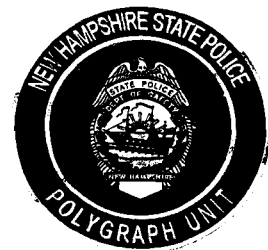




Colonel Robert Quinn  
Director

State of New Hampshire  
*Department of Safety - Division of*  
**STATE POLICE**  
**POLYGRAPH UNIT**

33 Hazen Drive, Concord, N.H. 03305  
Telephone: (603) 223-3856 Fax: (603) 271-2520



August 22, 2012

Jeffery Strelzin  
Senior Assistant Attorney General  
Chief of the Homicide Bureau  
NH Department of Justice  
Attorney's General Office  
33 Capitol Street  
Concord, NH 03301

Dear SAAG Strelzin,

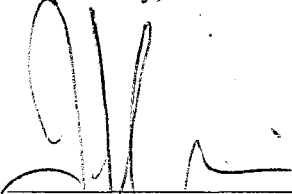
At your request the New Hampshire State Police Polygraph Unit conducted a Quality Control / Quality Assurance review of a polygraph exam conducted on April 30, 2012, by Mr John Healy of Litigation Intelligence Services, LLC, located in Warner, New Hampshire, and administered to Mr. Chad Evans. The exam was in regards to the homicide death of Cassidy Bortner, who died on November 9, 2000.

Attached you will find an eight (8) page report detailing the review of the exam as well as a Curriculum Vitae and various documents to support my initial polygraph training and polygraph related continuing education, all of which will show that I have received the proper training to have conducted this review.

Although the attached report will go into detail regarding the overall review I can summarize that based on my review of this exam it would be my opinion that this exam be considered INVALID and not relied upon to any degree in assessing Mr. Evans' truthfulness or deception in regards to the questions he was asked during the exam. The issues with the exam range from deviations from the accepted exam format, poor or improper question formulation, improper component settings, and examiner error(s).

Should you have any questions regarding this review, the report or any documents provided please contact me at any time at (603) 223-8579, or via email at [jeffrey.ardini@dos.nh.gov](mailto:jeffrey.ardini@dos.nh.gov). Thank you.

Respectfully,



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**TROOPER JEFFREY A. ARDINI**  
NH State Police  
Investigative Services Bureau  
Polygraph Unit - Commander



Colonel Robert Quinn  
Director

State of New Hampshire  
*Department of Safety - Division of*  
**STATE POLICE**  
**POLYGRAPH UNIT**

33 Hazen Drive, Concord, N.H. 03301



**REPORT OF POLYGRAPH EXAMINATION**  
**QUALITY CONTROL / QUALITY ASSURANCE**

DATE: July 31, 2012

TO: Jeffery A. Strelzin  
Senior Assistant Attorney General  
Chief of the Homicide Bureau  
NH Department of Justice  
Attorney's General Office  
33 Capitol Street  
Concord, NH 03302

RE: Chad Evans Polygraph Review

Dear SAAG Strelzin,

At your request I recently conducted a Quality Control / Quality Assurance review of a polygraph exam conducted by the followingsubject:

**Mr. John M. HEALY**  
Litigation Intelligence Services, LLC  
76 Pleasant Pond Road  
Warner, NH 03278  
Telephone: (603) 746-4994

This exam was conducted by HEALY on April 30, 2012, the following subject:

**Mr. Chad EVANS**  
DOB: 10/15/1971  
Inmate Number: 75414  
NH Department of Corrections  
State Prison for Men  
281 N. State Street  
Concord, NH 03301

This exam was being conducted at the request of:

**Mr. Morrison BONPASSE**  
Bonpasse Exoneration Services

The exam was conducted at the following location:

**New Hampshire State Prison for Men**  
NH Department of Corrections  
281 N. State Street  
Concord, NH 03301  
(603) 271-1860

According to the information I was provided in connection to this exam it appeared that this exam was administered to EVANS to explore his involvement and / or culpability in the November 2000 death of:

Kassidy **BORTNER**  
DOB: 02/04/1999 DOD: 11/09/2000  
21 Months Old

This exam was conducted approximately ten (10) years after EVANS had been tried and convicted in the homicide of BORTNER.

The following is a breakdown of the review of this exam;

#### **REVIEW OF THE EXAM FORMAT**

Upon receiving the electronic polygraph file and written report regarding this exam I reviewed the report completed by HEALY. This report described the arrangements, procedure, and conclusion related to the exam he administered to EVANS. This report also included a description of the exam format utilized, the scoring criteria used to evaluate the charts, and the exam score.

In HEALY's report he claims to have used a "multifaceted test of a single issue employing the three question **Utah Zone Comparison** Technique." HEALY also stated that this technique is taught by the New England Polygraph Institute of Moultonboro, New Hampshire, and the Canadian Police College both of which instruct the Canadian "A" (single-issue) and Canadian "B" (multi-issue) as their primary polygraph formats. However, HEALY does not state or offer any evidence that he has been formally trained in this format, or has received any certification in this technique such as a certificate or syllabus from the school in which he received his polygraph training.

As a graduate of the Northeast Counterdrug Training Center Polygraph Institute, located in Fort Indiantown Gap, Pennsylvania, and having attended various polygraph related in-service and continuing education courses, I have been instructed in the Utah Zone Comparison Technique and its scoring protocol (See attached *Curriculum Vitae*, certificates and school syllabus). In my training I have learned that the Utah Zone Comparison exam has two formats; a multi-issue format for exploring up to four (4) different issues, and a single-issue format used for exploring one (1) specific issue. However, in certain circumstances, the single-issue format can be used to explore multi-facets of the same issue. Ultimately, upon reviewing the question template for this exam, the charts, and the audio / video recording I was able to determine that HEALY used a variance of the single-issue Utah format, and by a variance I mean that it would appear that HEALY deviated from the required established format for a single-issue exam.

The validity of the accepted polygraph format in use today is based on research done on the formats and is based on the assumption that the format used is followed exactly as developed. Additional factors are also considered in the validity of a format, such as pre-test procedures, proper screening of examinees, proper advisements and / or directions, proper question formulation, proper gain settings, questions spacing, starting and stopping of the exam, and other factors. However, the format in-and-of-itself can be considered the foundation of the actual exam and if the exam is not formatted specifically as dictated by the research that supports it then the results of that exam will not be supported by any research and therefore can not be trusted for accuracy.

In regards to the test administered to EVANS by HEALY, HEALY claims to have used a single-issue Utah Zone Comparison Technique. The proper question format for this specific exam is as follows:

1. Introductory Question OR a norm
2. Sacrifice Relevant
3. Norm
4. Comparison Question
5. Relevant Question
6. Norm
7. Comparison Question
8. Relevant Question
9. Norm
10. Comparison Question
11. Relevant

Upon review of the charts, question lists, and the audio / video of this exam I have found that HEALY deviated from the format in the following ways;

1. HEALY used both an introductory question as the first question, AND, HEALY also used a norm as the second question spot.
2. HEALY failed to insert a norm between questions 2 and 4
3. HEALY failed to insert a norm between questions 5 and 7

These three deviations from the established format would mean the results of this exam would not be supported by any research, thereby rendering the exam invalid based on the failure to use the proper format.

### REVIEW OF THE TRACINGS

Upon reviewing this exam, to include the charts and the audio / video of the exam, I noted that the cardio tracing was very narrow, mostly no wider than a quarter of an inch throughout the exam. Upon watching the audio / video of the exam HEALY can be heard stating at the beginning of the acquaintance exam that he was having trouble adjusting the gains properly on the cardio channel. Also while watching the audio / video of the exam I heard and observed that HEALY utilized a thumb cuff (a small blood pressure cuff used on the thumb of an examinee) in lieu of the standard arm blood pressure cuff. While the thumb cuff is an accepted component for conducting polygraph exams if an examiner is using Lafayette Instruments software, which HEALY was, the examiner must make changes under the "preference" menu in the Lafayette software to "synch," if you will, the different components with the software. Specifically, if an examiner uses a thumb-cuff versus an arm cuff an examiner must go to the preferences menu and ensure the thumb-cuff box is checked or the tracing will be skewed and not properly recorded on the charts.

After seeing that HEALY had utilized the thumb-cuff in lieu of the arm blood pressure cuff I checked to see if HEALY had made the change under the software's preferences. Upon checking this I found that although HEALY had utilized the thumb-cuff he had not made the required change from arm-cuff to thumb-cuff in the software. This would explain why although HEALY had turned the gain on the cardio channel up as high as it would go during the test, the tracing would get no wider than a quarter of an inch.

Because the preferences in the software were not properly changed in regards to the thumb-cuff, and the vast majority of the cardio tracing is only a quarter of an inch wide, or less, it is my opinion that this tracing can not be deemed reliable and scored as part of this exam. That would render the cardio tracing irrelevant for the entire test.

## REVIEW OF QUESTION FORMULATION

When developing relevant questions for a polygraph exam, specifically in regards to a specific-issue type exam, the questions must be as specific as possible to the issue being explored, leave no room for the examinee to rationalize or minimize the issue, and the questions need to be completely understood by the examinee. Additionally, relevant questions can not be made compound by using conjunctions, such as "and," or, "or." Semantics also need to be considered when developing your questions.

In regards to this exam one of the relevant questions HEALY uses is: ***Between November 8 and November 9 2000 did you hit, punch, kick, or strike Cassidy Bortner?*** In this one question HEALY uses both an "and" and an "or," clearly making the question compound and therefore vague. Also, HEALY uses ***"Between November 8 and November 9 2000...."*** By using between November 8 and November 9 2000 an examinee could rationalize that the question is specifically referring to midnight on November 8<sup>th</sup>, and if he hadn't done what is alleged at midnight he could answer that question with a "no" and be non-deceptive. Additionally, it is my understanding through speaking with you, Jeff, that K. BORTNER did in-fact die on November 9, 2000, but it was never conclusively determined when the fatal injuries were inflicted upon K. BORTNER, except through an estimated time line as established by the Medical Examiner. So, if the fatal injuries to K. BORTNER were inflicted late in the night on November 7<sup>th</sup>, and I recognize that it is an "if," the examinee could rationalize the question as something they did not do and therefore answer the question with a "no" and possibly be non-deceptive.

In this question HEALY also uses four different methods of causing injuries to the child, ***"hit, punch, kick, or strike...."*** Again, based on what I have come to learn about the case facts of this investigation it was never determined exactly how K. BORTNER received her injuries. So, the possible mechanism or cause of injury shouldn't be limited in the polygraph question. As some examples, what if K. BORTNER was forcibly "dropped," or, "thrown" down or against something, or, "swung" into something. Therefore, if K. BORTNER in fact wasn't specifically "hit," "punched," "kicked," or "stuck" then the examinee could answer HEALY's question with a "no" and possibly be non-deceptive. This is where semantics come into play.

Overall, the question described above and used by HEALY is vague and leaves potential for rationalization, minimization, and an interpretation of semantics. Since EVANS claimed to have had no complicity in the fatal injuries sustained by K. BORTNER, perhaps a better question would simply have been: ***"Did you cause those fatal injuries to that girl?"***

Another factor when formulating relevant questions is considering the use of the victim's name in a relevant question. As an accepted "best practice" it is encouraged that a victim's name not be used in a relevant question, especially if the examinee and victim are know / friendly / intimate / or otherwise connected to each other. The rationale being that just by introducing the victim's name into the question can induce an emotional reaction to the question and therefore possibly produce an artificial reaction.

The purpose of the Sacrifice Relevant question (which is not scored and always toward the beginning of an exam format) in an exam format is to introduce the examinee to the issue or offence being explored using direct terminology and to identify the alleged victim of that offence, such as *Regarding whether or not you stabbed John Doe.....Regarding whether or not you stole any of that money from Ma & Pa's Corner Store.....Regarding whether or not your penis ever touched Mary's vagina.....or, Regarding whether or not you caused those fatal injuries to Cassidy Bortner.....*, as examples. The reason for this question and the introduction of the issue or offence and the victim's name is to allow the examinee an opportunity to hear the allegation and the victim's name and to purge any emotional reaction associated with hearing the victim's name. Later in the exam a person victim should only be referred to as *"that man.....," "that woman....," "that girl..." "that boy..."*

An accepted variation to this requirement is if an examiner feels the victim's name needs to be in the relevant question. If that's the case then the name also needs to be in the comparison questions as well. This way if there is an 'emotional' reaction that reaction is evenly distributed throughout the exam.

In regards to the exam administered to EVANS my review shows that HEALY omitted the alleged offense or allegation from the Sacrifice Relevant Question by only asking EVANS, ***"With regard to Cassidy Bortner do you intend to answer truthfully each question on this test?"*** To fully lay out the issue at hand this question should have included a reference to the alleged act(s), such as ***"With regard to whether or not you caused those fatal injuries to Cassidy Bortner, do you intend to answer truthfully each question on this test."***

A review of the audio / video recording also shows that this issue of using the victim's name in the exam and the concern of an emotional reaction is brought up to HEALY by EVANS. This fact is interesting because while he brings up a valid point, it also may be indicative of EVANS having done research on polygraph prior to his exam. During the conversation regarding the use of the victim's name HEALY acknowledges that using the victim's name can invoke an emotional response and HEALY seems to indicate that he will not use the victim's name in the relevant questions. However, based on the audio / video recording, the question lists, and the charts, it would appear that the victim's full name was used in all three relevant questions, but not in the comparison questions, thereby going against currently accepted best practices for question formulation.

## REVIEW OF PRE-TEST PROCEDURES

During my review of this exam I did not have a copy of the pretest work sheet used by HEALY. However, I did review the audio / video recording of the exam. During my review of the audio / video recording I noted that EVANS claimed to have recently suffered a broken ankle. Although I did not observe EVANS using crutches or displaying any obvious signs of limping or favoring an ankle while he moved around the room this is an important issue to consider during a pretest interview.

If, in fact, if EVANS had a "broken" ankle, or even a moderate to severe sprain, the potential pain and / or

discomfort associated with that injury could have an effect on the tracings produced during the exam and possibly cause artificial reactions. Additionally, if an examinee had done research on the polygraph instrument and / or procedures prior to the test that examinee may try to induce pain or discomfort at certain points in the exam in an attempt to alter the tracings.

During HEALY's pre-test interview he doesn't seem to explore this issue with EVANS or assess the potential impact it may have on the exam. Without further inquiry and / or discussion by HEALY with EVANS on the audio / video recording I can not render an opinion as to whether this exam should have even been conducted beyond this disclosure by EVANS. But, as a 'best practice' to ensure an examinee gets a fair and accurate exam it should be an examiner's preference to default on the side of caution and not proceed with an exam if an examinee is in any pain, discomfort, or experiencing any type of medical issue that could endanger the health and well being of the examinee, or potentially skew the tracings.

### **REVIEW OF CHARTS / IN-TEST PROCEDURE**

A review of the four (4) specific-issue charts produced during this exam in conjunction with a review of the audio / video recording of the exam revealed some issues I believe are detrimental to this exam. They are detailed below:

- HEALY doesn't seem to give clear pre-test instructions to EVANS on how the test will be executed, how to remain still, and breathe normally, or provide any advisements on the adverse effects the use or attempted use of countermeasures will have on the exam.
- I noted that HEALY engages EVANS in conversation at various points during the running of the actual exam and during the time the charts are being recorded. This is not an accepted practice and should not occur during an exam.
- I noted that HEALY asked EVANS the same comparison question (C4) three (3) consecutive times on Series 2 / Chart 2, apparently due to examiner error, and HEALY engaged EVANS in conversation regarding the errors during this portion of the exam. While unexpected things can happen during exams due to examiner error, outside noises, the examinee sneezes or does some other unexpected, involuntary thing, or some unexpected equipment or component failure, this issue could have been easily addressed by not commenting on the error during the running of the chart, continued on after the first time C4 was asked incorrectly, and just finished out the chart. Then, the examiner could simply run an additional chart (minimum of three charts are required, but up to six can be run on a single exam). Engaging in conversation during the running of a chart is very problematic and should not be done.
- During a review of the Series 2 / Chart 2 tracing and the audio / video of the exam I noted that HEALY gave EVANS instruction on his breathing at or around question R5. Again, speaking to the examinee during the actual running of a chart is not acceptable and therefore further makes this chart unusable.
- In regards to the movement pad tracing on the charts I noted irregular, or even suspect movements on the part of EVANS during the exam. Ideally, if the gains are set correctly the movement pad tracing should show nothing more than the examinee's heartbeat. However, upon review of EVANS' charts I noted that EVANS moved more than would be expected or considered normal throughout the entire exam. Additionally, I specifically noted that the movement tracing seemed to indicate that EVANS made distinct movement(s) on the following questions; Series 2 / Chart 1- C6 and C9; Series 2 / Chart 2 - S1, C9, C4, and C6; Series 2 / Chart 3 - C4; and Series 2 / Chart 4 - S1. These notable movements all seem timely and consistent to only control questions which could be indicative of the examinee employing countermeasures. The possibility of EVANS using movement type countermeasures is also elevated due to

his claim that he was suffering from a broken ankle during the pre-test portion of the exam. This could be done by applying pressure to the effected ankle, or twisting the effected ankle to cause pain or discomfort which would translate into a reaction on the charts, as well as irregular movement tracings on the movement pad. Unfortunately, HEALY doesn't set up his camera in a way that EVANS' legs or feet are visible so it is difficult to come to a more concrete determination as to whether EVANS was manipulating his ankle, or doing something else as possible countermeasures.

### SCORING REVIEW

In HEALY's report he notes that he used "the UTAH scoring system" to evaluate his charts although no hand scoring sheet was provided for this review. This "system" is referred to as the Seven Point Scoring System. This system assigns a numerical score based on a 1.5:1, 2:1, 3:1, type evaluation. Although it is my opinion that these charts are invalid based on the improper formatting, the excluded cardio tracing, poor or improper question formulation, possible countermeasures, and the possibility that the examinee had a broken ankle during the exam, myself an another NH State Police Polygraph Unit examiner, Trooper J.C. Decker, who recently completed the academic portion of his polygraph training at the NCTC Polygraph Institute and is also trained in the UTAH format, scored the charts on their 'face value.' This evaluation of these invalid charts using the seven point scoring system resulted in us both coming up with the following numerical score:

Question	R5	R7	R10	
Chart 1	+2	+2	+1	
Chart 2*	+1	+1	-3	*Included despite examiner error(s) based on belief that HEALY scored Chart 2.
Chart 3	-2	-1	-1	
Chart 4	+1	-1	+1	
<hr/>				
Sport Scores	+2	+1	-2	Overall Total: +1 <b>INCONCLUSIVE</b>

Based on the fact that HEALY claimed that EVAN had been deemed NonDeceptive with an overall score of +15 Trooper Decker and I applied the Empirical Scoring System to these charts to assess if HEALY had used this scoring system used for other formats. Below are the results of the scoring of the charts based on their 'face value' using ESS:

Question	R5	R7	R10	
Chart 1	+2	+2	+2	
Chart 2	Excluded due to obvious examiner errors			
Chart 3	+2	0	-2	
Chart 4	-4	-2	0	
<hr/>				
Sport Scores	0	0	0	Overall Total: 0 <b>INCONCLUSIVE</b>



## SUMMARY

Based on my review of this exam I found a number of issues that in my opinion make this exam unreliable. These issues include:

- Improper Formatting of the exam
- Poor / improper question formulation
- Poor pre-test procedures in regards to screening EVANS' possible broken ankle, providing proper advisements and instructions.
- Improper setting of preferences in regards to the thumbcuff rendering the tracing useless
- Various examiner errors during the running of charts.
- Possible countermeasures by the examinee.

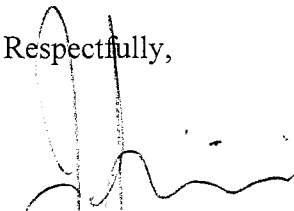
Lastly, I noted in HEALY's report that he states, "*I noted no common indicators of verbal or physical deception,*" and, "*I detected no linguistic signs of deception or editing,*" in regards to EVANS. While being cognizant of an examinee's body language and / or applying some level of statement analysis is useful while conducting any type of interview this type of evaluation has to remain distinctly separate from the execution of a polygraph exam, the evaluation and scoring of polygraph charts, and in the rendering of an opinion in regards to an examinee's deception or non-deception in connection to a polygraph exam. The rule being: trust your charts and only your charts when rendering an opinion.

Additionally, in HEALY's cover letter to you in regards to this exam review HEALY makes reference to applying "SCAN," a statement analysis technique, to some statement written by someone named [REDACTED] adding that he had looked at it and found it "*interesting.*" HEALY also expresses his belief that there are "*likely many more wrongfully convicted people in New Hampshire prisons beside Chad EVANS,*" and he then makes reference to another case regarding a Brian Chevalier. My concern in reading these things in HEALY's letter and reports is that HEALY may have considered factors outside the sphere and scope of the polygraph exam and the charts in concluding his opinion. This is merely something I noted and felt relevant to mention as it would be my position that these non-polygraph related techniques have no relevance in the outcome of the polygraph exam and may, and I stress may, be an indicator of outside influences.

Based on my review of this exam, and using the material I was provided, it would be my opinion that this test be deemed invalid and not relied upon to assess the truthfulness of Chad EVANS in regards to the issue of his culpability in the death of Cassidy Bortner.

Should there be any questions regarding this exam, please, contact this office at (603) 228-579.

Respectfully,



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**TROOPER JEFFREY A. ARDINI**  
NH State Police  
Investigative Services Bureau  
Polygraph Unit