

THE DRINKING DRIVER



Basic Intoxilyzer Manual

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Introduction

ALCOHOL AND TRAFFIC SAFETY

The National Highway Traffic Safety Administration (NHTSA) defines a fatal traffic crash as being alcohol related if either a driver or a non-occupant had a blood alcohol concentration (BAC) of 0.08 grams of alcohol per deciliter or greater in their blood or breath. Persons with a BAC of 0.08 greater involved in fatal crashes are considered to be intoxicated.

Alcohol related fatal crashes fell by 3.7 percent from 2006 to 2007. The 13,491 alcohol related fatalities in 2006 (31.6% of total traffic fatalities for the year) represent a 4% reduction from the 12,998 alcohol related fatalities reported in 2007 (31.7% of the total).

NHTSA estimates that alcohol was involved in 39% of fatal crashes and in 7% of all crashes in 2004. The 16,694 alcohol related fatality crashes during 2004 represent an average of one alcohol related fatality every 31 minutes.

An estimated 12,068 persons were killed in crashes in 2007, where police reported alcohol was present. Down 3.8% from 2006. About three in every ten Americans will be involved in an alcohol related crash at some time during their lifetime.

The rate of alcohol involvement in fatal crashes is more than three times as high at night than during the day. For all crashes the alcohol involvement rate is more than four times as high at night.

In 2007, 59% of all fatal crashes during the week (Monday-Friday) were alcohol related, compared to 40% on weekends. For all crashes, 68 % were single vehicle crashes and 32 % were multi-vehicle crashes.

From 2006 to 2007, intoxication rates decreased for drivers of all age groups involved in fatal crashes. Drivers in the 16 to 20 years old age group experienced the largest decrease in intoxication rates, drivers 45 to 64 years old increased by 1%.

In Utah the average alcohol level was .14 grams for 2006 with the highest recorded level at .42, over five times the limit.

In 1982, 45.5% of traffic fatalities in Utah were alcohol-related. In 2005, that number had been reduced to 13%.

Utah had 287 fatal crashes in 2006. In 2007 we had 299 fatal crashes with 37 of them being alcohol related. Down 3.8%

Utah had 12,017 DUI cases sent to court in 2006 with 61% pleading guilty and an overall conviction rate of 80.7%. With the average fine of \$1,498.22

Impaired driving is not a new problem. History shows that strong drink created traffic problems among chariot drivers in ancient Rome and there is documentary evidence identifying the problem in this country as early as 1904. Some of the first evidence appeared in an editorial in the Quarterly Journal of Inebriety, stating in part:

"We have received a communication containing the history of 25 fatal accidents occurring to automotive wagons. Fifteen persons occupying these wagons were killed outright, five more died two days later and 14 persons were injured. A careful inquiry showed that the drivers in 19 of these accidents had used spirits within an hour or more of the Disaster... Inebriates and moderate drinkers are the most incapable of all persons to drive such wagons. The general palsy and diminished power of control of both the reason and senses are certain to invite disaster in each attempt to guide such wagons."

One of the most informed individuals in the United States on the subject of the drinking driver is Professor Robert F. Borkenstein, chairman of the Department of Police Administration at Indiana University. Dr. Borkenstein speaks here of the role of alcohol in traffic safety:

"Modern traffic congestion and high speeds impose an ever increasing demand on today's drivers for a high level of skill. Even more important is the necessity to learn to make decisions accurately and rapidly. Driver training and retraining are directed at this problem. This skill and decision-making must become second nature to the driver if he is to survive.

"After driving becomes a learned skill, with considerable experience, an interrelation between ability and performance develops. The driver with low native skill adjusts his driving to compensate. This relationship becomes so stable that driving becomes almost subconscious. As long as nothing interferes with this adjustment, the driver will probably remain accident free when he drives within his limitations."

Teenagers, without a doubt, have a low level of experience in the operation of a motor vehicle. This, in combination with a low level of experience in the use of alcohol, compounds the problem. A total of 5,659 young people died in motor vehicle crashes in 2006; NHTSA estimates that approximately 1,650 of those were alcohol related fatalities.

Gender-specific data on alcohol and non-alcohol related fatalities indicate that males

continue to outnumber females by a wide margin for both. In 2007, 83% of all alcohol related fatalities were male while 16% of alcohol related fatalities were female.

Youth are still over-represented in fatal crashes compared with the older population. Indeed, the rate of involvement is greater for youth for both alcohol- and non-alcohol-related crashes compared to the total population, the licensed driver population, and on vehicle miles driven.

In summary, the evidence shows that alcohol, in combination with driving, creates a dangerous combination that in too many instances results in carnage on our highways.

Lesson 1

ALCOHOL IN THE HUMAN BODY

Alcohol is the most abused drug in the United States.

"**Alcohol**" is the name given to a **family** of closely related and naturally occurring chemicals. Each of the chemicals that are called "alcohol" is made up of molecules that contain a single oxygen atom and varying numbers of hydrogen and carbon atoms.

The simplest alcohol has one carbon atom and four hydrogen atoms. The next alcohol has two carbons and six hydrogen atoms. The third alcohol has three carbons and eight hydrogen atoms. The next one in the "chain" has one more carbon and two more hydrogen atoms than the one before. That is how the alcohols differ from one another. All alcohols are hydrocarbon derivatives with a specific functional group composed of two atoms, one Oxygen (O) and one Hydrogen (H), called a Hydroxyl Group.

Alcohol is also classified as a HYDROPHILIC compound meaning that it is infinitely soluble in water.

All alcohols are molecularly very similar and produce similar effects. They produce intoxicating effects when ingested into the human body. Only one is meant for human consumption. All alcohols are toxic to the body and when a sufficient quantity is consumed death will result.

The ingestible alcohol is ethyl alcohol, or **ethanol**. Its chemical abbreviation is ETOH. The "ET" stands for "ethyl" and the "OH" represents the single oxygen atom and one of the hydrogen atoms, bonded together in what chemists refer to as the "hydroxyl radical". Ethanol has two carbon atoms. Two of ethanol's best-known analogs are methyl alcohol (or **methanol**), commonly called "wood alcohol", and isopropyl alcohol (or **isopropanol**), also known as "rubbing alcohol".

Ethanol is a volatile colorless liquid, which possess an ethereal odor and produces a burning taste sensation. Ethanol is the alcohol that is contained in all-alcoholic beverages. Ethanol is not as readily toxic to the system as is methanol, due to the fact that the by-products or metabolites generally have a low toxicity. The first metabolite is ethaldehyde or acetaldehyde, followed by ethanoic acid or more commonly acetic acid or vinegar.

Methanol is an extremely volatile, colorless, odoriferous liquid. Methanol consumption traditionally occurs in two classifications of individuals, the street derelict and small children. Small children usually consume methanol by accidentally drinking household cleaners and other disinfectant items kept around

the house. The street derelict, on the other hand, will search through containers for items that contain methanol. One of the major sources of methanol used to be the Asterno@ containers which were used in cafeterias to heat food.

Methanol is extremely toxic to the human body. The metabolite by-products of methanol are the reason for its toxicity. The first by-product of methanol is methaldehyde, more commonly known as formaldehyde. The next metabolite is formic acid. Formic acid will dissolve the rods and cone of the retina resulting in vision impairment or blindness. It is the formic acid that will result in the individual's death by causing the kidneys to shut down placing the individual in renal failure.

Isopropanol is a colorless liquid with a very distinct odor. The majority of individuals which are found to consume isopropanol are "hard core@ alcoholics. They will resort to drinking rubbing@ alcohol (isopropanol) when they are unable to obtain regular alcoholic beverages. The danger of isopropanol consumption is its metabolite reduction to acetone.

Lethal dosages are expressed by the term LD50. LD50 is the amount required for a lethal dosage for 50% of the population. Some individuals can exceed this level, while others may succumb at much lower levels of the drug.

The approximate lethal dosages for alcohols above are:

<u>Alcohol</u>	<u>LD50</u>
Methanol	.075g/100ml of blood
Ethanol	.40 - .45g/100ml of blood
Isopropanol	.25 -35g/100ml of blood

PRODUCTION OF ETHANOL

Ethanol is what interests us, because it is the kind of alcohol that features prominently in impaired driving. Ethanol is beverage alcohol, the active ingredient in beer, wine, whiskey, liquors, etc. Ethanol production starts with **fermentation**. That is a decomposition in which the sugars in fruit, grains and other organic materials are acted upon by yeast to produce the chemical we call ethanol. This can occur naturally, as yeast spores in the air coming into contact with decomposing fruit and grains. However, most ethanol didn't ferment naturally, but was produced under human supervision.

When an alcoholic beverage is produced by fermentation, the maximum ethanol content that can be reached is about 14%. At about 14%t concentration, the yeast dies, so fermentation stops. Obtaining higher ethanol content requires a process called **distillation**. This involves heating the beverage until the ethanol "boils off", then collecting the ethanol vapor. It is possible to do this because ethanol evaporates at a lower temperature than the other contents of the fluid.

Distilled spirits is the name given to high-ethanol-concentration beverages produced by distillation. These include rum, whiskey, gin, vodka, etc. The ethanol concentration of distilled spirits usually is expressed in terms of **proof**, which is a number corresponding to twice the ethanol percentage. For example, an 80-proof beverage has an ethanol concentration of 40%.

Over the millennia people have used and abused ethanol, some standard-size servings of the different beverages have evolved. Beer, for example, is normally dispensed in 12-ounce servings. Since beer has an ethanol concentration of about 4%, the typical bottle or can of beer contains about one-half ounce of pure ethanol. A standard glass of wine has about four ounces of liquid. Wine is about 12% alcohol, so the glass of wine also has about one-half ounce of pure ethanol in it. Whiskey and other distilled spirits are dispensed in a "shot glass" which usually contains about one and one-quarter ounce of fluid. At a typical concentration of 40% ethanol (80-proof), the standard shot of whiskey has approximately one-half ounce of ethanol. Therefore, as far as the alcohol contained, **a can of beer, a glass of wine and a shot of whiskey are all the same.**

Lesson 2

PHYSIOLOGY OF ALCOHOL

Endogenous Alcohol

Endogenous means: originating from within the body, the opposite, exogenous, means originating from outside the body (such as consumed alcohol). There is considerable disagreement among experts regarding the existence of normal alcohol in the body, but both ethyl and methyl alcohols have been reported in literature. The amount or levels are so low (0.001 - 0.002) as to be insignificant in relation to driver impairment, or our ability to measure it with an Intoxilyzer instrument.

Ethanol is a Central Nervous System Depressant. It affects a person when it reaches their central nervous system, i.e., the brain, brain stem and spinal cord. Ethanol gets to the brain by getting into the blood. In order to get into the blood, it has to enter the body in some manner.

Ethanol has never been shown to absorb through the skin with any degree of accumulation and thus is not a factor to consider in a discussion of alcohol concentrations. Injection of ethanol is extremely dangerous because it produces a localized concentration that can severely affect the heart and other vital organs. The injection of ethanol as a method of entry is very rare.

Since ethanol is so irritating to the nasal passages and the mucus membranes, inhalation as a form of entry is not known to affect the blood alcohol concentration. One would have to expose them self to an extremely irritating environment of high concentration of ethanol for an extended period of time.

The use of enemas for entry of ethanol into the body has recently become a popular method of dosing. This is a very dangerous procedure because the rectum and colon of the body are responsible for extracting and returning to the body the water from fecal material. As stated previously, ethanol being a hydrophilic molecule will immediately combine with this fecal water and will very readily pass into the system.

Unlike oral ingestion, with the enema method there is very little lag time between the entry of ethanol and it's absorption into the blood. The end result is the possibility of lethal levels of ethanol being obtained in a very short time frame. The usual and most common method of ethanol entry is oral ingestion as a beverage.

ABSORPTION

Alcohol passes through all membranes in the body and is absorbed directly into the blood stream (does not need to be digested) by the process of diffusion. Ethanol can be absorbed from all sections of the gastro-intestinal system.

As soon as the alcohol enters the **MOUTH CAVITY** absorption begins. Alcohol is absorbed from the mouth cavity directly into blood, not all of the alcohol is passed on to the stomach through swallowing, some will remain in the mouth due to its combining with saliva. This alcohol will eventually be absorbed or passed on to the stomach. The alcohol that remains in the mouth cavity is known as **RESIDUAL MOUTH ALCOHOL**. (The residual alcohol from the last drink will disappear from the mouth cavity in less than 15 minutes.) The fact that alcohol can remain in the mouth for this period of time is the reason that:

ALL INDIVIDUALS MUST BE PLACED UNDER OBSERVATION FOR AT LEAST 15 MINUTES, AND NOT ALLOWED TO EAT, DRINK, SMOKE OR TAKE ANYTHING ORALLY PRIOR TO A BREATH ANALYSIS.

This ensures that no claim of **RESIDUAL ALCOHOL** or any other mouth contaminant that could possibly affect the result of a breath analysis. If a subject belches or regurgitates in to the mouth during the observation period, the observation period must be restarted.

After alcohol leaves the mouth it is passed on to the **STOMACH**. Alcohol can be absorbed through the stomach lining directly into the blood stream. This absorption is unique since most substances cannot diffuse through the protective lining. The stomach will account for approximately 10-25 % of the absorbed alcohol. As the alcohol enters the stomach the gastric juices will increase in flow, the more alcohol the greater level of gastric juice. Gastric juice is primarily diluted hydrochloric acid, hence the feeling of heartburn or stomach acid the morning after consumption. If the gastric juice level is significant enough to irritate the stomach lining, the stomach will institute one or both of the following procedures: 1) At high gastric juice or alcohol levels the stomach will secrete mucus in an effort to protect the stomach lining. This mucus will not only protect the stomach but may slow down the absorption process. 2) If the mucus fails to protect the stomach, the final line of defense the stomach employs is to expel the irritant from the stomach, via vomiting.

The stomach acts as a staging area for food substance prior to passage into the **SMALL INTESTINE**. The stomach is responsible for processing the food so the

small intestine can absorb the nutrients. The pyloric sphincter controls the passage of the food from the stomach into the small intestine. The passage of the alcohol into the small intestine will be greatly affected by the stomach contents. If the alcohol combines with food substances that require a long preparation time for passage into the small intestine, the passage of alcohol will also be delayed. The most significant factor concerning alcohol absorption is the amount and type of food substance ingested with or prior to the consumption of the alcohol. Peak alcohol levels differ significantly with full stomach ingestion versus empty stomach ingestion. (See Figure 1)

The most important site for alcohol absorption is the **SMALL INTESTINE**. The small intestine accounts for 75-90% of the absorption process. Once the alcohol enters the small intestine the alcohol is rapidly absorbed into the blood. The absorption of alcohol will occur within the first 10 - 12 inches of the small intestine called the **duodenum**. There are very few substances that will speed up the absorption process. Highly carbonated beverages, such as champagnes, may accelerate the absorption process by causing the pyloric sphincter to open and close more rapidly.

Generally speaking, all the alcohol that has been consumed will be absorbed into the blood stream within 30 - 90 minutes from the time of the last drink. In extremes, alcohol can be fully absorbed in as little as 15 minutes to as long as 3 hours from the time of the last drink.

Studies have also shown that the body will absorb an alcohol concentration of 20% faster than any other concentration. The reason for this is unknown, due to this response, alcohols at this concentration level are utilized as carriers for medicine i.e. cough and cold medicines.

DISTRIBUTION

Once the alcohol moves from the stomach into the blood, it will be distributed throughout the body by the blood. Alcohol has an affinity for water. The blood will carry the alcohol to the various tissues and organs of the body, and will deposit the alcohol in them in proportion to their water content. Brain tissue has fairly high water content, so the brain receives a substantial share of the distributed alcohol. Muscle tissue also has reasonably high water content, but fat tissue contains very little water. Thus, very little alcohol will be deposited in the drinker's body fat. This is one factor that differentiates alcohol from certain other drugs, notably PCP and THC, which are very soluble in fat.

The affinity of alcohol for water, and its lack of affinity for fat, helps explain an important difference in the way alcohol affects women and men. Pound for pound, the typical female's body contains a good deal less water than does the typical man's body.

This is because women have additional adipose (fatty) tissue, designed in part to protect a child in the womb. A Swedish pioneer in alcohol research, E.M.P. Widmark, determined that the typical male body is about 68% water, the typical female only about 55%. Thus, when a woman drinks, she has less fluid -- pound for pound -- in which to distribute the alcohol.

If a woman and a man who weighed exactly the same drank exactly the same amount of alcohol under the same circumstances, her BAC (Blood Alcohol Concentration) would climb higher than his. When we combine this to the fact that the average woman is smaller than the average man, it becomes apparent that a given amount of alcohol will cause a higher BAC in a woman than it usually will in a man.

ELIMINATION

As soon as the alcohol enters the blood stream, the body starts trying to get rid of it. Some of the alcohol will be directly expelled from the body chemically unchanged. For example, some alcohol will leave the body in the breath, in the urine, in sweat, in tears, etc. However, only a small portion (about 2-10%) of the ingested alcohol will be directly eliminated.

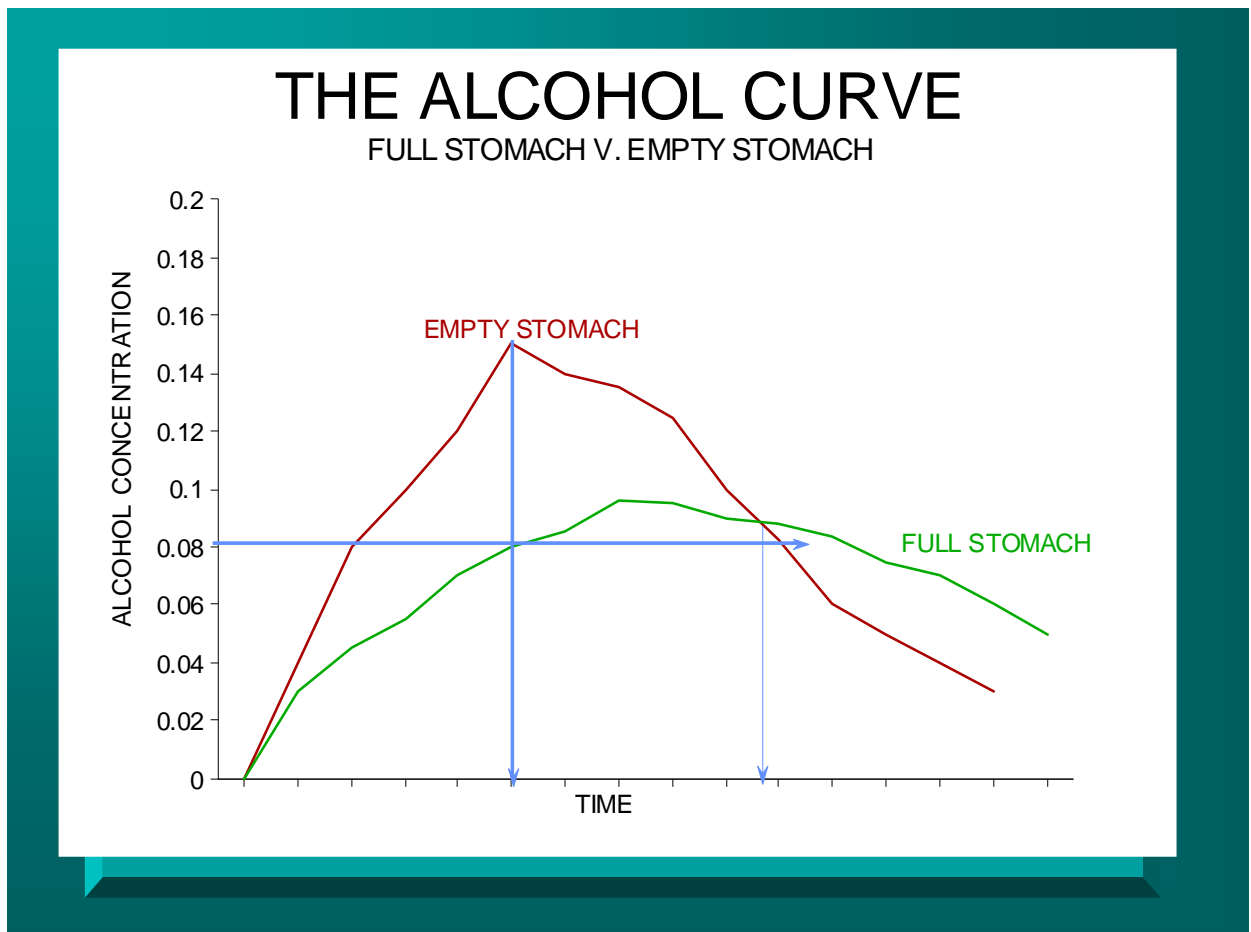
Most of the alcohol a person drinks is eliminated by **metabolism**. Metabolism is a process of chemical change. In this case, alcohol reacts with oxygen in the body and changes, through a series of intermediate steps, into carbon dioxide and water, both of which are directly expelled from the body.

Most of the metabolism of alcohol in the body takes place in the liver (90 - 98 %). An enzyme known as **alcohol dehydrogenase** acts to speed up the reaction of alcohol with oxygen. The speed of the reaction varies somewhat from person to person, and even from time to time for any given person. On average, a person's blood alcohol concentration -- after reaching peak value -- **will drop by about 0.015% per hour.** For example, if the person reaches a maximum BAC of 0.15%, it will take about ten hours for the person to eliminate all of the alcohol.

For the average-sized male, a BAC of 0.015% is equivalent to about two-thirds of the alcohol content in a standard drink (i.e., about two-thirds of a can of beer, or glass of wine or shot of whiskey). For the average-sized female, that same BAC would be reached on just one-half of a standard drink. So the typical male will eliminate about two-thirds of a drink per hour, while the typical female will burn up about one-half of a drink in that hour.

We can control the rate at which alcohol enters our bloodstream. For example, we can gulp down our drinks, or slowly sip them. We can drink on an empty stomach, or we can take the precaution of eating before drinking. We can choose to drink a lot, or a little. But once the alcohol gets into the blood, there is nothing we can do to affect how quickly it leaves. Coffee won't accelerate the rate at which our livers burn alcohol. Neither will exercise, deep breathing, or a cold shower. We simply have to wait for the process of metabolism to move along at its own speed.

Figure #1



Lesson 3

THE EFFECTS OF ALCOHOL

As a general rule, alcohol is classified as a DRUG, more specifically, a Central Nervous System depressant.

The effects of alcohol are demonstrated in all of the sensory and motor functions of the body. Even though alcohol is distributed throughout the total body, it is in the brain where alcohol exerts its primary drug effect. Alcohol acts to depress the nerve transmissions between various sections of the brain and the rest of the body. This disruption of communication between the brain and the other nerve centers of the body results in a dramatic reduction of all mental and physical faculties.

For teaching purposes the brain will be divided into four sectors: **THE HIGHER CENTER OF LEARNING, THE MIDLINE BRAIN FUNCTIONS, MOTOR SKILLS** and **THE BRAIN STEM**.

Alcohol effects the brain in the reverse order of the brain's development. The first area of the brain affected is THE HIGHER CENTER OF LEARNING. **The first effect is on a person's Judgment and Morals**, as this section of the brain is responsible for our decision making process. Processes that include our social and religious morals and mores, our standards and ethics, risk assessment, self-evaluation, inhibitions, and general sense of reality are all contained in this area. Alcohol will effect this area of the brain at very low levels (0.02 - 0.04 %), resulting in a loss of ability to appropriately assess one's current level of ability, the potential risk involved in a certain act, or in short, the ability to make an unaltered and logical judgment of a given situation or event.

As the level of alcohol in the brain increases more of the brain is affected and therefore less of our mental and physical functions can be relied upon to assist us or control our actions.

The area of the brain referred to as **THE MIDLINE BRAIN FUNCTIONS** relates to the functions of the senses; sight, hearing, touch, smell, and taste. As the alcohol level increases changes will occur within the eye, the ear, the sense of smell, and the sense of touch. Alcohol will begin to affect this area of the brain at a concentration of .06%.

In the ear alcohol increases what is known as the **acoustical threshold**. Sounds must be louder and tones must be more distinct. This occurs slowly during drinking and few individuals even notice this hearing loss. At the conclusion of drinking, the

alcohol effect would simulate driving an automobile through heavy traffic wearing earplugs.

The eye will exhibit a number of changes due to the alcohol.

Studies have shown that blurring of color, depth perception, and diplopia (double vision) can occur with alcohol levels as low as .08 % and the visual acuity

(sharpness) was effected at 0.01 % in novice drinkers and 0.04 % in heavy users.

The ability to track an object or the ability to focus did not display impairment until a level in excess of .08 % is reached. However, when both the tracking ability and the ability to focus were measured as one, rather than independently, this tracking/focus ability was affected at relatively low alcohol levels. Two of the most dangerous effects that the alcohol will cause is a lengthening of the time for the eye's ability to recover from glare and light fixation. In glare recovery the amount of time that a normal eye takes to readjust from dim light, to bright light, and back again is very short. Alcohol can cause this reaction to take, in some cases, over six (6) times longer than normal. In a driving situation these additional two or four seconds of glare blindness could mean a person's life. Light fixation is when an intoxicated person becomes so intently focused on a light source, especially a flashing one, that the person is relatively impervious to other external stimuli. It is not uncommon for an intoxicated driver to crash into a patrol car, which has its lights flashing, and while it is parked along the side of the road. Another important visual effect of the alcohol is distortion in estimation of distance. An individual under the influence of alcohol will consistently over estimate the distance between two points and this will result in an underestimation of the person's own speed. More critically, the individual will assume that a greater distance exists between any on-coming objects, hence the number of head on crashes because the intoxicated driver is attempting to pass another vehicle.

The sense of smell is very quickly dulled by the action of alcohol. This may not seem an important sense for safe driving but ask yourself; have you ever stopped your car because something did not smell right? A car which is over heating, burning of oil from the vehicle, the smell of brake linings overheating, etc. all of these create very distinct odors. If the ability to detect these problems is hampered, a possible safety hazard may occur.

The sense of touch is altered in that sensations must increase in pressure and intensity. The danger here is the change in grip strength for handling the steering wheel and the pressure that is exerted on the gas or brake pedal. The ability to determine different textures also becomes less efficient.

Alcohol also affects the sense of taste causing most foods to taste bland.

As the level of alcohol increases the area of the brain concerning **MOTOR SKILLS** are influenced. Muscular coordination is affected. Alcohol will depress nerve transmissions to muscle thus affecting the performance of that muscle. Nerve

transmission depression, in conjunction with diminished brain performance, is the cause for the dramatic change in reaction time. At low levels of alcohol (0.06 %) fine muscle (motor) coordination is affected. This influences the persons ability to perform tasks which require finger dexterity, such as the extraction of the driver ' s license. As the alcohol concentration increases larger muscle groups become impaired affecting the gross muscle (motor) coordination.

At levels of 0.08 % and above the typical visual effects begin to manifest themselves, staggering walk, problems with balance, hand to eye coordination, and slurring of speech.

The final area of the brain to be affected is the **BRAIN STEM**. The brain stem controls all of the body ' s autonomic functions. Once the alcohol reaches a level in excess of 0.10 % changes are evident in heartbeat, respiration, and body temperature. If the intake of alcohol continues and exceeds 0.40 % the respiration functions can cease. **Death caused by alcohol poisoning is a result of the stoppage of respiration.**

Alcohol also acts as a vasodilator. Blood vessel walls will relax under the action of alcohol, causing more blood to be delivered to the extremities (arms, legs, feet, and hands). The flushed face that is observed in some individuals is a direct result of this dilation effect. As a consequence of this additional blood being sent to extremities, the body will experience a heat loss at its core. Alcohol should never be given to a person suffering from exposure since this will result in further lowering the body ' s core temperature.

ALCOHOL IN COMBINATION WITH OTHER DRUGS

The visual symptoms that one relates to alcohol intoxication are certainly not unique.

Many drugs will produce the same or similar results, as will some illnesses and diseases. The visual symptomology normally attributed to alcohol intoxication, slurred speech, staggering, drowsiness, loss of equilibrium, loss of motor skills, etc. are thought of as just mere manifestation of the drug. However, if an individual was not consuming alcohol, but was taking another drug, for instance Valium, these same symptoms are common indicators of an overdose of that drug. Many symptoms that are used as our visual observations of a DUI would indicate a possible overdose situation for other drugs.

One of the real dangers of alcohol is its reaction with other drugs. Alcohol, when taken in combination with another drug or drugs, will produce two possibilities: additive or synergistic. An additive effect is when a drug is combined with alcohol and the effects are equal to two doses of the drug or alcohol. Alcohol in combination with Phenobarbital is an example of an additive effect. Alcohol when combined with Valium is an example of a synergistic reaction. The effect of this combination will produce an effect that is greater than two doses of the drug or alcohol.

WHENEVER ANY DRUG IS COMBINED WITH ALCOHOL, THE ABILITY OF THAT INDIVIDUAL IS MORE GREATLY IMPAIRED THAN WITH THE ALCOHOL OR DRUG ALONE.

A breath analysis cannot detect the presence of drugs, however, the fact that the alcohol results which were obtained did not correlate to the observed symptoms of the individual, is sufficient probable cause to warrant a further investigation of possible drug intoxication.

Alcohol itself still remains the number one cause of accidents and motor vehicle fatalities. However, it has been estimated that the combined use of drugs and alcohol in drivers suspected of DUI is well above 40%. Studies have indicated that alcohol/drug(s) combinations are present in approximately 25% of all accidents, and 33% of these had used two or more drugs. The increasing use of alcohol with drugs and drug combinations is fast becoming an extremely critical situation.

Certain illness or diseases may cause comparable symptoms. Diabetes, epilepsy, and certain types of trauma, especially head trauma, are some examples.

ALCOHOL TOLERANCE

One of the most misunderstood areas of alcohol consumption is **TOLERANCE**. Tolerance is typically thought of, as habitual use of a drug, one has to continually increase the dosage of that drug to obtain the desired pharmacological result. In the case of alcohol, the body will not necessarily develop a tolerance in a pharmacological sense due to chronic use of the drug, but it can in fact develop methods of compensation with regards to the exhibited effects. There are two very distinct categories of tolerance that do occur: NATURAL AND LEARNED.

Natural tolerance can be subdivided into the following areas: inborn, physical, and stress.

Inborn tolerance is the body's own unique tolerance to the drug action of alcohol. This type of tolerance is only effective at relatively low levels of alcohol concentrations. In fact it has never been shown that any individual has the inborn capability to ward off the effects of alcohol above .08 %, in fact studies demonstrate that this type of tolerance is most prominent between levels of .04 % to .06 %.

Physical tolerance. The effect of a given dose of alcohol will be much more pronounced if the individual is ill. If an individual's physical and mental abilities are already effected due to illness, this will only add to the effect of the alcohol. However, remember that although an individual who is ill will be more greatly affected by the alcohol, an individual who is in superb physical health is not less affected.

Stress tolerance is one form of tolerance that every law enforcement officer has come into contact with, but may not have recognized. An individual when put through the field sobriety maneuvers did poorly at the time of the stop, yet when the individual was reassessed later they performed well. This is a classic example of stress tolerance. In high stress situations or circumstances of increased anxiety the body will release adrenalin in response to these conditions. The release of adrenalin has been shown to cause some intoxicated individuals to appear less intoxicated than they really are. It is not clear whether or not this is caused by increased metabolic rate, thereby masking the effects of alcohol, or if it is due to the individual becoming more aware of their situation resulting in the individual's attempt to cover their intoxication.

Stress tolerance is a rather temporary phenomena and lasts for only a few minutes, however those few minutes may make a great deal of difference in your observation of a field performance maneuver.

Learned tolerance incorporates three areas: Psychological, Acquired, and Acute Tolerance.

Psychological tolerance is a result of all of your life's experiences, teaching and training. Our behavior is controlled by a number of factors, the social setting in which we find ourselves, our basic ideas of right and wrong, the religious training received, current mental state, the individuals we associate with, and a whole host of other components. The psychological makeup of an individual can cause that individual to refrain from certain actions, however when alcohol is consumed many of these psychological restraints disappear. The most direct source of evidence for this is to compare the number of crimes that are committed under the influence of alcohol, to those that had no alcohol or drugs involved.

The most common type of tolerance is **Acquired tolerance**. Acquired tolerance is only established through habitual use of alcohol. The individual that is a chronic drinker can accustom him or herself to the effect of the alcohol and learn to compensate for some of the more obvious effects. The individual that can perform the field sobriety maneuvers well, even though he has a high alcohol concentration is the classic example of this tolerance. It is important to remember that an individual, if given sufficient time and experience being intoxicated, can compensate for the effect of alcohol on gross motor functions and conscious activity. They cannot compensate for judgment, reaction, and safety or risk perceptions.

Another type of tolerance is **acute tolerance**, also referred to as **The Melanby Effect**. The Melanby effect is the mind's tendency to continually compare it's current condition to a previous condition. During the Pre-Peak phase of the alcohol curve the individual will compare his current condition with the condition of being alcohol free. A person at this point in time over estimates his level of intoxication.

Once the individual enters the Post-Peak phase he will compare his current state to a higher level of intoxication and will always under estimate the level of intoxication. This under estimation during the Post-peak phase increases the danger of operating a motor vehicle.

None of these examples of tolerance can alter the fact that under the influence of alcohol, our physical and mental abilities to operate a motor vehicle safely have been diminished

Lesson 4

History of Breath testing Instruments

The first scientific research into alcohol in the human body started about 150 years ago. In 1874 Francis Edmund Anstie a physician and researcher from England showed that a small fraction of the total amount of alcohol ingested could be recovered in the breath and urine.

In the late 1800's and the early 1900's pharmacologist Arthur Robertson Cushny contributed to the study of exhaled volatile substances. He injected a known amount of substances such as acetone, chloroform, ether, ethyl acetate, methanol, and ethanol into the blood streams of cats and then analyzing the expired air.

Another undisputed leader in experimental research was Erik M.P. Widmark, Professor of Medical and Physiological Chemistry at the University of Lund in Sweden. Widmark showed that the absorption, distribution, and elimination process could be described in mathematical terms. This opened up the way to apply new technology to the analysis of blood and breath alcohol.

An important milestone in the history of breath-alcohol analysis as a test for intoxication occurred around 1927. Dr. Emil Bogen wrote a study comparing the results of breath alcohol with the concentrations determined in blood and urine. The subjects for the study were patients admitted to the hospital in a state of intoxication or victims of trauma. A sample of their breath was collected in a football bladder and a known volume was allowed to pass through a mixture of dichromate-sulfuric acid that effectively oxidized (caused a chemical reaction that changed the color of the acid) to show the presence of alcohol. A standard was taken of the changes in color of the alcohol solution from yellow-orange to various shades of green-blue they were compared to the tested subjects results to determine the alcohol concentration. The concentration of alcohol in the breath was determined by visual calorimetry (color change chart) and the results showed a good correlation with various clinical signs and symptoms of inebriation and also the concentrations of alcohol in blood and urine. This early study also established for the first time that the concentration of alcohol in two liters of breath was roughly equivalent to that contained in one milliliter of blood or urine.

Professor Rolla N. Harger, of the Department of Pharmacology and Toxicology at Indiana University, came up with the idea of a portable device for breath-alcohol analysis. In the late 1930's and early 1940's Dr. Harger developed the first generation breath alcohol instrument called the Drunkometer. The Intoximeter and Alcometer were two other instruments of the time. The Drunkometer and Intoximeter captured and analyzed samples of expired air and the alveolar portion

(deep lung air) was derived by analysis of CO₂ assuming that this was constant at 5.5% of total expired air.

The algometer device was designed to capture a sample of breath for analysis at the end of a prolonged exhalation (alveolar air).

Since the first devices appeared in the late 30's and early 40's there have been rapid and significant improvements not only in methods for analyzing alcohol but also regarding the physiology of breath-alcohol testing. The reliability of the first generation of breath-alcohol devices was constantly being challenged causing debate and speculation about the accuracy of these instruments for use in law enforcement.

The next major advance in breath-testing technology came in 1954 when Lt. R.F. Borkenstein of the Indiana State Police developed the Breathalyzer device. This instrument represented a significant improvement over existing technology or breath-alcohol analysis and incorporated several unique features. The Breathalyzer was compact, robust, and easy to operate by a trained police officer and gave highly reliable results.

The instruments we use today operate on Infrared Spectrometry. It was in the late 1960's that infrared Spectrometry was investigated for monitoring the concentration of anesthetic gases such as diethyl ether in the expired air. Soon afterwards, this same technology was applied to measure several other gases and volatile substances in human breath, including alcohol. The Intoxilyzer was produced in 1971 that incorporated infrared spectrometry into a compact easy to operate instrument suitable for police use. (Forensic Science Review ^AMeasuring alcohol in blood and breath for forensic purposes. Jones 1996)

The Intoxilyzer in use today:

1. Utilizes infrared light absorption as opposed to chemicals to measure alcohol concentration.
2. Easier, less complicated operation (Computer controlled).
3. The operator or test subject cannot manipulate test results.

Intoxilyzer 5000 (66 Series) began being used in Utah in the early to mid 80's.
Intoxilyzer 5000 (68 Series) was put into service in Utah in the mid to late 90's.
Intoxilyzer 5000EN (enhanced) was put into service in 2000.
Intoxilyzer 8000 is the newest version of Breath Testing Instrument in use in Utah.

History of Utah's breath-alcohol instruments.

Model 4011AS

Developed by Richard A. Harte of Omicron in 1971. This instrument was good but the operator had to manually set air blanks by using knobs, and adjust a glass lens to calibrate the internal standards.

Model 4011ASA

Updated version of 4011AS, no zero set knob, this instrument was more automated.

Breathalyzer

Developed by Dr. Robert F. Borkenstein (explained earlier in the chapter).

Table 1. Classification of evidential breath-alcohol instruments into six generations depending on the time period when they were developed.

Time period (generation)	Instrument or device	Scientific principle for analysis of alcohol in breath
1930-1953 (first)	Drunkometer Intoximeter Alcometer	Oxidation with acidified KMnO_4 or I_2O_5 (Alcometer)
1953-1970 (second)	Breathalyzer	Oxidation with acidified $\text{K}_2\text{Cr}_2\text{O}_7$ + sulfuric acid Poto-Electric Intoximeter contained in glass ampules with photometry to detect lthanographe the end-point
1969 (third)	GC Intoximeter	GC separation on Porapak Q with FID detector for quantification
1970 (third)	Intoxilyzer 4011	IR absorptiometry at a single wavelength of 3.4 microns
1971(third)	Alco-Analyzer	GC separation on Porapak Q and thermal conductivity detector for quantization.
1973 (third)	Alert (screening test)	Incorporated in tin-oxide solid-state semiconductor called a Taguchi (T-cell), which oxidized ethanol causing a change in resistivity.
1975 (fourth)	Intoximeter 3000	Single IR wavelength (3.4 m) and T-cell combined in same unit
1976 (fourth)	Intoxilyzer 5000	Dual wavelength IR analyzer (3.39 m and 3.48m)
1979 (fourth)	Alcomat Alcotest Datamaster	Analysis by IR absorption at either 3.4m or 9.5 m Dual wavelength IR analyzer (3.37 m and 3.44m)
1986 (fifth)	Alcotest 7110	IR analyzers operation at a single wavelength of 9.5m
1992 (sixth)	Intoxilyzer 6000	Multiple-wavelength IR analyzer
1994 (sixth)	Intoximeter EC/IR	Electrochemical fuel cell detector for analysis of alcohol and IR detector for monitoring the CO_2 profile during exhalation.
1995 (sixth)	Alcotest 7110 Mark III	Combined IR and electrochemical (fuel cell) detector for alcohol.

Lesson 5

Intoxilyzer 8000

The CMI, Inc. INTOXILYZER 8000 is an infrared-based device, as is shown in the diagram below, has been designed for both mobile and stationary evidential breath alcohol testing. It has a revolutionary design with several features and software configurations.



1. Mouthpiece storage area.
2. Breath Hose coiled in the top recess of the instrument to allow easy access. Thirty-six inches in length, the hose is flexible but non-kinking, non-collapsible and is heated to ensure that no condensation forms when a breath sample is supplied. The temperature of the breath hose is under digital temperature control. Despite this, it is advised that at all ambient temperatures, when not in use, the hose be positioned correctly within the housing. The hose accepts standard mouthpieces.
3. Instrument 40-character alphanumeric display. [Vacuum fluorescence].
4. Drop-down standard PS/2 keyboard -may be detached from main unit to enable data entry to be performed remotely from where the test is taking place.
5. Thermal printer unit, has a paper roll that when it is almost "out", a thin red line appears along the edge of the roll. When this occurs, it will be possible to perform no more than five custom test printouts until the end of the paper is reached.
6. Start button – This button is used to run an evidential breath test.

The CMI, Inc. INTOXILYZER 8000 has a nominal power requirement of 60W. The

device may be powered by each of the following:

115V AC (47-63 Hz)

220VAC (47-63 Hz)

12VDC nominal (10 to 16VDC)

The power supply feeds into a recess at the rear of the device (not shown in the diagram) and has been designed in such a way that ensures that the overall footprint of the device remains unchanged when power supply cables are connected. This means that the device is ideal for use in confined areas such as police vehicles.

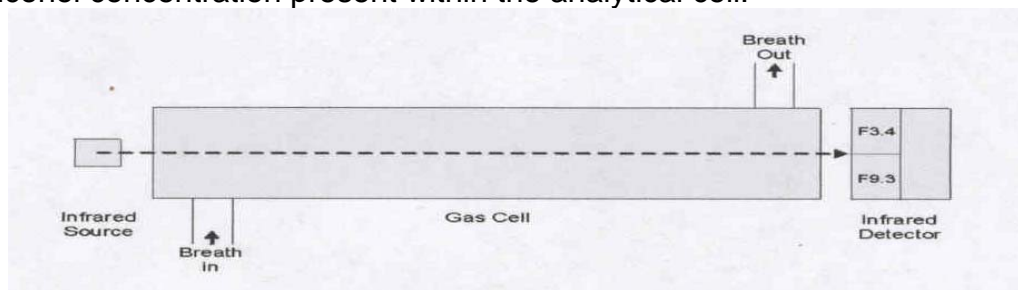
PRINCIPAL OF ANALYSIS

As indicated in the Intoxilyzer 5000, the fundamental principle of analysis is non-dispersive infrared absorption. That is, the greater the concentration of alcohol in a subject's breath specimen, the greater the amount of infrared light that is absorbed by that specimen. An infrared detector detects the absorption of the infrared light.

Applying this fundamental and scientifically accepted principle, in its design the CMI, Inc. INTOXILYZER 8000 overcomes the only downfall of this method of quantifying a subject's breath alcohol concentration. That is, when using infrared light at a single wavelength it is possible that interferants present within the breath also absorb at the selected wavelength. The effect of this of course being that artificially high breath alcohol readings may be reported by the device.

In order to eliminate this possibility the CMI, Inc. INTOXILYZER 8000 operates using infrared light selected at two wavelengths, 3 and 9 microns. The absorption ratio that is generated when alcohol alone is supplied in the path of the infrared light creates what may be termed as a fingerprint and that allows the device to discriminate between those samples, which are contaminated by breath interferents, and those that are not.

What differentiates the CMI, Inc. INTOXILYZER 8000 from other infrared-based breath testing devices is the fact that it has been designed in such a way that it will allow for prolonged use without the requirement for recalibration. The reason for this is that there are no moving parts within the device. The infrared light is pulsed in order that the dual pyroelectric detectors may accurately quantify as well as qualify the alcohol concentration present within the analytical cell.



DATA ENTRY

The INTOXILYZER 8000 requires the operator to input the following data:

Subject last name

Subject first name

Subject middle initial

Subject date of birth entered at mm/dd/yyyy

Driver license number

State of issue

Arresting officer

Badge number

Time observed for "Baker" (The instrument will countdown 15 minutes from the time first observed for "Baker")

This information is necessary due to the fact that the printer is located in the instrument and will be printed out when the test is complete.

INVALID TEST PROCEDURES

The Intoxilyzer 8000 has the same invalid test procedures that occur with the Intoxilyzer 5000.

Invalid Test

Green Start button pushed at wrong time

Pump inadequately purged sample chamber

Internal standards failed

Sample Introduced at Improper Time

Subject blew into the breath tube at the wrong time (during an air purge)

Instrument will print, Invalid Test-Sample introduced at Improper Time.

Unable to Obtain Stable Reference

The microprocessor was unable to obtain a stable reference signal from the processor, test card, will print A Invalid Test

Invalid Sample .XXX (Mouth Alcohol)

The instrument detects residual mouth alcohol in the breath sample. The instrument will print AInvalid Sample .XXX in place of subject test results.

Any other abnormality in the breath test sequence that the instrument can detect many also cause an "Invalid Sample .XXX"

Deficient or Insufficient Sample

Subject being tested fails to provide an adequate sample within three minutes

It will print Δ highest value obtained

Courts look upon this result as a refusal

*Virtually any Δ reasonable and prudent person can satisfy the minimum test requirements

REMEMBER this is an invalid test and can be treated as a refusal.

Inhibited RFI

Radio frequency interference is present

In the event of RFI, turn off all hand held radios, cell phones, remote video microphones, and any other electronic device which may be in the vicinity.

Ambient Failure

In the event that the Intoxilyzer notices alcohol in the Δ ambient (room) air, it will inhibit the test will print Δ Check Ambient Conditions

Move breath hose away from subject, or check the surrounding area for alcohol-based products (hand sanitizer etc.)

Refusal

In the event the subject refuses, the operator can depress the green start test button during the three-minute window in which the subject has to fulfill the test requirements. The instrument will print, Δ Subject Refused to Continue

Criteria for Adequate Breath Sample

Blow one pound of breath pressure, register with flow meter

Minimum of 1.1 liter of breath

Blow for 4 seconds

Reach Plateau

*Reading must not climb more than .003/sec

Stop blowing.

Standby Mode

The Intoxilyzer 8000 is equip. with a "standby"

After 20 minutes without use they will go into this mode.

The display will be blank, but the power button will be on.

To initiate a test from this mode you must first depress the start test button to get the instrument out of standby mode!

*It will take approximately one minute.

Problems??

If you are having a problem or think that you are having a problem with the Intoxilyzer **please call the technician immediately!**

Lesson 6

Intoxilyzer Model 5000

Omicron Corporation from California first produced the Intoxilyzer in 1971. CMI Corporation of Colorado, who perfected and now produces the instrument, purchased it. CMI was purchased by MPH and operates out of Kentucky.

The CMI Intoxilyzer offers law enforcement agencies a practical aid in their fight against the nation's leading cause of highway fatalities - the drinking driver.

It is an answer to many of the problems previously encountered by other breath testing instruments. For example:

- It is quick and easy to operate.
- It is safe to operate because the operator does not have to handle any chemicals.
- It gives a permanent record.
- It has an established legal record.
- It is highly reliable because it is tamper proof. Any error in the procedure will abort the test with no alcohol test results printed.

There is nothing magical about the way the Intoxilyzer works. Depending on their physical size and structure, molecules absorb light energy at specific frequencies. For example, alcohol molecules absorb energy of infrared light in a particular frequency range. Using an infrared energy absorption technique, the Intoxilyzer 5000 breath alcohol analysis instrument finds the alcohol concentration in a breath sample.

The heart of the Intoxilyzer is its sample chamber. At one end of the sample chamber, a quartz iodide lamp emits infrared light energy, which is directed through the chamber by a lens. At the opposite end of the chamber, a second lens focuses the energy leaving the chamber through a filter wheel and onto an infrared energy detector.

Equipment Theory & Operation -Intoxilyzer Model 5000

The outside of the Intoxilyzer houses the breath tube (a heated, reinforced tube which is detachable from the instrument), the start test switch (green), the power switch (red), the test record card slot, and the digital display. On the back, you will find the power cord, a 3-amp fuse, and the reset button. Also located on the back are numerous other ports. The technician uses these to service the instruments.

This instrument works on the theory of infrared (IR) light absorption. IR light is a form of energy known as *electromagnetic radiation*. Other forms of electromagnetic radiation are: cosmic rays, gamma rays, x-rays, ultra-violet light, visible light, infrared light, micro waves and radio waves.

FACT: All things will absorb *electromagnetic radiation* in their own unique and consistent manner

FACT: All things will absorb *infrared light* in their own unique and consistent manner and will create their own unique and consistent absorption pattern.

The optical bench consists of an infrared light source, a sample chamber with lenses on each end, a filter wheel with three filters, and a photo detector. The infrared light passes through the sample chamber then through the filter wheel and onto the photo detector. The light striking the photo detector produces a level of energy labeled as X1. When a breath sample is introduced into the sample chamber, the light striking the detector after the alcohol is introduced produces a different level of energy labeled as Y1.

Infrared Principle: If we establish the amount of IR light able to pass through a chamber with no alcohol present, we have X1. We then establish the amount of IR light able to pass through a chamber with alcohol present, and get Y1. Therefore, $X1 - Y1 = A.C.$ (Alcohol concentration)

IR Principle Simplified: The more alcohol present in the breath sample, the greater the absorption of infrared energy.

The filter wheel, from the optical bench, consists of three filters: 3.39, 3.48, and 3.80 microns. The 3.39 filter is for interferant, the 3.48 filter is alcohol, and the 3.80 filter is a reference filter.

The digital readout on the front of the instrument gives you visual instructions, provided by a 16 character alphanumeric display. The instrument will communicate with the operator, presenting the current status or mode of the test cycle.

Invalid Test- The test could not be completed or there was an improper procedure.

Insufficient Sample- The subject did not provide a breath sample to fulfill the requirements of the instrument

Subject Refused- The subject refused to provide a breath sample.

All intoxilyzers in the state of Utah have a programmed test sequence.

Air Blank
Calibration (Internal Standards)
Air Blank
Breath Test
Air Blank

FEATURES

Internal Standards

.100, .200 & .300
Correspond to the three channels
Must be within 5% +or-
 * 68 Series will only print ok on test record card
Instrument will fail if they are out of parameters

Instrument communication Tones

Beep
 *Sound after completion of each mode of operation
Continuous steady tone
 *Sounds while subject blows into the mouthpiece
High-Low Tone
 *Sounds in the event of:
 -Malfunction
 -Incorrect operational procedure
 -Unfulfilled test requirement
 -Initiation of refusal

RFI Protection

The Intoxilyzer 5000 is housed in an all metal case and is equipped with an RFI detector (radio frequency interference)
 *It will automatically inhibit tests when excessive levels of RFI are present
 *The antenna is located in the breath tube
 -Make sure gray wire is connected
Video remote mics and the new 800 Meg radio will also cause this problem.

Heated Breath Tube

The breath tube is heated to avoid condensation in the instrument and can be detached from the instrument

INVALID TEST PROCEDURES

Invalid Test

Green Start button pushed at wrong time
Pump inadequately purged sample chamber
Internal standards failed

Sample Introduced at Improper Time

Subject blew into the breath tube at the wrong time (during an air purge)
Instrument will print, Invalid Test-Sample introduced at Improper Time.

Unable to Obtain Stable Reference

The microprocessor was unable to obtain a stable reference signal from the processor, test card, will print Invalid Test

Deficient or Insufficient Sample

Subject being tested fails to provide an adequate sample within three minutes

*68 series will print highest value obtained

Courts look upon this result as a refusal

*Virtually any reasonable and prudent person can satisfy the minimum test requirements

REMEMBER this is an invalid test and can be treated as a refusal.

Inhibited RFI

Radio frequency interference is present

In the event of RFI, turn off all hand held radios, cell phones, remote video microphones, and any other electronic device which may be in the vicinity.

Ambient Failure

In the event that the Intoxilyzer notices alcohol in the ambient (room) air, it will inhibit the test will print Check Ambient Conditions

Move breath hose away from subject, or check the surrounding area for alcohol-based products (hand sanitizer etc.)

Interferent Subtracted

The subject's breath sample contained an interferent such as acetone (readings of acetone may indicate a person that is diabetic) that absorbed infrared energy in the same frequency range as alcohol. The instrument will print an accurate breath alcohol reading (with interferent subtracted out)

Seek medical attention!!!!

Invalid Sample .XXX

The instrument detects residual mouth alcohol in the breath sample. The instrument will print Invalid Sample.XXX in place of subject test results.

Any other abnormality in the breath test sequence that the instrument can detect may also cause an "Invalid Sample .XXX"

Refusal

In the event the subject refuses, the operator can depress the green start test button during the three-minute window in which the subject has to fulfill the test requirements. The instrument will print, Subject Refused to Continue

Criteria for Adequate Breath Sample

68 Enhanced

Blow one pound of breath pressure, register with flow meter

Minimum of 1.1 liter of breath

Reach Plateau

*Reading must not climb more than .003/sec

Stop blowing.

Standby Mode

68 Enhanced models are equipped with standby mode.

After 20 minutes without use they will go into this mode.

The display will be blank, but the power button will be on.

To initiate a test from this mode you must first depress the start test button to get the instrument out of standby mode!

*It will take approximately three minutes.

Problems??

If you are having a problem or think that you are having a problem with the Intoxilyzer **please call the technician immediately!**

Lesson 7

Intoxilyzer Operational Procedure

In most locations, you will find either an Intoxilyzer 8000 or 5000 series 68EN. For mobile applications the Intoxilyzer 8000 is available. All of these are equipped with a standby mode. This allows the Intoxilyzer to be used with a short warm up time. During stand by mode power is applied to the heaters within the Intoxilyzer, but the microprocessor, filter wheel, and the light source are off. When an officer attempts to initiate a test sequence on an instrument that is in standby, it will only take two to three minutes for the instrument to run through its diagnostic tests prior to being ready to initiate a subject test sequence. Push the green start button to bring the instrument out of standby and prepare it for use.

Required records

In an effort to obtain useful information on the role of drinking drivers in the State of Utah, it is obvious that adequate records be kept. Therefore, the following procedures should be followed:

Prior to administering the test, the operator should establish the identity of the testing subject, either from the officer requesting the test or through some form of identification. The name should be entered on the Intoxilyzer Data entry (8000 Series). Operational Check List, and the Test Record Card, and on the Instrument Logbook (5000 series).

The Test Record Card and Log Book should be filled out completely and accurately and the test result should be entered in the logbook (5000 series). If, after the instrument is prepared, the subject refuses to take the test, the notation **ΔRefused@** will be entered instead of the test result. Other entries may include, but not be limited to: Deficient Sample, Insufficient Sample, Sample Introduced at Improper Time, Ambient Failed, Internal Failed, etc.

Whenever it becomes necessary to administer more than one test on any one subject, both the test record card and check list for each test should be retained for/by the officer requesting the test. All test attempts and results shall be entered in the instrument logbook (5000 series).

Always use the checklist!

There will always be checklists and test record cards at each location. (5000 series)

Always fill out all the blanks on the checklist

Always follow the proper sequence (numerical order)



Remember, if you don't check the box or fill in the blank, it never happened!

68 Series - Leave ON!

Instrument will go into Astandby@ mode

8000 Series – Leave ON!

Instrument will go into “standby” mode

	<p>Utah Department of Public Safety Intoxilyzer 5000 / 8000 Operational Checklist</p>	
<hr/>		
<p>Instrument power is on, warmed up and is in ready mode.</p>		
<hr/>		
<input type="checkbox"/>	1. Push Start Test Button.	
<input type="checkbox"/>	2. Insert Test Record Card (5000) Enter Data (8000)	
<input type="checkbox"/>	3. Insert Mouthpiece. (When instrument reads "Please Blow/R")	
<input type="checkbox"/>	4. Obtain Sample (allow subject to blow into mouthpiece)	
<input type="checkbox"/>	5. Remove Mouthpiece.	
<input type="checkbox"/>	6. Retrieve Test Record Card (5000) Retrieve printout, reprint as many copies as needed (8000)	
<hr/>		
<p>End of Test</p>		
<hr/>		
SUBJECT: _____ DATE: _____		
INTOXILYZER SERIAL NUMBER: _____		
LOCATION: _____		
OPERATOR: _____		

LESSON 8

DRIVING UNDER THE INFLUENCE LAW, NOT A DROP, AND ADMISSIBILITY OF BREATH TESTS.

In **1911** Utah passed a law making it illegal to drive while intoxicated. The law read as follows:

“.....unlawful to operate motor vehicles while under the influence of liquor. No person shall operate any motor vehicle upon any public highways of this State, whether as owner, chauffeur, or operator of such vehicle, while under the influence of intoxicating liquor.”

In **1949**, Utah passed an act putting into law the interpretation of chemical tests for intoxication. This law provided that blood alcohol levels below 0.05% by weight were presumptive evidence of not being under the influence; levels above 0.15% were presumptive evidence of being under the influence, and levels between 0.05% and 0.15% indicated possible influence.

In **1967** the Utah Legislature rewrote the DUI (Driving Under the Influence) law with the most dramatic change being the reduction of the presumptive level to 0.08%, the lowest level in the United States. Great Britain also reduced their presumptive level to 0.08% in October of 1967, which resulted in a 42% drop in nighttime accidents during the first month in the city of London.

In **1969** the Utah Legislature further strengthened the DUI law, thus making the Utah statute one of the most restrictive in the nation.

Again, in **1977**, the Legislature revised the DUI law changing some of the language in order to clear up some problems experienced in the courts. In **1987** the law changed so that a breath test stood on its own and did not have to be related to blood (2100 L breath to 1 milliliter blood ratio). The current DUI law, enacted in **1983** and updated in **2005**, made substantial changes including dropping the per se standard to 0.08% and doing away with the presumptive levels.

ELEMENTS OF THE CRIME

As with any crime, certain elements must be proven to establish that the crime has been committed. The elements of the DUI Law are:

1. A person;
2. With a BAC (blood alcohol) or BrAC (breath alcohol) of .08 grams of alcohol or greater or who is under the influence of alcohol, drugs, or combination of alcohol and drugs;
3. Operate or be in actual physical control;
4. Vehicle;
5. Within the State of Utah.

With any one of the five elements missing, there is no crime of DUI. Extensive writings have covered these five elements. The most authoritative are found in Chemical Tests and The Law, The Evidence Handbook, and Vehicle Traffic Law, publications of The Traffic Institute-Northwestern University, Evanston, Illinois.

There is a misconception that it is legal to drive under .08% BAC and that under that level is free from prosecution for driving under the influence. The law does not allow for a legal limit. The law specifically states...

41-6a-502. Driving under the influence of alcohol, drugs, or a combination of both or with specified or unsafe blood alcohol concentration.

- (b) is under the influence of alcohol, any drug, or the combined influence of alcohol and any drug to a degree that renders the person incapable of safely operating a vehicle; or
- (c) has a blood or breath alcohol concentration of .08 grams or greater at the time of operation or actual physical control.

One of the earliest cases in which the term "under the influence" was defined is in the case State vs. Rogers 102 A 433 (1917), stating in part:

"The expression under the influence of alcohol; covers not only all the well known and easily recognized conditions and degrees of intoxication, but any abnormal mental or physical condition which is the result of indulging in any degree in intoxicating liquors, and which tends to deprive him (the driver) of that clearness of intellect and control of himself which he would otherwise possess."

While the enactment of the DUI Law in the State of Utah solved some problems, it also created some, which if left unsolved, will negate the effectiveness of the statute. The most serious of these problems and their effect are as follows:

1) The use of the chemical test as a crutch by the police under the DUI Law.

It is imperative that the police officer conducts a thorough investigation. All physical evidence that is present must be collected and noted. These are the facts upon which the officer must base his opinion and they will be asked to relate these facts when in court. If the officer is unable to relate those personally observed facts on

which he bases his opinion, the opinion will not be admissible. Corroborating physical evidence must be presented at the trial, in addition to the result of the chemical test.

2) The practice of the courts and prosecutors in setting an arbitrary level of blood alcohol below which no person will be prosecuted for driving under the influence of an intoxicant.

Although there are some courts and prosecutors in the State who will prosecute at blood or breath-alcohol levels below 0.08 grams, many are reluctant to do so. Setting an arbitrary blood level encourages the police officer to place primary importance on the level of blood/breath alcohol rather than the physical evidence. This practice also results in a failure of the prosecutor to view all the evidence before drawing a conclusion. Thus, it is possible that a person with little experience to the effects of alcohol, who is unable to keep his vehicle on the road, or who is unable to perform the coordination tests at a blood/breath alcohol level of 0.07 grams per milliliter of blood will not be prosecuted because his blood alcohol level is below 0.08 grams per milliliter of blood. It is the duty of the officer to uphold and enforce the law and when he detects an illegal act he is bound to gather all the evidence pertaining to the violation and submit it to the prosecutor for evaluation. Thus, the responsibility for reduced or amended charges will fall on those who have the prerogative. We should also remember presumptive levels were eliminated by the 1983 legislation.

The current 2005 Utah DUI statute reads as follows:

**NOTE: FOLLOWING ARE JUST PARTS OF THE CODES FOR
ADDITIONAL DETAILS ON ENHANCEMENTS (OTHER CLASS A &
3RD DEGREE FELONY SITUATIONS), PENALTIES, AND
PUNISHMENTS, CONSULT THE CODE BOOK.**

Section 41-6a-501 Definitions.

As used in this article, vehicle or motor vehicle, in addition to the definitions provided under Section **41-6a-102**, includes an off-highway vehicle as defined under Section **41-22-2** and a motorboat as defined in Section **73-18-2**.

Section 41-6a-502. Driving under the influence of alcohol, drugs, or a combination of both or with specified or unsafe blood alcohol concentration. Measurement of blood or breath alcohol Criminal punishment Arrest without warrant Penalties Suspension or revocation of license Penalties.

(1) A person may not operate or be in actual physical control of a vehicle within this state if the person:

(a) Has sufficient alcohol in his body that a subsequent chemical test shows

that the person has a blood or breath alcohol concentration of .08 grams or greater at the time of the test:

- (b) Is under the influence of alcohol, any drug, or the combined influence of alcohol and any drug to a degree that renders the person incapable of safely operating a vehicle: or
 - (c) Has a blood or breath alcohol concentration of .08 grams or greater at the time of operation or actual physical control.
- (2) Alcohol concentration in the blood shall be based upon grams of alcohol per **100 milliliters of blood**, and alcohol concentration in the breath shall be based upon grams of alcohol per **210 liters of breath**.
- (3) A violation of this section includes a violation under a local ordinance similar to this section adopted in compliance with Section **41-6a-510**.

41-6a-503.

(1) A person convicted the first or second time of a violation of Section 41-6a-502 is guilty of a:

- (a) class B misdemeanor; or
- (b) class A misdemeanor if the person:
 - i. has also inflicted bodily injury upon another as a proximate result of having operated the vehicle in a negligent manner;
 - ii. had a passenger under 16 years of age in the vehicle at the time of the offense; or
 - iii. was 21 years of age or older and had a passenger under 18 years of age in the vehicle at the time of the offense.

(2) A person convicted of a violation of Section **41-6a-502** is guilty of a third degree felony if:

- (a) the person has also inflicted serious bodily injury upon another as a proximate result of having operated the vehicle in a negligent manner;
- (b) the conviction under Section **41-6a-502** is within ten years of two or more prior convictions as defined in Subsection **41-6a-501(2)**; or
- (c) the conviction under Section **41-6a-502** is at any time after a conviction of:
 - i. automobile homicide under Section **76-5-207** that is committed after July 1, 2001;
 - ii. a felony violation of Section **41-6a-502** or a statute previously in effect in this state that would constitute a violation of Section **41-6a-502** that is committed after July 1, 2001; or
 - iii. any conviction described in Subsection (2)(c)(i) or (ii) which judgment of conviction is reduced under Section **76-3-402**.

41-6a-508. Arrest without a warrant for a driving under the influence violation.

A peace officer may, without a warrant, arrest a person for a violation of Section **41-**

6a-502 when the peace officer has probable cause to believe the violation has occurred, although not in the peace officer's presence, and if the peace officer has probable cause to believe that the violation was committed by the person

41-6a-515. Standards for chemical breath or oral fluids analysis -- Evidence.

(1) The commissioner of the department shall establish standards for the administration and interpretation of chemical analysis of a person's breath or oral fluids, including standards of training.

(2) In any action or proceeding in which it is material to prove that a person was operating or in actual physical control of a vehicle while under the influence of alcohol or any drug or operating with a blood or breath alcohol content statutorily prohibited, documents offered as memoranda or records of acts, conditions, or events to prove that the analysis was made and the instrument used was accurate, according to standards established in Subsection (1), are admissible if:

(a) the judge finds that they were made in the regular course of the investigation at or about the time of the act, condition, or event; and;

(b) the source of information from which made and the method and circumstances of their preparation indicate their trustworthiness.

(3) If the judge finds that the standards established under Subsection (1) and the conditions of Subsection (2) have been met, there is a presumption that the test results are valid and further foundation for introduction of the evidence is unnecessary.

METABOLITE

41-6a-517. Definitions Driving with any measurable controlled substance in the body Penalties Arrest without warrant.

(1) As used in this section:

(a) "Controlled substance" means any substance scheduled under Section 58-37-4.

(b) (d) "Prescription" has the same meaning as provided in Section 58-37-2

(2) In cases not amounting to a violation of Section **41-6a-502**, a person may not operate or be in actual physical control of a motor vehicle within this state if the person has any measurable controlled substance or metabolite of a controlled substance in the person's body.

(3) It is an affirmative defense to prosecution under this section that the controlled substance was involuntarily ingested by the accused or prescribed by a practitioner for use by the accused.

(4) A person convicted of a violation of Subsection (2) is guilty of a class B misdemeanor.

(5) A peace officer may, without a warrant, arrest a person for a violation of this section when the officer has probable cause to believe the violation has occurred,

although not in the officer's presence, and if the officer has probable cause to believe that the violation was committed by the person.

AUTOMOBILE HOMICIDE

76-5-207(2) (a) Criminal homicide is automobile homicide, a third degree felony, if the person operates a **motor** vehicle in a negligent manner causing the death of another and:

(i) Has sufficient alcohol in his body that a subsequent chemical test shows that the person has a blood or breath alcohol concentration of .08 grams or greater at the time of the test;

(ii) Is under the influence of alcohol, any drug, or the combined influence of alcohol and any drug to a degree that renders the person incapable of safely operating a vehicle; or

(iii) Has a blood or breath alcohol concentration of .08 grams or greater at the time of operation.

(3) (a) Criminal homicide is automobile homicide, a second degree felony, if the person operates a motor vehicle in a criminally negligent manner causing the death of another and:

(i) Has sufficient alcohol in his body that a subsequent chemical test shows that the person has a blood or breath alcohol concentration of .08 grams or greater at the time of the test;

(ii) Is under the influence of alcohol, any drug, or the combined influence of alcohol and any drug to a degree that renders the person incapable of safely operating a vehicle; or

(iii) Has a blood or breath alcohol concentration of .08 grams or greater at the time of operation.

IMPLIED CONSENT

With the continued increase of deaths on our nation's highways, the outcry became greater to create compulsive legislation to force an individual to give a chemical test for intoxication when stopped by a police officer.

Some lawmakers urged that before an individual could receive a driver's license, they enter into an agreement to take a chemical test when requested. If this type of law were drawn, what could be done with the unlicensed driver, or the person licensed in another state? These are but two of the many problems created by most types of compulsive legislation.

The State of New York in 1953 adopted a solution to the problem by enacting legislation creating the "Implied Consent Law". This law in effect says, **by the act of a person operating a motor vehicle within the State, the individual is deemed**

to have given the necessary consent to a chemical test. If a person is arrested for this offense and then withdraws the consent by refusing to give a test as requested by a police officer, the administrative process begins by which a motorist may have the driving privilege revoked because of the refusal.

Utah adopted the Implied Consent Law in 1957. The Law was revised by the 1969 Legislature applying the basic power of the law to both alcohol and drugs. With this revision, Utah law was probably one of the most comprehensive implied consent laws in the United States. The implied consent law was again revised in 1977 giving the officer the right to determine which test shall be given. Relevant sections of the law are as follows:

41-6a-520. Implied consent to chemical tests for alcohol or drug number of tests refusal warning, report hearing, revocation of license appeal person incapable of refusal results of test available who may give test evidence.

(1) (a) A person operating a motor vehicle in this state is considered to have given the person's consent to a chemical test or tests of the person's breath, blood, urine, or oral fluids for the purpose of determining whether the person was operating or in actual physical control of a motor vehicle while:

- i. having a blood or breath alcohol content statutorily prohibited under Section **41-6a-502**, **41-6a-530**, **53-3-231**, or **53-3-232**;
- ii. under the influence of alcohol, any drug, or combination of alcohol and any drug under Section **41-6a-502**; or
- iii. having any measurable controlled substance or metabolite of a controlled substance in the person's body in violation of Section **41-6a-517**.

(b) A test or tests authorized under this Subsection (1) must be administered at the direction of a peace officer having grounds to believe that person to have been operating or in actual physical control of a motor vehicle while in violation of any provision under Subsections (1)(a)(i) through (iii).

(c) i. The peace officer determines which of the tests are administered and how many of them are administered.

- ii. If a peace officer requests more than one test, refusal by a person to take one or more requested tests, even though the person does submit to any other requested test or tests, is a refusal under this section.

(d) i. A person who has been requested under this section to submit to a chemical test or tests of the person's breath, blood, or urine, or oral fluids may not select the test or tests to be administered.

- ii. The failure or inability of a peace officer to arrange for any specific chemical test is not a defense to taking a test requested by a peace officer, and it is not a defense in any criminal, civil, or administrative proceeding resulting from a person's refusal to submit to the requested test or tests.

(2) (a) A peace officer requesting a test or tests shall warn a person that refusal to

submit to the test or tests may result in revocation of the person's license to operate a motor vehicle and a five or ten-year prohibition of the person driving with any measurable or detectable amount of alcohol in the person's body depending on the person's prior driving history if the person:

- ii. has been placed under arrest;
 - iii. has then been requested by a peace officer to submit to any one or more of the chemical tests under Subsection (1); and
 - iv. refuses to submit to any chemical test requested.
- (b) i. Following the warning under Subsection (2)(a), if the person does not immediately request that the chemical test or tests as offered by a peace officer be administered, a peace officer shall, on behalf of the Driver License Division and within 24 hours of the arrest, give notice of the Driver License Division's intention to revoke the person's privilege or license to operate a motor vehicle.

OPEN CONTAINER OF ALCOHOL

41-6a-526. Drinking alcoholic beverage and open containers in motor vehicle prohibited -- Definitions -- Exceptions.

(2) A person may not drink any alcoholic beverage while operating a motor vehicle or while a passenger in a motor vehicle, whether the vehicle is moving, stopped, or parked on any highway.

(3) A person may not keep, carry, possess, transport, or allow another to keep, carry, possess, or transport in the passenger compartment of a motor vehicle, when the vehicle is on any highway, any container which contains any alcoholic beverage if the container has been opened, its seal broken, or the contents of the container partially consumed.

(4) Subsections (2) and (3) do not apply to a passenger:

- (a) in the living quarters of a motor home or camper;
- (b) who has carried an alcoholic beverage onto a limousine or chartered bus that is in compliance with Subsections **32A-12-213**(3)(b) and (c); or
- (c) in a motorboat or on the waters of this state as these terms are defined in Section **73-18-2**.

(5) Subsection (3) does not apply to passengers traveling in any licensed taxicab or bus.

VEHICLE IMPOUND

41-6a-527 Seizure and impoundment of vehicles by peace officers -- Impound requirements -- Removal of vehicle by owner.

(1) If a peace officer arrests or cites the operator of a vehicle for violating Section **41-6a-502**, **41-6a-517**, **41-6a-520**, **41-6a-530**, **53-3-231**, **53-3-232**, Subsection **41-6a-518**(10), or a local ordinance similar to Section **41-6a-502** which complies with

Subsection **41-6a-510**(1), the peace officer shall seize and impound the vehicle in accordance with Section **41-6a-1406**, except as provided under Subsection (2).

(2) If a registered owner of the vehicle, other than the operator, is present at the time of arrest, the peace officer may release the vehicle to that registered owner, but only if:

(a) The registered owner:

- i. Requests to remove the vehicle from the scene; and
- ii. Presents to the peace officer sufficient identification to prove ownership of the vehicle or motorboat;

(b) The registered owner identifies a driver with a valid operator's license who:

- i. Complies with all restrictions of his operator's license; and
- ii. Would not, in the judgment of the officer, be in violation of Section **41-6a-502**, **41-6a-517**, **41-6a-520**, **41-6a-530**, **53-3-231**, **53-3-232**, Subsection **41-6a-518**(10), or a local ordinance similar to Section 41-6a-502 which complies with Subsection **41-6a-510**(1) if permitted to operate the vehicle; and;

(c) The vehicle itself is legally operable.

(3) If necessary for transportation of a motorboat for impoundment under this section, the motorboat's trailer may be used to transport the motorboat.

UNLAWFUL POSSESSION / CONSUMPTION (NOT A DROP)

The Utah law dealing with the illegal consumption of alcohol by **drivers** under the age of 21 years was changed in **1996**. When the law was initially passed and in the ensuing years, the code was **41-6a-502**. In **1996**, the legislature took the statute out of **Section 41** of the traffic code section and placed it in the driver license act and renumbered the code to **53-3-231**.

53-3-231 Person under 21 may not operate a vehicle or motorboat with detectable alcohol in body -- Chemical test procedures -- Temporary license -- Hearing and decision -- Suspension of license or operating privilege -- Fees -- Judicial review -- Referral to local substance abuse authority or program.

- (2) (a) A person younger than 21 years of age may not operate or be in actual physical control of a vehicle or motorboat with any measurable blood, breath, or urine alcohol concentration in his body as shown by a chemical test.
- (3) (a) When a peace officer has reasonable grounds to believe that a person may be violating or has violated Subsection (2), the peace officer may, in connection with arresting the person for a violation of Section **32A-12-209**, request that the person submit to a chemical test or tests to be administered in compliance with the standards under **41-6a-520**.
- (b) The peace officer shall advise a person prior to the person's submission to a chemical test that a test result indicating a violation of Subsection (2)(a) will result in denial or suspension of the person's license to operate a motor vehicle or a refusal to issue a license.
- (c) If the person submits to a chemical test and the test results indicate a blood, breath, or urine alcohol content in violation of Subsection (2)(a), or if the officer makes a determination, based on reasonable grounds, that the person is otherwise in violation of Subsection (2)(a), the officer directing administration of the test or making the determination shall serve on the person, on behalf of the Driver License Division, immediate notice of the Driver License Division's intention to deny or suspend the person's license to operate a vehicle or refusal to issue a license under Subsection (2).
- (3) When a peace officer gives notice on behalf of the division, the peace officer shall:
 - (a) Take the Utah license certificate or permit, if any, of the operator;
 - (b) Issue a temporary license certificate effective for only 29 days if the driver had a valid operator license; and
 - (c) Supply to the operator, in a manner specified by the division, basic information regarding how to obtain a prompt hearing before the Driver License Division.
- (5) A citation issued by a peace officer may, if provided in a manner specified by the

division, also serve as the temporary license certificate under Subsection (4)(b).

(6) As a matter of procedure, a peace officer shall send to the division within ten calendar days after the day on which notice is provided:

- i. The person's driver license certificate, if any;
- ii. A copy of the citation issued for the offense;
- iii. A signed report on a form approved by the Driver License Division indicating the chemical test results, if any; and
- iv. Any other basis for the officer's determination that the person has violated Subsection (2).

(7) (a) (i) Upon request in a manner specified by the division, the Driver License Division shall grant to the person an opportunity to be heard within 29 days after the date of arrest under Section **32A-12-209**.

(ii) The request shall be made within ten calendar days of the day on which notice is provided.

(b) (i) Except as provided in Subsection (7)(b)(ii), a hearing, if held, shall be before the division in the county in which the arrest occurred.

(ii) The division may hold a hearing in some other county if the division and the person both agree.

(c) The hearing shall be documented and shall cover the issues of:

- (i) whether a peace officer had reasonable grounds to believe the person was operating a motor vehicle or motorboat in violation of Subsection (2)(a);
- (ii) whether the person refused to submit to the test; and
- (iii) the test results, if any.

(d) In connection with a hearing, the division or its authorized agent may administer oaths and may issue subpoenas for the attendance of witnesses and the production of relevant books and papers and records as defined in Section **46-4-102**.

UNLAWFUL POSSESSION/ CONSUMPTION

32A-12-209. Unlawful purchase, possession, or consumption by minors.

(1) Unless specifically authorized by this title, it is unlawful for any minor to:

- (a) purchase any alcoholic beverage or product;
- (b) attempt to purchase any alcoholic beverage or product;
- (c) solicit another person to purchase any alcoholic beverage or product;
- (d) possess any alcoholic beverage or product;
- (e) consume any alcoholic beverage or product; or
- (f) have measurable blood, breath, or urine alcohol concentration in the minor's body.

(2) It is unlawful for the purpose of purchasing or otherwise obtaining an alcoholic beverage or product for a minor for:

- (a) any minor to misrepresent the minor's age; or
- (b) any other person to misrepresent the age of a minor.

(3) It is unlawful for any person under the age of 21 years to possess or consume any

alcoholic beverage while riding in a limousine or chartered bus.

(4) When a person who is at least 13 years old, but younger than 18 years old, is found by the court to have violated this section, the provisions regarding suspension of the driver's license under Section **78-3a-506** apply to the violation.

(5) When the court has issued an order suspending a person's driving privileges for a violation of this section, the Driver License Division shall suspend the person's license under the provisions of Section **53-3-219**.

(6) When the Department of Public Safety receives the arrest or conviction record of a person for a driving offense committed while his license is suspended pursuant to this section, the department shall extend the suspension for an additional like period of time.

(7) This section does not apply to a minor's consumption of an alcoholic beverage or product in accordance with this title:

- (a) for medicinal purposes if the alcoholic beverage or product is furnished by:
 - i. the parent or guardian of the minor; or
 - ii. the minor's physician or dentist; or
- (b) as part of a church's or religious organization's religious services.

CONDITIONAL LICENSE (Adult Anot a drop@)

53-3-232. Conditional license -- May not operate vehicle with alcohol in body penalty.

(1) As used in this section, "qualifying conviction" means:

(a) a conviction of a violation of Section **41-6a-502**, Section **41-6a-517**, a local ordinance which complies with the requirements of Subsection **41-6a-510(1)**, Section **76-5-207**, or of alcohol-related reckless driving as described under Subsection **41-6a-512(1)**;

(b) a revocation under Section **41-6a-521** if the revocation is not based on the same arrest as a conviction under Subsection (1)(a); or

(c) a violation of Subsection (3).

(2) (a) Until June 30, 2005, the division may only issue, reinstate, or renew a driver license in the form of a no alcohol conditional license to a person who has a qualifying conviction for a period of:

(i) two years after issuance of a Utah driver license or permit following a first qualifying conviction for an offense, the arrest for which occurred within the previous ten years; and

(ii) ten years after issuance of a Utah driver license or permit following a second or subsequent qualifying conviction for an offense, the arrest for which occurred within the previous ten years.

(b) Beginning on July 1, 2005, the division may not issue, reinstate, or renew a driver license in the form of a no alcohol conditional license.

(3) A no alcohol conditional license shall be issued on the condition that the person may not operate or be in actual physical control of a vehicle or motorboat in this state with any alcohol in the person's body.

(4) It is a class B misdemeanor for a person who has been issued a no alcohol

conditional license to operate or be in actual physical control of a vehicle or motorboat in this state in violation of Subsection (3).

As of July 1, 2005 Conditional License Violations will be referred to as Alcohol Restricted Drivers.

ALCOHOL RESTRICTED DRIVER

41-6a-529. Definitions -- Alcohol restricted drivers.

(1) As used in this section and section **41-6a-530**, "alcohol restricted driver" means a person who:

(a) within the last two years:

i. has been convicted of:

- A. a misdemeanor violation of Section **41-6a-502**;
- B. alcohol, any drug, or a combination of both-related reckless driving under Section **41-6a-512**;
- C. local ordinances similar to Section **41-6a-502** or alcohol, any drug, or a combination of both-related reckless driving adopted in compliance with Section **41-6a-510**;
- D. a violation described in Subsections (1)(a)(i)(A) through (C), which judgment of conviction is reduced under Section **76-3-402**; or
- E. statutes or ordinances previously in effect in this state or in effect in any other state, the United States, or any district, possession, or territory of the United States which would constitute a violation of Section **41-6a-502** or alcohol, any drug, or a combination of both-related reckless driving if committed in this state, including punishments administered under 10 U.S.C. Sec. 815; or

ii. has had the person's driving privilege suspended under Section **53-3-223** based on an arrest which occurred on or after July 1, 2005;

(b) within the last five years:

i. has had the person's driving privilege revoked for refusal to submit to a chemical test under Section **41-6a-520**, which refusal occurred on or after July 1, 2005; or

ii. A. has been convicted of an offense described in Subsection (1)(a)(i); and

B. at the time of operation or actual physical control of a vehicle the person:

II. is 21 years of age or older;

III. has a passenger under 16 years of age in the vehicle;

(c) Within the last ten years:

i. has been convicted of an offense described in Subsection (1)(a)(i) which conviction was within ten years of a prior conviction for an offense described in Subsection (1)(a)(i); or

- ii. has had the person's driving privilege revoked for refusal to submit to a chemical test and the refusal is within ten years after:
 - A. a prior refusal to submit to a chemical test under Section **41-6a-520**; or
 - B. a prior conviction for an offense described in Subsection (1)(a)(i) which is not based on the same arrest as the refusal; or
- (d) at any time has been convicted of:
 - i. automobile homicide under Section **76-5-207** for an offense that occurred on or after July 1, 2005; or
 - ii. a felony violation of Section **41-6a-502** for an offense that occurred on or after July 1, 2005.
- 2. For purposes of this section and Section **41-6a-530**, a plea of guilty or no contest to a violation described in Subsection (1)(a)(i) which plea is held in abeyance under Title 77, Chapter 2a, Pleas in Abeyance, is the equivalent of a conviction, even if the charge has been subsequently reduced or dismissed in accordance with the plea in abeyance agreement.

INTOXICATION

76-9-701. Intoxication -- Release of arrested person or placement in detoxification center.

- (1) A person is guilty of intoxication if he is under the influence of alcohol, a controlled substance, or any substance having the property of releasing toxic vapors, to a degree that the person may endanger himself or another, in a public place or in a private place where he unreasonably disturbs other persons.
- (2) A peace officer or a magistrate may release from custody an individual arrested under this section if he believes imprisonment is unnecessary for the protection of the individual or another; or a peace officer may take the arrested person to a detoxification center or other special facility as an alternative to incarceration or release from custody.
- (3) When a person who is at least 13 years old, but younger than 18 years old, is found by the court to have violated this section, the provisions regarding suspension of the driver's license under Section **78-3a-506** apply to the violation.
- (4) When the court has issued an order suspending a person's driving privileges for a violation of this section, the person's driver license shall be suspended under Section **53-3-219**.
- (5) An offense under this section is a class C misdemeanor.

BOATING UNDER THE INFLUENCE

Boating under the influence falls under the DUI statute, **41-6a-502**.

POSSESSION OF WEAPONS UNDER THE INFLUENCE

76-10-528. Carrying a dangerous weapon while under influence of alcohol or drugs unlawful.

(1) Any person who carries a dangerous weapon while under the influence of alcohol or a controlled substance as defined in Section **58-37-2** is guilty of a class B misdemeanor.

(2) It is not a defense to prosecution under this section that the person:

- (a) Is licensed in the pursuit of wildlife of any kind; or
- (b) Has a valid permit to carry a concealed firearm.

STATE V. CHARLES E. BAKER (Washington appellate court)

On Saturday evening, September 13, 1958, the opening night of the Western Washington Fair in Puyallup, Washington, Ernest E. Eichhorn, an officer of the Washington state patrol, was directing traffic at the intersection of Seventh Avenue southeast and Meridian Avenue, which is located approximately one block north of the fair grounds. A single mercury vapor light lighted the intersection, and officer Eichhorn was wearing a light blue state patrol jacket with white threading in the material, which would reflect light.

Baker was driving his automobile south along Meridian Avenue on his way to the fair grounds to pick up his wife who was employed at the fair. As he approached the intersection, officer Eichhorn had just stopped the east-west traffic, and the north-south traffic had commenced to move. There is a conflict in the evidence as to the precise manner in which the accident occurred. However, as Baker passed through the intersection, his car struck officer Eichhorn, whose body was flung through the air. It came to rest in front of a Ford automobile that was traveling north on Meridian Avenue and stopped with its front wheel touching officer Eichhorn's body. Although it had been raining shortly prior to the accident, the evidence was conflicting as to whether or not it was raining at the time of the accident. The accident occurred a few minutes before eleven o'clock p.m.

Baker admitted that he had consumed one stubby and four eight-ounce glasses of beer between six o'clock p.m. and the time of the accident. He denied that he was then under the influence of, or affected by, intoxicating liquor.

Shortly after the accident, Officer Alfred F. Stewart of the state patrol took Baker in a patrol car to the police station of the neighboring city of Sumner, Washington. Officer Richard E. Mefferd of the Sumner police department put Baker through various physical observation tests for intoxication, and also administered a breathalyzer test, which appellant took of his own volition. Neither officer Stewart nor officer Mefferd was able to form an opinion as to appellant's sobriety from their physical observations of him. However, the result of the breathalyzer test indicated that Baker had .185% alcohol by weight in his blood (185 milligrams in 100 cc. of blood). Baker entered a plea of not guilty.

The case was tried to the court sitting with a jury. At the close of the state's case, Baker moved to dismiss the case on the ground that the state had failed to produce sufficient

legally admissible evidence to support a conviction. The motion was denied. Baker renewed his motion at the close of all the evidence and it was again denied. The case was then submitted to the jury, which returned a verdict of guilty. Baker's motion in arrest of judgment or, in the alternative, for a new trial was denied, and judgment and sentence was entered upon the verdict. This appeal followed. It should be made clear at the outset that appellant does not contend that results of breathalyzer tests, in general, are not admissible in evidence. He does contend that four basic requirements must be shown by the state before the results of such tests may be admitted in evidence, to wit:

- (1) That the machine (instrument) was properly checked and in proper working order at the time of conducting the test;**
- (2) That the chemicals employed were of the correct kind and compounded in the proper proportions;**
- (3) That the subject had nothing in his mouth at the time of the test and that he had taken no food or drink within fifteen minutes prior to taking the test;**
- (4) That the test be given by a qualified operator and in the proper manner.**

The expert testimony introduced by the state in this case pertaining to the breathalyzer and its operation shows that unless the above four requirements are satisfied, the result of the test is wholly unreliable. We therefore hold that before the result of a breathalyzer test can be admitted into evidence, the state must produce prima facie evidence that each of the four requirements listed above have been complied with.

SCHMERBER v. CALIFORNIA 1966 U.S. SUPREME COURT

The taking of blood under protest without consent.

Facts- -Bar Hopping

Accident (Schmerber was hospitalized following a crash involving an automobile that he had apparently been driving. A police officer smelled liquor on Schmerber's breath and noticed other symptoms of drunkenness at the accident scene and at the hospital, placed him under arrest, and informed him that he was entitled to counsel, that he could remain silent, and that anything he said would be used against him).

Refused blood test (At the officer's direction a physician took a blood sample from Schmerber despite his refusal on advice of counsel to consent thereto. A report of the chemical analysis of the blood, which indicated intoxication, was admitted in evidence over objection at Schmerber's trial for driving while intoxicated. Schmerber was convicted and the conviction was affirmed by the appellate court which rejected his claims of denial of due process, of his privilege against self-incrimination, of his right to

counsel, and of his right not to be subjected to unreasonable searches and seizures).

Constitutional issues argued and court rulings-

1. Defendant argued that blood test amounted to self-incrimination. Court ruled: NO, that applies to oral evidence, not physical evidence.
2. Defendant argued that blood test was a violation of Search and Seizure. Court ruled: NO, the search was valid. There was probable cause, a lawful arrest, and the evidence (alcohol in the body) was short lived.
3. Defendant argued Due Process was violated. Court ruled: NO, a physician in a hospital took evidence in the proper manner.
4. Argued that defendant was denied right to counsel prior to the test. Court ruled: No, the attorney's presence (by statute) is not required for a chemical test.

LESSON 9

THE DUI SUMMONS & CITATION AND REPORT FORM

As the defenses of DUI cases grew more vigorous in the 1940's the officer on the beat also grew more aware of the difficulties in obtaining convictions. As a result, several forms were created to assist the officer in recording the outward signs of intoxication. The DUI Summons and Citation and the DUI Report Form were produced by prosecutors and approved by the State of Utah as the standard forms to be used throughout the state.

One of the most overlooked areas of evidence in D.U.I. cases is the spontaneous statement given by the suspected driver. While there is a necessity for the Miranda warning in an in-custody interrogation, nothing prohibits the use of volunteered or spontaneous statements even though the person is arrested and in custody.

The D.U.I. Report Form is attached to the D.U.I. Summons and Citation. This form is actually two separate reports for the same incident. The first part is a citation with two court copies, a B.C.I. copy, the Driver's License Division copy, a defendant copy and an issuing agency copy. The second part is the D.U.I. Report Form that is the report itself.

It is very important that the citation and all other information is completed and turned in as soon as possible. Any information not recorded and turned in may present problems in a Drivers License hearing and court.

D.U.I. SUMMONS AND CITATION

All spaces on the D.U.I. Summons and Citation must be filled in neatly and accurately. **All** information on the citation must agree with the information on the D.U.I. Report Form.

The name used on the citation should be written as it appears on the individual's driver license. Information that is required, but may be up to the discretion of the prosecuting attorney to the way he would prefer, include:

Time: Last actual physical control or time individual placed under arrest.

Location: When first observed or place of actual arrest.

Violations: Only DUI or Not a Drop violations and any violations that will be issued with this incident.

The bottom half of the D.U.I. Summons and Citation contains a notice to the driver of the intent of Driver License Division to, “deny, suspend, revoke or disqualify@ his/her driving privilege.

There are four boxes with a listing of the violations the driver is advised of violating and what the penalties are and could be imposed if convicted. The arresting officer should check the box that applies to the driver that has been arrested. The driver is also notified of a RIGHT TO HEARING and how to request the hearing.

At the bottom of the D.U.I. Summons and Citation is an area for the officer to complete that pertains to the status of the drivers license. The arresting officer should complete a computer check to determine the status of the drivers license. If the license is issued from the State of Utah and the drivers license status is valid, the VALID box should be marked and a temporary license, good for up to 30 days from the date of arrest, should be issued. If the license is from any other state, or the drivers license status is not valid, the box stating NOT VALID should be marked. Indicate the type of license, including class, restrictions, and endorsements in the space provided. Note the reason for not issuing a temporary license.

D.U.I. REPORT FORM

The D.U.I. Report Form is divided into thirteen categories. Note that all spaces should be filled in as much as possible to avoid any appearance that information was skipped, overlooked or incomplete. Special care should be taken to ensure that the information on the Summons and Citation agree with the information on the D.U.I. Report Form.

I. Case Identification

Each case must be identified individually to prevent confusion and to record information relevant to the arrest.

II. Vehicle

Information regarding the vehicle driven by the arrested subject should be recorded in this section, again making sure the information in this section agrees with the information that appears on the citation. Be sure to record where the vehicle was taken and by which towing service. If the registered owner of the vehicle is the one being arrested, or is not physically capable of driving the vehicle from the scene, or is not at the scene of the traffic stop, the vehicle **must** be impounded, as per Utah Code 41-6a-527.

III. Witnesses

List any witnesses that may have seen all or part of the incident concerning the D.U.I. or the arrest. Also, list passengers that are in the vehicle. It may also be helpful to note their location in the vehicle as it may link evidence later found in the vehicle to the suspect or a passenger. As much information as possible about witnesses and passengers is helpful in identifying and locating them at a later time.

IV. Actual Physical Control

List the facts that establish the subject's actual physical control. Be specific on all information. Attach additional pages to the D.U.I. Report Form, if necessary.

V. Driving Pattern

A good description of the driving pattern is important in establishing a mental picture for the court or jury. The driving pattern illustrates the subject's ability or inability to operate a vehicle safely. Be specific on all information. Attach additional pages to the D.U.I. Report Form, if needed.

VI. Pre-Arrest Statements Of Subject

This section may be valuable to the police officer especially if the subject chooses not to answer questions after being advised as per Miranda. List here statements made before the arrest that are related to the offense of D.U.I.

VII. Physical Characteristics

Information should be recorded in this section relating to odor of alcohol, manner of speech, balance, illness, injury, or any other physical characteristics, such as; bloodshot eyes, flushed face, etc. An accurate description should be made as to other unusual characteristics, clothing, handicaps, etc.

VIII. Field Sobriety Tests

A standardized set of tests has been developed, incorporating Horizontal Gaze Nystagmus, 9 Step Walk and Turn, and One Leg Stand. Whenever possible, the officer should administer these tests in the prescribed order and manner. Other tests may be given in addition to, or instead of, the standardized tests, as circumstances dictate.

The results of any field sobriety tests should be written in the five subsections. **Be very specific** as to how the individual performed the tests and the results. The officer should make field notes close in time to when the field sobriety tests were administered. (To insure that all officers administer the Standardized Field Sobriety Tests uniformly, every officer should attend the two-day school on field sobriety tests in order to become experienced and proficient in the use of the Standardized Field Sobriety Tests.)

IX. Searches

List the times, place, and location of evidence found in the vehicle or on the subject. The officer finding the evidence should also be noted.

X. Chemical Tests

In this section the subject is asked to submit to a chemical test. The officer chooses the type of test, or tests, to be given (Blood-Breath-Urine). Record all pertinent information. Remember to record the time on your report when each admonition was read to the subject

The officer should address the individual as Mr., or Ms._____, (fill in the name) and read directly from the D.U.I. Report Form, asking the individual if he or she understands they are under arrest for either Driving while under the influence of alcohol and/or drugs or An alcohol offense under 21 years of age in violation of 32A-12-209 UCA and check the corresponding box.

The officer should write down the individual's response exactly as stated and request the individual submit to a chemical test or tests (Blood, Breath, Urine, or Oral Fluids).

The officer must give the subject the first admonition before administering the chemical test. The subject's response should be written exactly as stated. If, after the first admonition, the individual agrees to submit to a chemical test the other admonitions do not need to be read. Whatever admonitions are read to the individual, the officer should check the corresponding box and it is recommended that the time be noted next to the box.

If the subject refuses to submit to a chemical test, the second admonition must be given. If, after the second admonition is read, the individuals do not request, on their own, to take the chemical test, **DO NOT ASK THEM AGAIN** to submit to a chemical test. A recent Utah Supreme Court ruling found that an officer was badgering and coerced an individual to submit to a chemical test, the subsequent test results were suppressed. If the second admonition was given, mark the corresponding box, with the time and any responses the individual gave, exactly as stated.

If the subject claims the right to remain silent, or the right to counsel, the third admonition must be given. If the third admonition is given, mark the corresponding box. If the individual does not claim the right to remain silent or the right to counsel, the third admonition does not need to be given.

XI. INTERVIEW

The Miranda Rights must be given to the subject with notation of the time they were given. It is important that all blanks be completed in this section. If the subject invokes the right to remain silent, the time should be noted and no further questions asked, however, voluntary statements can be used and should be recorded.

The interview can be very important in obtaining the necessary information about the activities of the driver prior to the D.U.I. arrest, accident or actual physical control. This becomes essential information if extrapolation of alcohol content consumed by the driver is necessary. If the individual agrees to an interview, obtain as much information as possible, being very precise in recording the information given.

XII. Other Occurrences or Facts

Any other information may be recorded here.

Additional pages may be attached if necessary. This is a good place to make note of the weather and road conditions, etc.

XIII. Attached Documents

Check or list any documents or supplemental information that will accompany this packet including:

1. Copy of citation/temporary license;
 2. Subject's Utah driver's license or driver's permit (you may not seize the driver's license from another state);
 3. Traffic accident report (only if an accident occurred);
- Photocopy of Intoxilizer checklist and results;
5. Other documents (if a breath test was administered, a copy of the test record and intoxilyzer checklist **MUST** accompany the D.U.I. citation and Report Form);

XIV. Date and Time Report Was Completed

Check the box verifying that the subject was served the citation and verbally informed of his/her right to a hearing before the Drivers License Division. In some instances some situations arise which may make it impossible to serve the subject personally. If this is the case inform the personnel in charge to give notice to the subject. Record the individuals name in the spaces provided. Record the date and time the report was completed and sign the report. The Drivers License copy of the D.U.I. Summons and Citation as well as the original DUI Report Form must be sent to Driver License Division within ten days of the arrest of the subject.