

Linder Technical Services

Networking Newsletter



April 2007

ASE TESTS.....WHERE DO THEY GET THOSE QUESTIONS??

Another round of ASE testing has just passed and inevitably I will talk to someone who either has a question or complaint about a recent test they have taken. Most commonly I hear the following: "Who comes up with these questions?" "There was a question on the test with NO right answer!" "There was a question on the test with more than one right answer!" "Just because you pass a test doesn't mean you can fix a car".

I just had the opportunity participate in an ASE test-writing workshop for the A6 (Automobile Electrical / Electronic Systems) test and it was an eye-opening experience. I spent 3 intense days with a group of very intelligent people and I would like to share with you what I learned about ASE and the process they go through to produce a test.

The questions are created by a group of "subject matter experts". These workshop groups are made up of O.E. trainers and technicians as well as independent trainers and technicians. Remember, ASE questions must be "generic" in nature, so it's important to have input from many O.E.'s as well as independents to make sure that the test isn't biased toward one manufacturer. Each test has its own task (job skills) list and every question written must directly relate to one of the tasks. If not, the question must be thrown out, re-written or the group must agree to add a new task to the list.

You might not realize it, but if you read your ASE Registration Booklet closely, you'll find it says there are a certain number of questions on every test that are NOT scored. This means no matter what you answer, it will NOT affect your score. These are called "pre-test" questions. They were written during a workshop (such as the one I attended), reviewed by the workshop participants and then they are embedded in an actual ASE test. However, before they are considered a legitimate question, they are "pre-tested" to see if they will "make the grade", so to speak. Once all exams have been graded, each question on the test is also "graded" and the results look like this:

A6692R/004	IBN	A6-A035	*1	2	3	4	DG	NR	
12/01/06	N=	2669	UPP	92	3	4	1	0	0
PBIS R 43	N=	4546	MID	69	12	14	4	0	0
BIS R 56	N=	2669	LOW	41	21	28	9	0	0
DELTA 11.1	N=	9884	TOT	68	12	15	4	0	0

Notice the columns on the right side. The numbers at the top (1-4) indicate which answer was correct and the * next to the #1 means that 1 or "A" was the correct answer for this particular question. Here's where it gets interesting. Notice the words "UPP", "MID", "LOW". The "UPP" correlates to the upper 27% of the test candidates, based on their scores. All of the upper group passed the exam. The "LOW" is the lower 27% of the test candidates, none of whom passed the exam and "MID" refers to the middle 46% of the test candidates, some of whom passed and some of whom did not. Now let's look at the details and see if this looks like a good question.

ASE Tests (Cont. from front page)

Notice under the column headed by *1: 92% of those who passed the test answered this question correctly by picking #1 or A, 69% of those in the middle scoring group answered it correctly and 41% of those who failed the test answered this question correctly. It looks like a pretty good question to me. Most of the people who passed the test answered this question correctly, and less than 50% of those who failed the test answered this question correctly. This question does a good job of identifying knowledgeable test takers.

Now let's look at the DELTA number of 11.1. The DELTA number is the difficulty rating of the question. This is a calculation based on the percentage of the total test candidates who answered it correctly. A DELTA of 7.0 is the easiest question that ASE will use and a DELTA of 15 is the most difficult question they will use. A DELTA of 7.1 means 93% of all candidates answered it correctly and a DELTA of 15.0 means only 31% of all candidates answered it correctly. As you see, this question had a DELTA of 11.1 which falls in the middle of the acceptable range.

Finally, directly above the DELTA number, you will see "BIS R". This number is a way to measure the quality of a question. The higher the BIG R, the better job the question does in differentiating between a knowledgeable and a less knowledgeable test candidate.

Based on this performance data, ASE will remove pretest questions that don't perform properly and insert them back into a workshop to see if the question can be re-written or if it should be discarded completely. Keep in mind, this information is also calculated for EVERY ASE, each time it is used. Constant evaluation of these already-proven test questions ensures that they continue to perform properly, and is also used to determine when questions have "run their course" and become obsolete due to new or changing technology.

I've heard the argument before that passing a test doesn't mean you can actually fix a car. You're absolutely right. However, ASE works hard to make sure that their test questions represent the actual job of a technician which is to diagnose and repair vehicles. Therefore, test questions are written in an effect vs. cause scenario. In other words, a vehicle is exhibiting a certain symptom and the technician must use a wide range of knowledge and experience to diagnose the cause. In general, test questions can be divided into 4 basic categories based on the thought processes necessary to solve them:

1. Knowledge Questions: require you to simply recall information. ASE avoids this style of question to prevent someone from passing a test simply by reading a book.
2. Comprehension Question: ask you to demonstrate an understanding of the concept or idea being presented. This style of question usually requires understanding of basic theory, but takes it to the next level of understanding system operation
3. Application Questions: ask you to solve a practical problem through the use of knowledge, ideals, principles or theories. Some "procedural" questions may fit into this category, but these type of ASE questions focus on "why" a procedure is performed, rather than "how" it is performed.
4. Analysis Question: require you to solve a problem by breaking it down into parts and determining the relationship between those parts. This is the most complex type of question because it requires basic knowledge and operational theory, plus the application of those to solve diagnostic problems. Since this relates to a technician's everyday work experience, these form the majority of question types on ASE tests.

Attending the ASE test writing workshop was a great experience. Knowing the preparation and follow-up that ASE invests in each test question gives me an even greater sense of accomplishment and pride when I tell people that I am ASE-certified.

LTS and Sarah Fisher

Recently, the LTS shop was used as the backdrop for a AAA TV commercial featuring racecar driver, Sarah Fisher. As you can see from the picture, one entire end of our shop was transformed into a TV studio by a large camera and lighting crew. Sarah ran into our shop dog, Spike, and they became fast friends. For those in the Indianapolis area, the commercials have been running in the evening after the Fox channel's 10pm newscast.



Electronic Service Information Resources

We have been using many forms of electronic service information at our shop for years such as: iATN (www.iatn.net), Motor Alldata online (www.motoralldata.com) and various factory CD's. In the past we had used Identifix (www.identifix.com) with some success, but felt it was a little too



hard to navigate and eventually stopped using the product. Recently, one of our past Guru grads called to inform me that the indentifix product had been completely re-worked and he (as a user) was very pleased with the changes and thought I should check it out again. After a few weeks, a rep. from the company called and walked me through the website and I was VERY IMPRESSED! With very little effort, a search on a particular symptom will bring up TSB's, Recalls, Wiring Diagrams, confirmed fixes from their hotlines and much more. So far, I've been able to find all the information I needed simply from their website, but for tougher problems, they still offer hotline support that guarantees a fix or you don't pay for the call! If you used the product in the past and "gave up" as we did, and for those who have never seen or heard of it before, it's worth your time to spend a few minutes and check it out. www.identifix.com

Where's The "Sleuth"?

A few of you have asked why I haven't been writing as many case studies lately. I'm still diagnosing cars and collecting information, but I'm not sharing as much in the newsletters as I used to. Why? Well, I've been asked to speak at the ASA CARS event in Las Vegas this November (www.carsonline.org). Yes, my jaw hit the floor when I was asked too. I don't feel that I am anywhere near the caliber of instructor or technician that many of the CARS instructors are, but I'm determined to do my best and put forth my best effort to make it a great experience for everyone who attends. That means I'm busy collecting information, putting together slides and getting ready for my first class outside of our Indianapolis market and I want to make sure all the information and case studies that are used in the class are "fresh", never before seen by any of our readers. Yes, I know all 2,000+ of you who receive our newsletters will obviously not be in my class, but I don't want to spoil it for those that are. I won't punish my faithful readers either, so if you're not able to attend the ASA CARS event (www.carsonline.org), look for many of the case studies from my class to start appearing in next year's newsletters.

Linder Technical Services

**4-D Gasoline Alley
Indianapolis, IN 46222**

**Phone: (317) 487-9460
Fax: (317) 487-1868
Toll Free: (888) 809-FUEL**

www.lindertech.com

***AUTOMOTIVE
SOLUTIONS FOR
TODAYS TECHNICIANS!***



Saying Goodbye

I finally had to roll an old friend to the dumpster today! She (Allen SEA) was only 23 years old and had lived a pretty useful life. Logging in a few thousand full system auto tests over the years with little if any actual service issues.

She began life as a demo unit sold to Bill's Alignment by Tom Ogara. She worked well for Bill and his guys up until most cars became DIS. At that time Bill gave her to us knowing she would be in good hands. She performed her last full system test on a friend's distributor-equipped hot rod engine with a conventional distributor.

Donations (if any) may be made to the SEA Gas Analyzer Bench fund somewhere in Kalamazoo Michigan.

The SEA is survived by 10 children and 60 grandchildren ranging from a DVOM up to the latest scan tool. She will be missed.

—*Jim Linder,
The Injector "Guru"*

