it off.

EVP Session 3 – Room 18: No anomalous events occurred during this session.

EVP Session 4 9:26pm – Room 18: No anomalous events during this session.

EVP Session 5 10:34pm – Room 17: A train passing during much of this session added excessive background noise. A knocking sound was heard by some team members from the chest of drawers in the room. In addition, one team member heard the door to the bathroom creak at one point during the session.

EVP Session 6 10:56pm – Game Room: This was the most active of the sessions. At about 2:23 into the session, the monitor of Derek's camera suddenly started showing just snow. Derek checked it out, but none of the buttons functioned, then it went dead. This was not the normal way the monitor shuts down when the batteries die. A few minutes later, at 5:17, a pool cue that had been leaning against one of the pool tables in the room when we arrived, slid down the table and fell to the floor. No one was near it when this happened, although both Holly and Greg were leaning on the pool table at the time. Video captured this event. Near the end of the session at 8:04 a sound much like a sliding door was heard in the hallway just outside the room. Blu investigated, but could find no apparent source for the noise (could it have been the elevator door??)

EVP Session 7 11:25pm – Game Room: Another EVP session was done immediately following Session 6 because of all the activity. No anomalous events occurred during this session.

EVP Session 8 11:36pm – Conference Room: The sliding door sound was heard again at about 3:38. No other anomalous events occurred during this session.

EVP Session 9a – Abo Suite Living Room: For session 9, we broke down into three groups of two people each. Derek and Sarah were in the Abo Suite Living Room. No anomalous event occurred during their session.

EVP Session 9b – Holly and Greg were in Room 17. There was a semi-responsive tapping that occurred under the window, but seemed somewhat random and was probably just building settling. A floor creak was heard about 6:35 into the session.

EVP Session 9c – Blu and Spanky were in Room 18. No anomalous events occurred during their session.

The hunt ended around 12:30 am with the shutting off of the G.E.I.S.T. system.

Data Analysis

Potential EVP's

Several potential EVP's were captured during the sessions. These are still considered potential since comparison with controls has not been done. One problem with using the Xmic is that two recorders are tied up, leaving less equipment for controls. In the case of this hunt, digital recorder data can be compared with the audio of the videos taken during the sessions. This has yet to be completed, and thus the listing of these as "potential" EVP's. The game room seemed to produce the most EVP's in both Session 6 and 7. The potential EVP's and their approximate time, as well as one interpretation of what is being said are given below:

Session 1, 2:53 Holly asks "Are you a man that lives in this room?". In response, there is a female humming or singing. This could be the wind, but the wind was blowing hard all through this session and this is the only time the humming occurs.

Session 5, 4:31 Derek asks "Did you know the little girl that was up here?". Response could be "warning" or "poor thing". This is not a high quality EVP.

Session 6, 5:30 Holly says "I like playing with you". Response is something like "Put the toy away". This was the best of the EVP's captured, but may be one of the team members talking and needs to be confirmed by comparing to the video.

Session 6, 5:35 Two potential EVP's here, one before and one after Spanky asks "Cause it's a little girl, right?". Before the question is a possible voice saying "Get out" and after is the answer "No". These occur immediately after the EVP described above.

Session 7, 0:07 Happens during startup of session just after Greg says "Yes". This EVP is unintelligible, but quite loud. May be team members laughing.

Session 7, 1:38 Holly asks "Please?" Following is what sounds like a little girl or woman gasping.

Session 7, 4:53 This one occurs at the end a long lull in the EVP session just after a loud click and before Derek asks the question "Do you like electronic things?". Sounds like "Derek".

Session 7, 7:22 Holly asks "It would be a little fun, right?". A woman's voice responds "Right".

Comparison of Xmic, Live mic, and Coil Sensor

The Xmic used for these tests is simply a microphone with the pressure diaphragm sensing element removed so that only the coil that detects the motion of the diaphragm remains. The theory is that any magnetic signature that occurs when the live mic is recording an EVP should also be picked up by the co-located Xmic

separate from any audio signal interference. Likewise, should any voices occur on the Xmic recording, we will know that it could not possibly be a true audio signal, but must be an EVP created electronically.

The coil sensor is very similar to the Xmic in that it consists of a wire coil fed through an amplifier circuit and then connected to the PC through one channel of an off-the-shelf external sound card. The coil signal is recorded as an audio signal using standard Microsoft Sound Recorder software. This type of sensor will be sensitive to magnetic field fluctuations, including AC magnetic fields, and should show primarily the background AC magnetic noise in the environment, including any magnetic transient short-lived signals.

With all three of these sensors being recorded simultaneously during this hunt, it gave us one of our first opportunities to test this set-up in the field. During EVP Session 3 in Room 18, the Xmic picked up strong magnetic interference occurring as a sequence of spikes. Similar spike interference occurred from 1:21 to 1:34, 2:27 to 2:42, 3:00 to 3:05, 4:39 to 4:45, and 5:13 to the end of the session at 5:32. In playback on audio, these spikes sound like a series of short buzzes. As hoped, the other two sensors were able to detect the same magnetic field noise at the same times, as seen in the spectrograms in Figure 6. Spectrograms are simply a way to display the changes in frequency content of a signal as a function of time, with time along the horizontal axis, frequency along the vertical axis, and the strength of each frequency displayed as a color with red being stronger frequencies. This figure shows that a series of magnetic spikes is detected on all three sensors during the same time period. The spikes are strongest on the Xmic, readily visible on the live mic, and faintly visible on the coil sensor, though mostly obscured by the background 60 Hz noise.

The frequency color bands within each spike that look like a series of horizontal lines with the strongest (darkest red) between 400 Hz and 500 Hz are a harmonic sequence indicating that these are almost certainly coming from an unknown man-made source. The time sequence of spikes is even the same between the Xmic and the live mic, though shifted about 0.25 seconds due to a slight mismatch in the starting time of the recorders. This can be most easily seen comparing the spike occurring at 151 seconds on the Xmic with that occurring about 0.25 seconds later on the live mic. These results demonstrate that both the Xmic and the coil sensor are working as anticipated.

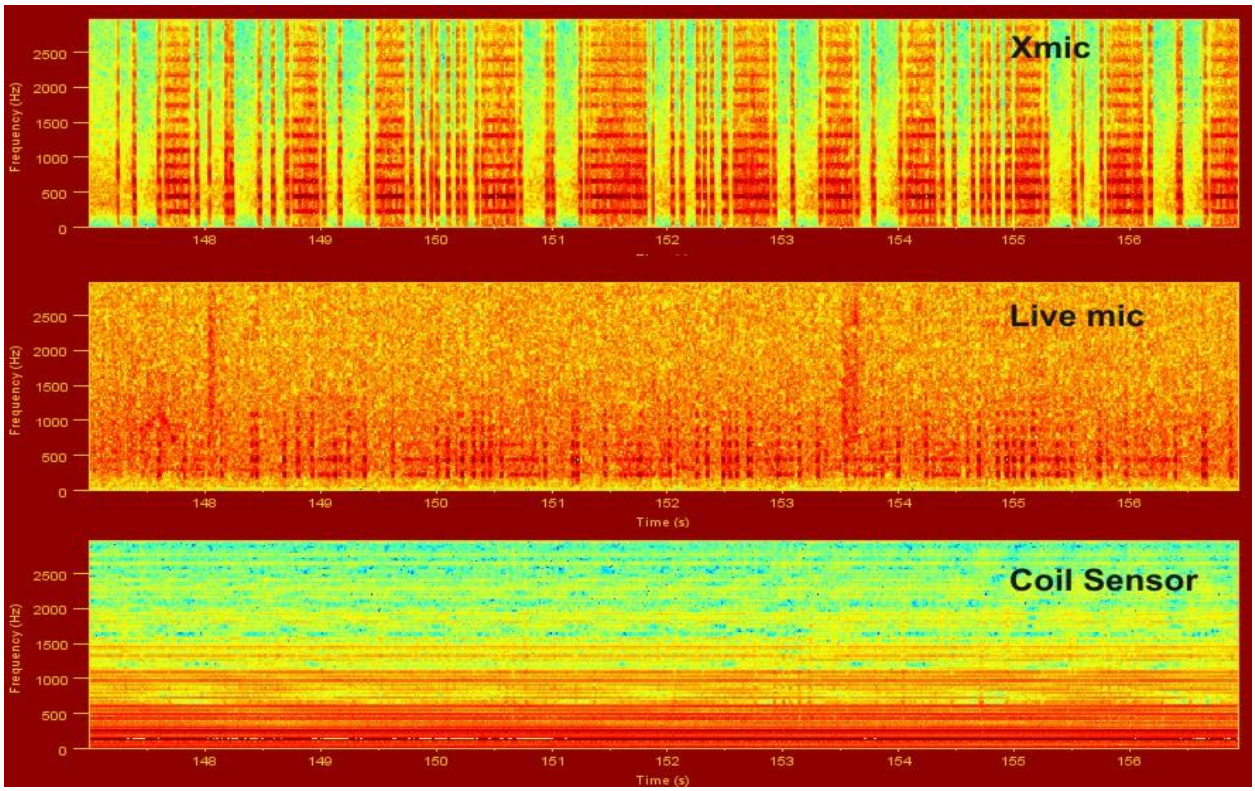

Figure 6: Comparison of Xmic, live mic, and coil sensor spectrograms for a time period during EVP Session 3 that contains magnetic interference.

Pool Cue Fall Analysis

The most interesting event of the night occurred during EVP Session 6 in the game room when a pool cue that had been leaning on one of the two pool tables in the room when we arrived fell over seemingly on its own. The event was captured on video, as well as occurring when the microphones, Natural Trifield Meter, prototype coil sensor, and IR still camera were all in use giving us a good data set to analyze.

The location of the team members and equipment during the session, as well as the layout of the room, are shown in Figures 7 and 8.

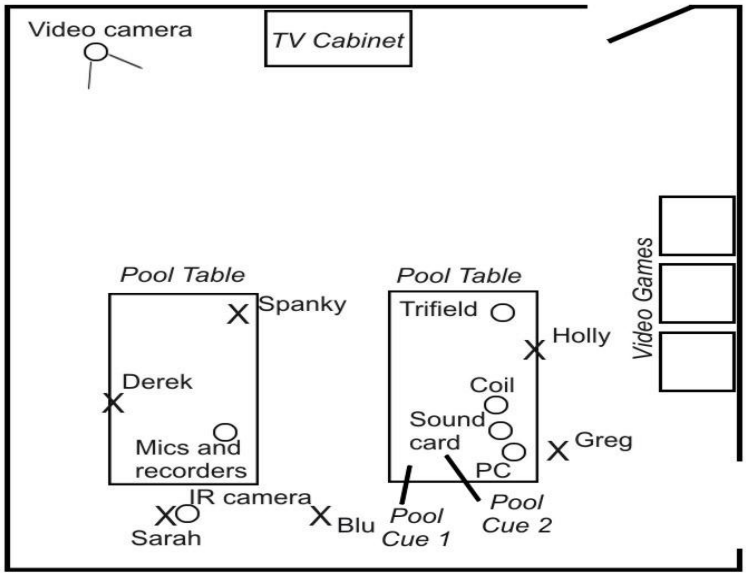

Figure 7: Layout of game room showing locations of team members and instrumentation during the event, as well as the initial positions of the pool cue that fell (1) and the pool cue it hit on the way down (2)

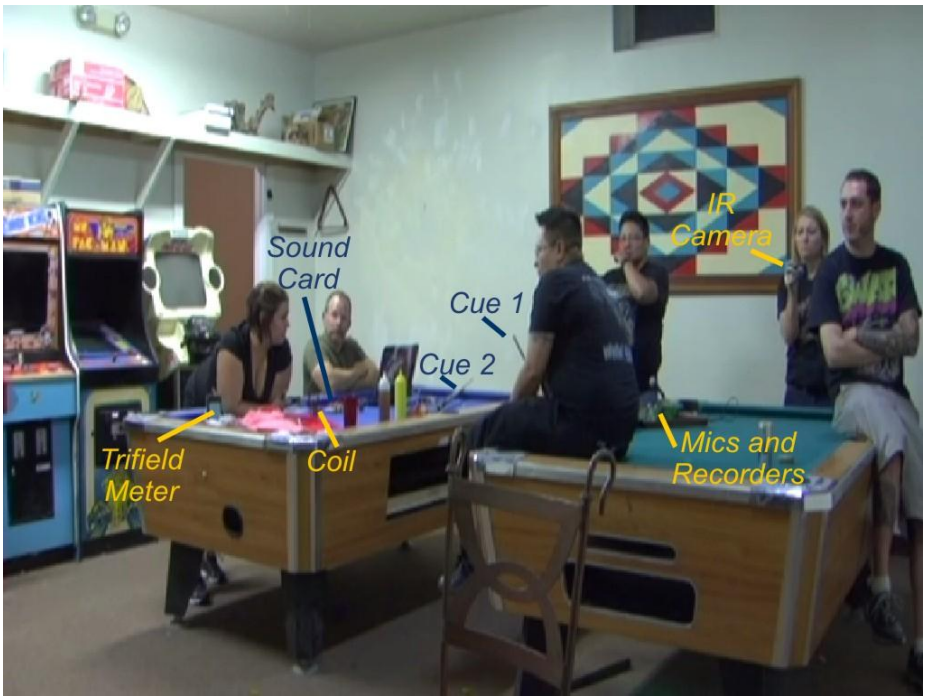

Figure 8: Frame from video showing positions of team members and instruments as well as the initial positions of the pool cues

The pool cue that fell was initially resting on the raised metal corner of the pool table (these corners can be seen in Figure 8). The sequence of events was as follows: At about 5:13 into the EVP session, Spanky starts

to ask a question with “If you’re the little girl that’s here…” at which time, the alarm on the Natural Trifield Meter, set on SUM, goes off briefly, causing Spanky to pause. About two and a half seconds later, Spanky resumes the question saying “there’s…” at which point Blu notices that the pool cue has begun to slide silently along the metal corner and turns her head in that direction. About a second later, while Blu is still reacting, the pool cue slides off the metal corner with a sharp crack that gets everyone’s attention and then slides downward along the edge of the table, hitting the second pool cue that was lying half on the table and then falling to the floor. The total duration of the event from when the Trifield Meter goes off until the pool cue hits the floor was about 7 seconds.

Initially it was thought that perhaps Holly or Greg moving the table caused the cue to fall. To test this, the cue was set up again leaning against the table and the table was bumped repeatedly to get it to fall. It was found that the weight and stability of the table would require that the table be bumped excessively hard, much harder than the slight movements of Holly or Greg displayed in the video, in order to get the cue to fall. As will be seen later, no motion of the table is detected during the video either.

A second theory was that Blu may have inadvertently hit the cue and caused it to fall. From the video, she appears to be near the cue, but she is blocked by Spanky at the critical time. An examination of the pictures taken by the still camera just prior to the pool cue falling were serendipitous in that the positions of both Blu and the cue were captured in the reflection on the TV screen as seen in Figure 9. From this image, it can be seen that Blu is well away from the pool cue. The next image on the camera was taken only 14 seconds later according to the EXIF data of the pictures and shows the cue on the floor. Blu did not change locations from what is seen in the reflection during the video and therefor is most likely not the cause of the pool cue falling.

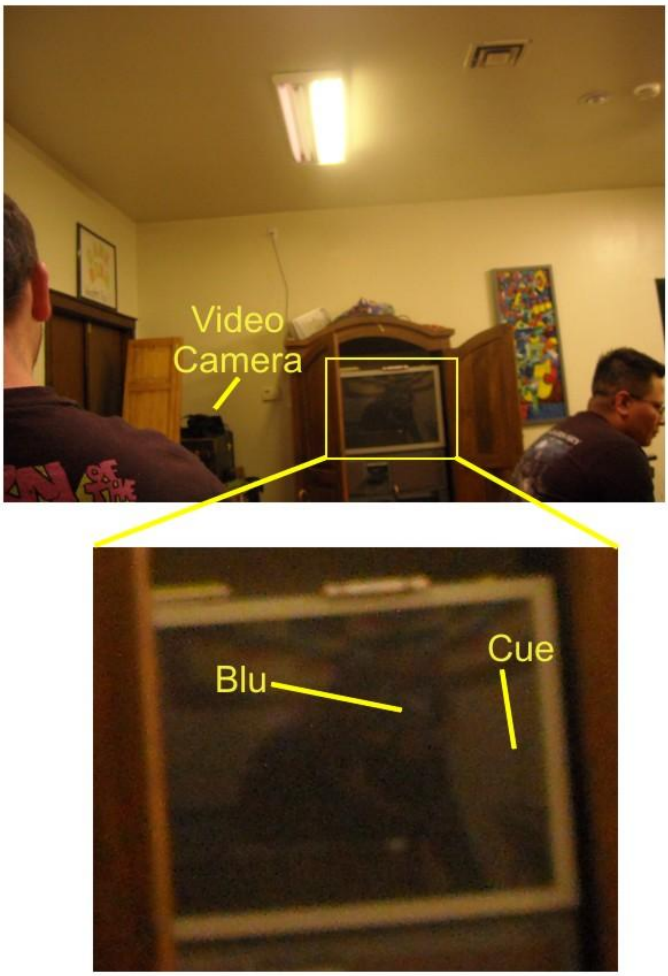

Figure 9: Position of Blu relative to the pool cue as captured in the reflection in the TV screen

With the Trifield alarm having gone off apparently within a few seconds of when the pool cue fell, it was hoped that some kind of anomaly was captured on the prototype sensor. An examination of the coil sensor data for the same time period showed no apparent anomalies. However, recording of the coil sensor data makes use of an external sound card, as mentioned before, and only uses one channel of the card even though both channels are recorded. The second channel is just an open channel and will pick up ambient electrical noise. This open channel did pick up an unusual event at nearly the same time, consisting of a small electrical transient of about 0.01 seconds in duration (Figure 10). Spectral content shows that this transient is confined to frequencies below 600 Hz and shows no dominant frequency bands as were seen in Figure 6, indicating that the source may not be manmade. Also, since it did not show up on either the coil sensor or the Xmic, the transient was not a magnetic field change, but rather an electrical field change which is much less likely to be caused by manmade sources and actually requires the motion of charged particles or ions. This was the only such anomaly recorded during the hunt. Initially it was thought that this transient may be a natural sferic (long range lightning) signature, but it's duration is 10 to 20 times shorter than sferic signatures and sferics are dominated by an 8 Hz frequency, not with the broad band of higher frequencies seen here.

Unfortunately, the coil sensor is not time synchronized to the audio that captured the Trifield alarm so we can only say that the electrical anomaly recorded occurred within a couple seconds of the Trifield alarm and not with certainty that they were responding to the same electrical event, which is what is suspected.

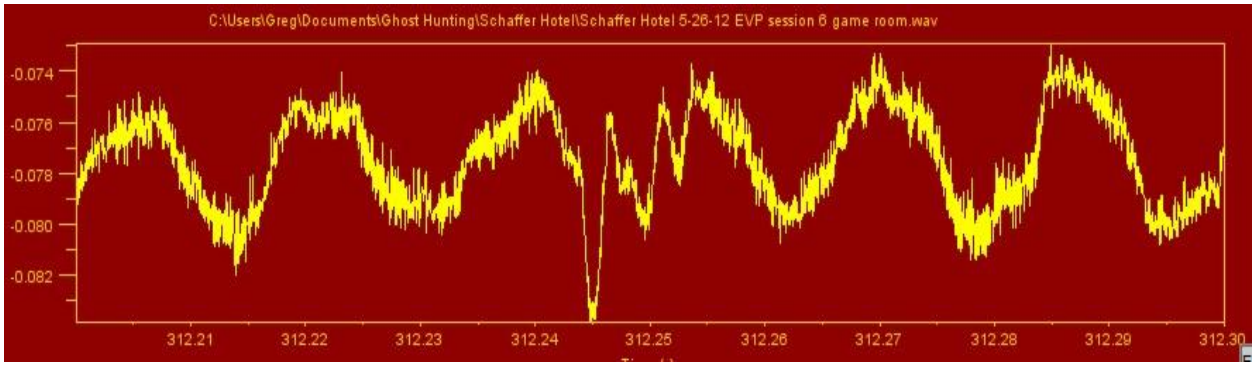

Figure 10: Time series of open channel recording showing the electrical transient at 312.244 seconds

Turning now to what was captured on video, to examine the motion of the pool cue in more detail, a method was devised to look at only what changes from frame to frame (change detection) to determine exactly when the motion started and how it proceeded during the event. To do this, the frames were extracted from the video and, when comparing two frames, the earlier frame is inverted, that is made into its negative, and pasted onto the later frame. The earlier frame is then given 50% transparency and added pixel by pixel to the later frame. In this way, anything that remains stationary between the two frames is cancelled out and becomes gray. Anything that moves shows up with both positive and negative portions that are misaligned. The number of pixels of the misalignment can then be measured to determine the relative change in position of the object.

Figures 11 and 12 illustrate this process by comparing the first and last frames of the video. Looking at the frames themselves in Figure 11, it is hard to notice all the changes without looking very closely. But when the frames are added as described above, several features immediately pop out. First, as expected, people's movements are the most noticeable feature of the change detection picture. But looking more at the background, you can start to see the effects of the pool cue falling including the movement of pool cue 2 on the table (A), the final resting place of pool cue 1 (B), and even very subtle features like the change in the reflection of pool cue 2 off the back of the laptop (C). Unfortunately, the initial position of pool cue 1 is mostly blocked by Spanky in the first frame, so only the tip of it is visible in its initial position. As a last note, this change detection image also shows that nothing else in the room moved and is a good way to check for minor changes in the position of objects when the room is as cluttered as this one was.

Figure 11: First (top) and last (bottom) frames of the video clip. See if you can spot the changes, especially those not associated with the movement of the team members.

Figure 12: Change detection image between first and last frame with non-personnel movements highlighted in the lower figure. x and + on Derek's shoulder at the far right of the figure are example measuring points to determine relative degree of motion

With this type of image, it is also possible to measure the relative distance that an object has moved quite easily by picking a point on the inverted, mostly light-colored bluish image from the first frame, say Derek's shoulder marked by an X in Figure 12, and then picking the similar point on the object only on the positive, mostly dark-colored image from the last frame like the + in Figure 12. The number of pixels between these two points can be used as a unitless measure of how far the object moved between the two frames. This simple measurement method, however, does make the assumption that the motion between the two frames was smooth and in one direction. This may not be a valid assumption for two frames separated in time by as much as the first and last frame of the video (12 seconds), but when comparing two that are only a couple frames or a couple tenths of a second apart, it is a good estimator of position change. Unfortunately, if the positional changes are less than a pixel, then no change will register and longer time windows (a greater separation in frames) will need to be used.

The first question then is when did the pool cue begin to move relative to the sounding of the Trifield alarm? If we look at an enlargement of the change detection image between the first frame and the frame two seconds into the video when the alarm goes off (left hand side of Figure 13), we can see that the tip of the pool cue did not move. Granted, in these early frames most of the cue is blocked by Spanky, but the tip of the cue is readily seen in the raw frame images just above the end of his shirt sleeve, so should show up in the change detection image if it has moved significantly by the two second mark. It does not.

On the other hand, if we look at what happens comparing the frame at two second with one five frames or 0.17 seconds later (right hand side of Figure 13), the tip of the pool cue does show up meaning that it has moved slightly during this time period. From this we can conclude that the motion of the pool cue begins nearly simultaneously with the alarm from the Trifield Meter and possibly with the electrical anomaly recorded on the sound card as discussed above.

The motion of the pool cue was then measured between frames that were 0.16 seconds apart for the duration of the event starting at 2.03 seconds and ending at 6.93 seconds when the cue hits the second cue lying on the table. A comparison of all the data collected during the event including the plot of position of the pool cue versus time, audio extracted from the video, the open channel electrical data, and audio from the live mic is shown in Figure 14. All the plots are time-aligned except for the open channel data, which was time shifted about 2 seconds so that the electrical anomaly aligned with the Trifield alarm.

What's interesting about the cue position plot is that there appear to be two points where the pool cue changes fall rate, the first at about 3.5 seconds and the second at about 5 seconds. The second one may be caused by the pool cue moving off of the metal corner of the table with the change in perspective as it moves to hit the edge of the table translating into an apparent change in fall rate. At 3.5 seconds, however, the cue appears to essentially stop, then start up again in its downward trajectory. How this happens, especially when no motion of the table is seen, remains unexplained. It could be that the table does move, but the motion is so slight it cannot be detected at the pixel resolution level, or it could be just that the cue sticks momentarily before continuing its fall.

In summary, this anomalous event is interesting not only because no obvious cause for the pool cue to move was found, but also because two of the other active sensors picked up an anomalous event at essentially the exact same time. This may not mean it is paranormal in nature, but it does give us a type of anomaly to be watching for at future data collects. If this is a set of anomalous features that reoccurs on a consistent basis, this would be significant.

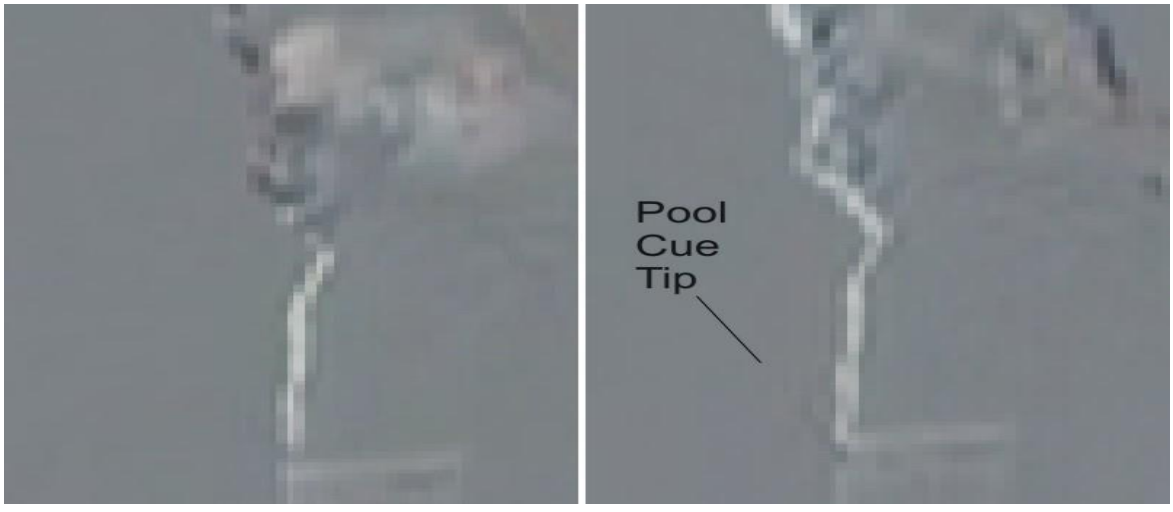

Figure 13: Enlarged portion of change detection images between 0 s and 2.00 s (left image) and 2.00 s and 2.17 s (right image)

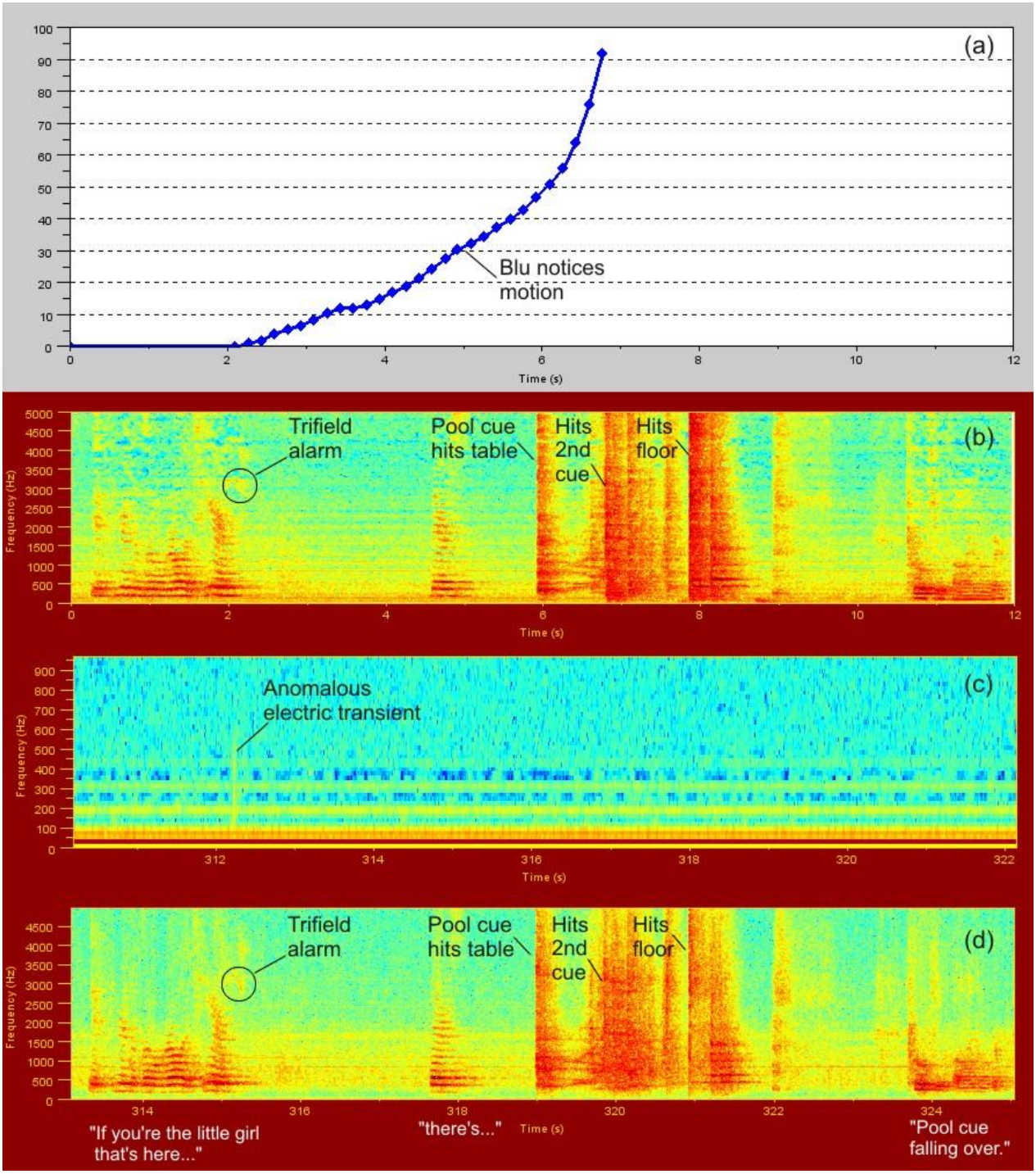

Figure 14: Comparison of event data including pool cue motion as a function of pixels moved versus time (a), audio extracted from the video (b), open channel of EM recording (c), and live mic recording (d). Dialog and major events are noted.

Issues

The biggest issue that arose during this hunt was in the proper operation of the G.E.I.S.T system. Even though it was supposedly set to continuous recording, when playback was done, most of the time period that was supposed to be recorded was missing. Again, more training is needed on new equipment prior to fielding so that operational issues are minimized. Also, the wireless cameras did not function as anticipated and only wired cameras were able to be used.

A second issue was in the use of controls, especially for the EVP's. With the use of the Xmic, our supply of recorders is diminished and controls needed to determine what are EVP's and what are ambient noises in the

environment were lacking during this hunt. The video audio track would help to mitigate this and confirm the EVP's, but the amount of data contained in a video of these lengths is difficult to make readily available for comparison for analysis.

A final issue is in synchronizing of the various data sensors so that good correlations can be made when anomalous events occur. The data set collected here gave us the ability to do this to a certain extent as evidenced by the correlation discussed between the Trifield meter and the video, but was still lacking when it came to including the new prototype sensors. The ability to record all the data types on a single time-synchronized recording system would be a great benefit.

Lessons Learned

1.) When introducing new equipment to the team, more hands on training is needed prior to the hunt to make sure equipment can be operated properly by those participating.

2.) Controls are critical for determining the validity of potential EVP's and we need to be more rigorous in making sure we have enough recorders to do controls properly.

3.) We still need to find a better way to share all the data collected and make it available for anyone in the organization who wants to work with it.