

No. 83-54

IN THE SUPREME COURT OF THE STATE OF MONTANA

1985

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DONNA L. BARTEL, Guardian and  
Conservator of BRUCE W. BARTEL,  
an incapacitated person,

Plaintiff and Appellant,

-vs-

STATE OF MONTANA,

Defendant and Respondent.

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APPEAL FROM: District Court of the First Judicial District,  
In and for the County of Lewis & Clark,  
The Honorable Gordon Bennett, Judge presiding.

COUNSEL OF RECORD:

For Appellant:

Michael J. McKeon argued, Anaconda, Montana  
Edward K. Duckworth argued, Ronan, Montana

For Respondent:

Roy Andes argued, Agency Legal Services Bureau,  
Helena, Montana

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Submitted: May 7, 1985

Decided: August 27, 1985

Filed: AUG 27 1985

*Ethel M. Harrison*

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Clerk

Mr. Justice Fred J. Weber delivered the opinion of the Court.

Plaintiff Donna L. Bartel, as guardian and conservator of Bruce W. Bartel, an incapacitated person, brought this negligence action against the State of Montana. After a bench trial on the issue of liability, the Lewis and Clark County District Court entered judgment in favor of the defendant State of Montana. Plaintiff appealed. By opinion dated January 2, 1985, this Court affirmed the judgment of the District Court. Two of the justices who participated in the original case retired from the Court. Plaintiff petitioned for rehearing. A rehearing was granted. We affirm the judgment of the District Court. We withdraw the original opinion dated January 2, 1985, and substitute this opinion.

The issues are:

1. Did the District Court err in admitting into evidence without adequate foundation the results of a blood-alcohol test?

2. Are the District Court's findings of fact 6 through 8 supported by substantial credible evidence?

Bruce Bartel was severely injured in a motorcycle accident which occurred about 1:00 a.m. on May 28, 1980 at a highway junction on the north end of St. Ignatius, Montana. On the date of the accident, Bartel was 24 years old, weighed 318 pounds, was 6 feet, 4 inches tall and was not physically or mentally impaired.

Bartel was a truck driver living in Ronan, Montana, approximately 14 miles north of St. Ignatius. On the date of the accident, Bartel had lived in Ronan for about 6 years and had done at least a normal amount of occupational and recreational traveling in the Ronan area by motorcycle and four-wheel drive vehicle. Beginning in July 1979 and continuing to the date of the accident, Bartel had driven by St. Ignatius about once a day while driving a logging truck

between Ronan and Thompson Falls. Bartel had also visited St. Ignatius at least twice during this period of time.

On the day of the accident, Bartel devoted much of his time preparing for a trucking trip scheduled to begin the next day. He ate breakfast at a Ronan restaurant and later ate lunch at a cafe in Pablo. Between 3:00 and 4:00 p.m., Bartel and a friend stopped at Willard's Bar in Ronan where Bartel drank two beers. Sometime between 6:00 and 7:00 p.m., Bartel ate dinner at a local drive-in. Shortly after 7:00 p.m., Bartel and two friends purchased a six-pack of beer and drove around town, during which time Bartel drank one beer. Around 9:00 p.m., Bartel met two other friends, George Mitchell and Gerald Cooper, at another Ronan bar, where Bartel drank at least two drinks consisting of scotch whiskey and water.

Shortly after this meeting, Bartel traded his pickup truck for Mitchell's motorcycle. For the rest of the evening, Bartel drove Mitchell's motorcycle, a 750 cc Yamaha, and Mitchell drove Bartel's pickup. Cooper was riding his own motorcycle.

After this meeting and exchange of vehicles and throughout the rest of the evening until 1:00 a.m., the trio visited various bars between Ronan and St. Ignatius. Numerous witnesses testified at trial regarding how many drinks Bartel had at each bar and whether and to what degree he became intoxicated. Bartel argues that the testimony establishes he had no more than 9 drinks of scotch and water between 9:00 p.m. and 1:00 a.m. The State contends the evidence establishes that Bartel had about 15 drinks between 9:00 p.m. and 1:00 a.m. and 18 drinks total for the day.

The group eventually headed south to St. Ignatius. They approached St. Ignatius from the north on U.S. Highway 93 (New Highway 93) but drove past the north entrance to St.

Ignatius (Old Highway 93) and continued south on New Highway 93 for approximately 3/4 mile to the south entrance to St. Ignatius. After playing pool and drinking in a St. Ignatius bar, Cooper and Bartel decided to return to Ronan because Bartel intended to depart on his trucking trip early the next morning.

Bartel and Cooper left St. Ignatius on the motorcycles, with Cooper in the lead and Bartel some distance behind. The two drove north on the main street of St. Ignatius, which is known as "Old Highway 93." Old Highway 93 proceeds north and intersects at an acute angle with New Highway 93 on the north edge of St. Ignatius. New Highway 93 approaches St. Ignatius from the west and then skirts St. Ignatius on the northwest in a sweeping curve to the north. Bartel's accident occurred at the intersection of Old Highway 93 and New Highway 93. A diagram of the intersection is attached to this opinion as Appendix A.

The intersection is designed to channel northbound Old Highway 93 traffic to the left immediately after the first large traffic island on the left side of the roadway. Traffic then stops at a stop sign immediately before turning right or left to travel north toward Ronan or south toward Missoula. Rather than following this channel to the left and heeding the stop sign before turning onto New Highway 93, Bartel drove straight north along the east side of the second traffic island, apparently attempting to proceed straight onto New Highway 93.

The northern tip of the second traffic island protrudes to the east into what would otherwise be a straight line of pavement from Old Highway 93 onto New Highway 93. The protrusion at the northern tip of the second traffic island apparently was designed to channel northbound Old Highway 93 traffic into a right turn onto Airport Road, which enters at

that point from the east, and to prevent traffic from proceeding straight directly onto New Highway 93. As Bartel drove through the intersection, he struck the northern tip of the traffic island with the motorcycle, lost control and came to rest about 50 to 60 feet north in the barrow pit on the right side of the highway.

Bartel was taken immediately to the St. Ignatius hospital, where personnel quickly determined that the seriousness of his injuries required treatment in Missoula. The St. Ignatius Hospital nurse who admitted Bartel made the notation "intox." on the admission form, along with noting other symptoms. Bartel was transferred by ambulance to St. Patrick's Hospital in Missoula and arrived at the emergency room there at approximately 3:30 a.m. Blood specimens were drawn and an IV was started. The treating neurologist examined Bartel and concluded, among other things, that Bartel was in a state of "alcoholic intoxication." A blood-alcohol test, performed on Bartel solely for medical purposes, indicated a blood-alcohol level of .171 percent. Based upon the .171 percent test result, expert witnesses testified at trial that Bartel's blood-alcohol level was between .103 and .213 percent at the time of the accident.

The complaint sought damages for personal injuries resulting from the motorcycle accident allegedly caused by the State's negligence in design and maintenance of the intersection and surrounding area. After extensive discovery, the case was tried before the Lewis and Clark County District Court, sitting without a jury. Trial was on the issue of liability only.

On January 9, 1983 the court entered findings of fact and conclusions of law. On January 18, 1983 the court entered judgement in favor of the defendant. The court's findings of fact included the following:

"6. As a result of his casual traveling in and general knowledge of the area, of his regular trips by and in close proximity to the intersection at which the accident occurred and of his visits to St. Ignatius, he was thoroughly familiar with the intersection in question and how traffic moved from St. Ignatius through that intersection to Highway 93 en route north to Ronan.

"7. On May 27, 1980, he put in an ordinary day's work until four p.m., at which time and before five p.m. he had two beers. Between eight and nine p.m., after eating his supper, he drank another can of beer. Between nine p.m. on the 27th and the time of the accident at one a.m. on the 28th he drank not less than nine and quite probably twelve to fifteen drinks containing undetermined amounts of scotch whiskey.

"8. At the time of the accident his blood stream was carrying between .103 and .213 percentage alcohol, which seriously impaired his sensory and mental functions, including sight, perception, reflexion, reaction and ratiocination."

Bartel challenges these three findings of fact.

In addition, the district court found that the night of the accident was dark but clear, the roadway was dry and clear, and no other traffic was involved in the accident. The court found that the headlight on the motorcycle was functioning normally and that all traffic signs could be discerned clearly with the headlight. The court found that Bartel, at a speed of 25 to 30 m.p.h. and without braking or decelerating, passed across the road's yellow dividing line and the left lane, collided with the traffic separation island toward its north end, lost control of his motorcycle and landed with it in a ditch on the right side of the road. The court found that under the light and weather conditions existing at the time of the accident, an ordinarily observant motor vehicle operator traveling in Bartel's direction could have seen from a distance of not less than 350 feet the end of the traffic island which Bartel hit and could have seen other indications of the proper route through the intersection. The court found that if Bartel had been driving in a reasonably careful and prudent manner and not

under the influence of alcohol, he could have easily avoided the collision with the traffic island and that Bartel was not in any way "trapped" by highway design, signing or maintenance.

Although the court found that the design, construction, signing and maintenance of the intersection was "demonstrably deficient in numerous respects and did not comport with national standards or even the State's own standards," these deficiencies were not found to be a cause of the accident. The court noted that no other accidents at this intersection had been reported since 1969, when the traffic island was installed.

The court concluded that Bartel was negligent in violating several traffic safety statutes, including driving while under the influence of alcohol. The court also concluded that Bartel was negligent in failing to see a hazard which a reasonably prudent person would see under the circumstances or, having seen it, ignoring it or failing to react to it in a reasonable and prudent manner. The court concluded that Bartel's negligence was the sole proximate cause of the accident. The court also concluded that any negligence of the State was not in any degree a proximate cause of the accident. Bartel appeals.

#### I

Did the district court err in admitting into evidence without adequate foundation the results of a blood-alcohol test?

Bartel contends that evidence of blood-alcohol test results was inadmissible because the State failed to establish the required foundation for its admission, as required by *McAlpine v. Midland Electric Company* (Mont. 1981), 634 P.2d 1166, 38 St.Rep. 1577. Bartel argues that although less stringent foundational safeguards are required

for admissibility of blood test results in civil cases than in criminal cases, McAlpine nonetheless requires that test procedures accord with "good practice in the field" to assure reliable results. Bartel alleges numerous inadequacies in the blood test procedure which he contends are deviations from good medical practice. He alleges these deviations render the test results in this case unreliable. Bartel contends there is no evidence other than the blood test results that he was intoxicated or impaired in his ability to drive. Because the State's defense depended upon showing that Bartel was intoxicated, Bartel argues that the erroneous admission of Exhibit X, the lab report containing the blood test results, was extremely prejudicial and constitutes reversible error.

A review of the detailed foundation testimony is appropriate here.

Three hospital employees testified at trial regarding Bartel's blood test and routine blood test procedure. Barbara Westphal-Marcus, an R.N. who participated in Bartel's emergency room treatment, charted the treatment Bartel received. The chart showed that an IV was started at 3:30 a.m. and that the drug mannitol was administered at 3:35 a.m., although the chart did not show specifically when blood was drawn. However, Westphal-Marcus testified that as a matter of routine practice, blood is drawn for testing when an IV is started. She described routine procedure for starting an IV and drawing blood for alcohol testing: the patient's arm is prepped with betadine, a non-alcoholic solution; the needle and catheter are inserted; the needle is then removed from the catheter; before the blood-drawing syringe is inserted into the catheter, blood is spilled from the catheter; the syringe is inserted and 10 cc's of blood are drawn; the blood is put immediately into two tubes,



marked with the patient's name and ER chart number, and handed to the lab technician.

Westphal-Marcus testified she was present when Bartel's blood was drawn. She stated that based on routine practice, Bartel's blood was drawn at 3:30 a.m. when the IV was started. Responding to questions from the court, she indicated that nothing unusual had been done in Bartel's case. While betadine is usually used for prepping where alcohol testing is anticipated, Westphal-Marcus could not state with certainty that isopropyl alcohol was not used on this occasion. However, she stated that the blood spill which occurs before the syringe is inserted and blood is drawn would remove any taint caused by use of an isopropyl alcohol prepping solution. She noted that in Bartel's case a large catheter was used and a lot of blood was spilled. She concluded that good medical practice was used in drawing Bartel's blood and that the test results were reliable.

Leilani Heuer is the lab technician who tested Bartel's blood. She recognized and identified Exhibit X as an accurate copy of the lab report she had prepared from the original test printout and signed the night of Bartel's accident. Heuer described for the court the routine testing procedure employed. she stated that the testing machine is calibrated before the first test of every night as a matter of routine practice. She produced at trial the record of calibration for the day of Bartel's blood test. She stated that quality control testing is done every day, but records of that testing are kept for only one year. Heuer testified that isopropyl alcohol would interfere with test results only if the patient had ingested it, and that in her experience negative test results had occurred even though isopropyl alcohol had been used to prepare the patient's skin for the blood drawing. Heuer stated that original machine printouts

for specific tests are not kept, but that if the machine printout had indicated any error, she would have repeated the test until receiving error-free results.

Chief Lab Technician Opal Spradlin's deposition was stipulated into evidence in lieu of testimony. She stated that the drawing of blood for alcohol testing is usually done without use of isopropyl alcohol as a cleansing agent. She noted that all hospital personnel who could have drawn Bartel's blood were professionally competent. Spradlin concluded that test procedures accorded with good medical practice to assure reliable medical results.

James D. Hutchinson, a clinical toxicologist experienced in blood-alcohol testing, listened to Heuer's testimony and testified the hospital's testing methods are accurate. Dr. Kenneth H. Mueller, a forensic pathologist, testified that use of isopropyl alcohol would affect test results only if something distinctly abnormal or incompetent was done in drawing the blood. If normal prepping procedure was followed using isopropyl alcohol, the isopropyl would result in no measurable difference. He testified that a test on blood serum as opposed to whole blood would yield a maximum difference of only 2-3 percent. Mueller stated that if there had been any significant possibility of error in Bartel's blood test, it would have been called to someone's attention.

In *McAlpine v. Midland Electric Company* (Mont. 1981), 634 P.2d 1166, 38 St.Rep. 1577, the appellant raised several arguments regarding foundation for admission of blood-alcohol test results which are similar to those raised by Bartel. There, appellant argued that the proponent of the evidence had failed to show that post-mortem blood clotting did not result in a higher blood-alcohol reading; failed to show that the procuring and testing of the samples followed the procedures set out in the Administrative Rules of Montana;

failed to show the blood tested came from the victims' bodies; and failed to produce the gas chromatograph records which recorded the test results. 634 P.2d at 1170, 38 St.Rep. at 1582.

In McAlpine, this Court held that procedures required by administrative rule where results are to be used in a criminal prosecution are not required for admissibility of test results in a civil trial. In so holding, we quoted from Bach v. Penn Central Transportation Company (6th Cir. 1974), 502 F.2d 1117, which stated that while test procedures for civil trial use need not comply with criminal case statutory procedures, "they must accord with good practice in the field to assure reliable results." McAlpine, 634 P.2d at 1171, 38 St.Rep. at 1583, quoting Bach, 502 F.2d at 1121. We concluded that testimony in that case "established that the procedures employed followed good practice in the field." 634 P.2d at 1171, 38 St.Rep. at 1583-84. We adhere to that test today.

Rule 406(b), M.R.Evid. provides that "[e]vidence of habit or of routine practice, whether corroborated or not, and regardless of the presence of eyewitnesses, is relevant to prove that conduct on a particular occasion was in conformity with the habit or routine practice." "Routine practice" is defined as "a regular course of conduct of a group of persons or an organization." Rule 406(a), M.R.Evid.

Hospital personnel and medical experts testified at length of the routine medical practices employed at the hospital in drawing and testing blood for alcohol content. These witnesses also testified at length as to whether those practices accord with good medical practice. With the single exception of Bartel's expert witness, all witnesses testifying on this point agreed that the procedures employed were in accordance with good practice and yielded reliable

and accurate results. During the extensive foundation testimony heard prior to admission of Exhibit I, the experienced trial judge questioned the witnesses in detail on various points. In response to a question from the court, Westphal-Marcus indicated she believed that the blood drawing procedure used in Bartel's case did not deviate from routine hospital procedure. Further, Heuer stated that she performed the Bartel blood test using good, reliable procedures. The above testimony, together with testimony specifically relating to Bartel's blood test, was relevant and provided adequate foundation to support admission of Exhibit X.

We hold that the record contains substantial credible evidence to show that the test procedure employed in this case accorded with good medical practice to assure reliable results.

Bartel vigorously emphasizes those portions of the testimony which he argues support his contention that the blood test results were inadmissible. He argues the necessary foundation was not established because the State failed to establish certain facts which he argues are essential to admissibility of the results. We will discuss each of these contentions in light of the record.

1. Bartel argues that the State's failure to identify positively the person who drew Bartel's blood precludes admissibility of the test results. The testimony of R.N. Westfall-Marcus established that she was present for the drawing of the blood specimens from Bruce Bartel as was Bill Kirk, R.N., Jackie Clausen, Night Supervisor, and the medical doctor. While she was present at the time of the blood drawing, she could not recall whether she or Nurse Kirk had drawn the blood sample. She did testify at length regarding the procedure customarily followed in the drawing of blood. Her testimony and that of other witnesses established that

the two registered nurses were both qualified to draw blood and were both familiar with routine hospital practices. Nurse Westfall-Marcus completed a portion of the emergency room records with regard to the treatment of Mr. Bartel, particularly the cross-matching of blood and the ordering of the blood test. The routine procedure used by Nurse Westfall-Marcus and other nurses in the hospital was established without contradiction. There is nothing in the written records to indicate any deviation from these procedures. Nurse Westfall-Marcus testified there was no deviation from routine procedures. Mere inability to recall which of two registered nurses completed this particular blood test after a lapse of two years is not a sufficient basis to challenge the admissibility of the blood test itself. While it would have been preferable that the name of the nurse withdrawing the blood be shown on the emergency room records, Nurse Westfall-Marcus indicated they were so busy taking care of the severely-injured patient, Bartel, that this had not been placed on the records. The testimony established the very large number of blood tests conducted by hospital personnel and by Nurse Westfall-Marcus in the course of emergency room operation. Under the circumstances of this case, the failure to establish which of two registered nurses withdrew the blood does not preclude admissibility of the test results.

2. Bartel contends that the State failed to establish the time when the blood was drawn. He argues this is critical because it must be shown that administration of mannitol did not interfere with test results, and also because time of blood drawing is critical to the accuracy of calculations made by experts to determine the degree of intoxication at the time of the accident. The time of the blood drawing is certainly a significant fact. Nurse

Westfall-Marcus testified that the records did not disclose specifically the time of the blood drawing, but only established that the I.V. was commenced at 3:30 and that mannitol was given to Mr. Bartel at 3:35. She testified that the routine practice, which she followed and which was followed by other nurses in the hospital, would have required the withdrawal of the blood promptly after the commencement of the I.V. and prior to the giving of mannitol. The testimony of Leilani Heuer, the lab technician who conducted the blood test, established that she completed her test at 4:30 and that it would have taken her not less than one-half hour to complete the test. While that evidence does not indicate a specific time, it does confirm the probability that the blood was withdrawn between 3:30 and 4:00 a.m. The findings on the part of the District Court indicate that it concluded that the blood was drawn at close to 3:30 a.m., when the I.V. was begun. There is certainly substantial evidence to support that conclusion. There is in fact no evidence to the contrary, but only the speculation raised by Mr. Bartel. We conclude that the argument of Mr. Bartel that there was mannitol interference must also fail.

3. Bartel argues that the State's failure to demonstrate that a non-alcoholic solution was used for skin preparation is fatal to the test result's admissibility. Nurse Westfall-Marcus testified that the routine practice is to use Betadine, a non-alcoholic solution, when alcohol testing is anticipated. However, she could not specifically remember the nature of the solution used on Mr. Bartel. She did explain in detail the nature of the I.V. which was started, pointing out that after making a veni-puncture, the needle is withdrawn from the catheter with the tourniquet still on the arm so there is a significant spilling of blood on the floor before the syringe is inserted, at which time

the 10 cc.'s of blood are taken out for testing purposes. She concluded that even if alcohol had been used to swab the arm prior to the commencement of the I.V., so much blood was spilled that she did not believe there could have been any contamination. Dr. Mueller, forensic pathologist, testified that he had done studies on the effect of the use of isopropyl alcohol swabs on the measurement of ethel alcohol. Dr. Mueller testified he had found the only way it would affect the ethel alcohol result was if the needle was withdrawn through the sponge with the suction still on or, in other words, the doing of something distinctly abnormal or incompetent in withdrawing the blood. He testified that in the ordinary way of preparing an arm for example with alcohol, "isopropyl alcohol simply did not give measureable amounts of alcohol." In addition, he testified that the drug mannitol is not an interfering substance with the method of alcohol testing used in the present case. We, therefore, conclude that a failure to demonstrate that a non-alcoholic solution was used is not fatal to the admissibility of the blood test.

4. Bartel argues that the State failed to show that Bartel's abnormal body chemistries did not interfere with test results. However, the record contains nothing, indicating that body chemistries actually affected test results.

5. Bartel contends that the test results are inadmissible because the State failed to produce the original test machine printout and failed to produce quality control records. Failure to produce the original test printout does not preclude admissibility of test results. See McAlpine, 634 P.2d at 1171-72, 38 St.Rep. at 1584. Heuer testified that Exhibit X was the lab report she prepared by recording test results. Further, she stated she would have repeated

the test if necessary to get an error-free result. Heuer and Spradlin testified that the hospital routinely followed quality control procedures, preventive maintenance procedures and daily calibration procedures. We find no merit in these contentions.

6. Finally, Bartel argues that the test results were inadmissible because the State failed to show that testing serum rather than whole blood did not affect test results and failed to show that more than one blood sample was tested. On the contrary, Dr. Mueller testified that testing of serum rather than whole blood was not significant because it could account for error of no more than 2-3 percent in test results. Further, he stated that multiple test samples were unnecessary for accurate results. We reject these contentions.

Despite Bartel's vigorous argument as to the significance of the alleged omissions in foundation testimony, Bartel has failed to establish any actual inadequacy in the blood test procedure which affects admissibility of the blood test results. In McAlpine, we found it significant that the appellant had presented no evidence to support his contention that post-mortem blood clotting seriously affected test results. We stated that at most, the appellant had laid a basis for a suggestion that the condition of the victims' blood had changed between the time of death and the time of drawing the blood. We concluded that "[s]uch a suggestion goes to weight, not admissibility." 634 P.2d at 1171, 38 St.Rep. at 1583.

In a similar manner, Bartel has at most laid the basis for a variety of suggestions that Bartel's blood test results were in some manner unreliable. Bartel has cited numerous cases from foreign jurisdictions which he argues establish the inadmissibility of Exhibit X. These cases generally



follow the rule established in *Lessenhop v. Norton* (Iowa 1967), 153 N.W.2d 107, which requires that before blood test results may be admitted in evidence, each of 9 specific factual requirements must be satisfied. These requirements include a showing of the time at which the blood was drawn and the identity of the person who drew the blood. 153 N.W.2d at 112.

We do not follow the rule which requires that each of a list of facts be established as foundation for admissibility of blood-alcohol test results. Rather, we follow the McAlpine rule which requires that procedures accord with good practice in the field to assure reliability. Whether procedures accord with good practice in the field is a question to be decided based upon the facts and circumstances of a particular case and the expert testimony received. Having concluded that the record supports a finding that good medical practice was followed in this case, the alleged omissions in foundation raised by Bartel go to the weight of the testimony rather than its admissibility.

We hold that the District Court did not err in admitting into evidence the results of Bartel's blood-alcohol test.

## II

Are the District Court's findings of fact number 6 through 8 supported by substantial credible evidence?

Bartel's contention that findings of fact number 7 and 8 are unsupported by substantial credible evidence depends upon the inadmissibility of blood test results and upon Bartel's characterization of other evidence regarding his intoxication and impairment. We have concluded that the evidence of blood test results was properly admitted. We would also conclude there is additional evidence which supports these findings by the District Court.

Gerald Cooper, one of Bartel's drinking companions, could not remember how many drinks Bartel had at any of the bars they visited. George Mitchell told investigating officer Schmauch that they had been drinking, barhopping. Mitchell testified that Bartel had 9 or more drinks. Randy Merryman, a Lake County Deputy Sheriff who was present at the scene immediately after the accident, stated that there was a very definite strong odor of alcohol on Bartel's breath. Karla Court, the registered nurse at St. Ignatius Hospital who filled out the initial report on Bartel, while she stated she did not know for sure that Bartel was intoxicated, said the smell of alcohol on him was "pretty strong." Dr. Cooney, treating physician at St. Patrick's Hospital in Missoula, stated he has experience in recognizing intoxication, that he smell of alcohol is very characteristic of intoxication, and that the alcohol smell on Bartel was the basis for the notation on his report that Bartel was intoxicated.

Although there was extensive testimony regarding the number of drinks Bartel had and how drunk he appeared to be, the testimony was contradictory and none of the witnesses could state definitely how many drinks Bartel had or how drunk he was. The collected testimony supports a finding that Bartel had anywhere from 9 to 15 drinks between 9:00 p.m. and 1:00 a.m. on the night of the accident. The District Court concluded in finding of fact number 7 that Bartel had consumed "quite probably 12 to 15 drinks containing undetermined amounts of scotch whiskey."

We hold there is substantial credible evidence to support this finding. This Court will not re-weigh conflicting evidence. Marriage of Smith (Mont., Dec. 13, 1984), No. 83-502, slip op. at 4.

Extensive testimony was presented regarding Bartel's blood-alcohol level at the time of the accident and the

degree to which he was impaired. The testimony on these points, as on most other key points in this case, was in sharp conflict. We conclude, however, that substantial evidence supports finding of fact number 8 with respect to Bartel's blood-alcohol level and degree of intoxication.

Mr. Hutchinson, a clinical toxicologist with extensive experience in blood-alcohol testing and forensic toxicology, stated that based upon certain known factors it is possible to calculate with reasonable scientific reliability the blood-alcohol level of a certain individual at a certain time. Hutchinson then testified at length regarding the details of such a calculation as to Bartel. Hutchinson concluded that Bartel's blood alcohol level at 1 a.m. would have been from .103 to .213, within a reasonable degree of medical certainty. The blood-alcohol level was expressed as a range of values to take into account the unknown variables of individual elimination rate and individual absorption rate. This level would require that the individual drink around 18 to 21 ounces of 86 proof scotch. Hutchinson's testimony was corroborated by Dr. Mueller.

Dr. Mueller further testified that at about .08 a person's visual acuity is significantly affected. The alcohol decreases peripheral vision, ability to recognize objects clearly, ability to focus, and ability to recover after being blinded by bright light. "Starting at about .08 the effect of alcohol in the system is to produce a kind of tunnel vision." At a .15 level, the vast majority of people are severely affected in driving a motor vehicle. Functions important in driving are impaired at .15 or less, even though there are no obvious signs of drunkenness apparent in those habituated to alcohol. Dr. Mueller stated that unless Bartel is very unusual, he would have suffered these effects.

We hold there is substantive credible evidence to support the District Court's finding of fact number 8, that "[a]t the time of the accident, Bartel's blood stream was carrying between .103 and .213 percentage alcohol, which seriously impaired his sensory and mental functions. . . ."

Bartel also contends that finding of fact number 6, that Bartel was "thoroughly familiar with the intersection," is not supported by substantial credible evidence. We disagree. The record indicates that Bartel had driven past this intersection daily for many months prior to the accident. Bartel denied at trial that he had ever driven through this intersection or that he had a friend in St. Ignatius. This statement was impeached at trial through Bartel's deposition in which he admitted having visited a friend in St. Ignatius and having driven through the intersection. The trial court specifically found that Bartel had previously been in St. Ignatius on several occasions and that Bartel had done extensive traveling in the area during the 6 years he lived in Ronan.

We hold there is substantial credible evidence to support the District Court's finding of fact number 6, as well as findings number 7 and 8.

### III

Finally, we turn to an issue which was not raised by appellants but which was discussed in oral argument. The issue was whether the district court erroneously concluded that Bartel's negligence was the sole proximate cause of the accident.

The court specifically found that under the light and weather conditions at the time of the accident an ordinarily observant driver could observe:

"A. From a distance of not less than 450 feet south of the north end of the traffic island the roadway itself could be seen to curve to the right,

or east. B. The end of the island and its hook were visible from an approaching distance of not less than 350 feet, the point of the designated bypass to Highway 93. C. From a point approximately 200 feet to a point approximately 50 feet from the north end of the island the center line yellow stripe was clearly discernible, as were the white border stripes and the curbing of the island. D. From a distance of at least 150 feet south of the north end of the island an unobstructed passage to Highway 93 was clearly discernible. E. The triangular cautionary 'yield' sign could be observed at least 400 feet south of the north end of the island."

Investigating Highway Patrol Officer Richard G. Schmauch testified as follows:

"Q Officer, based on your experience and your training, your investigation of this particular accident, your observations do you have an opinion as to the cause of this accident?

"A Yes, sir, I do.

"Q And what is that opinion?

"A Just carelessness on the part of the operator.

"Q And why do you say that?

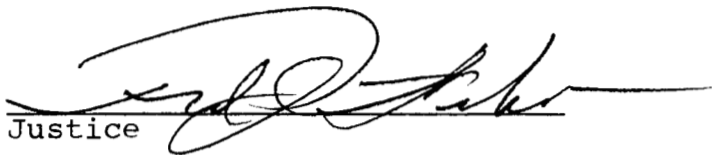
"A Because I know that if a person was paying attention, obeying the laws and the signs in the area, that he would not have contacted that divider."

As previously set forth the district court concluded that if Bartel had been driving in a reasonably careful and prudent manner and not under the influence of alcohol, he could have easily avoided the collision with the traffic island. He also concluded that Bartel was not in any way trapped by highway design, signing or maintenance. The findings and conclusions of the District Court regarding proximate cause are not challenged by Bartel on appeal.

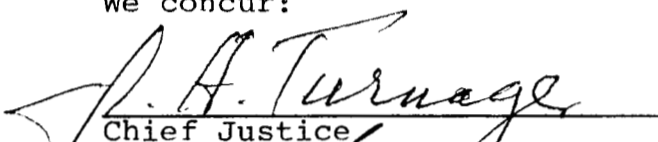
We hold there is substantial credible evidence to support the District Court's findings and conclusions that Bartel's negligence was the sole proximate cause of the accident. See *McAlpine v. Dahl* (1978), 179 Mont. 23, 585 P.2d 1307; *Jimison v. Unisted States* (D. Mont. 1967), 267

F.Supp. 674, affirmed Jimison v. United States (9th Cir. 1970), 427 F.2d 1133.

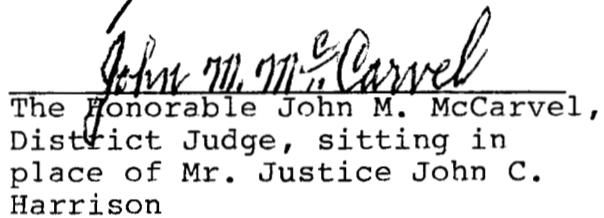
We affirm the judgment of the District Court.

  
Justice

We concur:

  
Chief Justice

  
Justice

  
The Honorable John M. McCarvel,  
District Judge, sitting in  
place of Mr. Justice John C.  
Harrison

Mr. Justice John C. Sheehy, dissenting:

I dissent from the unqualified acceptance by this Court and by the District Court of the blood test results in light of the record here.

In my original dissent to the original opinion which has now been withdrawn, I contended that no foundation had been laid for the supposedly scientific tests of the blood alcohol concentrations here. I continue here in that dissent to the new opinion because at a minimum, for scientific test results a foundation should include the following factors: (1) that the persons engaged in the test were qualified; (2) that the machine used and its components were in proper condition; and (3) that the test was properly conducted.

In this case, factors (1) and (3) have not been shown. It is incredible that the hospital chart does not show the precise time in which the blood was withdrawn from Bartel, nor the person who withdrew the blood. Thus we have no direct evidence as to how part of the test was conducted, a most important part, the drawing of the blood sample itself. A record of the time the blood was withdrawn from Bartel was especially important, because if the blood was taken after mannitol had been administered, at 3:35 a.m., then the test was subject to considerable doubt. Mannitol is a crystalline alcohol having a chemical makeup of  $C_6H_{14}O_6$ . If Bartel's blood was withdrawn before the mannitol was administered, but isopropyl was used to swab the location where the blood was withdrawn, there is still a problem (not admitted by the State experts) because isopropyl has a chemical makeup of  $C_3H_8O$ . The chemical symbol for ethyl alcohol, the intoxicating agent in liquor is  $C_2H_6O$ .

This Court, like many another, has fallen prey to the pseudo-science of alcohol concentrations in the blood, urine or breath to determine drunkenness. With the advent of statutes using alcohol concentrations to define drunk driving, a holy mystique of a sort has grown up around the levels defined in those statutes. Courts and lawyers untutored in chemistry and in spite of their own experience accept these levels without question. They adopt the statutes as establishing a sharp cleavage between drunkenness and nondrunkenness. The assumption is embraced that one having an alcohol concentration of less than 0.10 is not drunk, but one having an alcohol concentration greater than 0.10 is drunk, even though that assumption belies their own personal observation. It is our common observation that some people carry their booze better than others.

What is forgotten is that 0.10 alcohol concentration is an arbitrary figure, so arbitrary that proof of such an alcohol concentration without more, is in itself a crime in operating a motor vehicle. Section 61-8-406, MCA. Until the legislative amendment in 1971, the former arbitrary figure was 0.15 alcohol concentration which would be half again as much alcohol in the blood. Section 32-2142, R.C.M. 1947, amended Ch. 32, Laws of Montana (1971).

Now courts give greater probity to blood test results than to witnesses' observations of drunken persons, when the reverse should be true. To paraphrase the remark about pornography, we cannot define drunkenness, but we know it when we see it. In this case, there was a wealth of evidence about the amount of liquor consumed, the appearance, the eyes, the breath, the gait, the slurred speech, the lack of coordination that, had the District Court relied principally



on these and not so heavily on the blood test results, I would then support its judgment. But because the blood test results weighed so heavily in its opinion in determining the intoxication of Bartel, I am forced to dissent.

I have never worshipped at the shrine of blood test results because they are for the most part a false idol, with feet of clay and the heart of a gas chromatograph.

It is evident that the majority and the District Court have not thoroughly thought out the implications of blood test results, because each blithely accepts that Bartel had "a blood alcohol level of .171 percent" or that at the time of the accident, Bartel's blood alcohol was "between .103 and .213 percent." Percent of what? Blood alcohol levels cannot be defined in terms of percentage unless they are expressed in terms of percentage of weight or percentage of volume. Neither volume nor weight is met under the evidence in this case.

The statute defining "alcohol concentration," for the purpose of this case, requires grams of alcohol per 100 milliliters of blood. Section 61-8-407, MCA. Grams are a measure of weight. Milliliters are a measure of volume. One cannot be expressed in terms of the other by percentage unless the substances being compared weigh exactly the same.

Alcohol is lighter than water, because it floats on water. In fact, absolute alcohol has a specific gravity of 0.789, compared to water which has a specific gravity of 1. Blood is thicker than water, both socially and physically. I do not know the specific gravity of human blood but I suspect that it is greater than the specific gravity of water because my personal observation is that blood sinks in water. A cubic centimeter of alcohol, therefore, would weigh much less

than a cubic centimeter of human blood. If we had a 100 milliliter mixture of water and alcohol of which the alcohol consisted of 1 percent by volume, the alcohol in the mixture would weigh 0.789 grams. If the alcohol in the same mixture constituted 1 percent by weight, the mixture would contain nearly 1.267 cubic centimeters of alcohol. Chemically that is a vast difference.

It is for that reason that the statute defining alcohol concentration now avoids references to percent, and relates instead to weight of alcohol per volume of blood. There is nothing, however, in the record before us to tell us what the so-called experts were talking about when they were referring to "percent" in determining blood alcohol levels.

Lost in the mumbo-jumbo of the pseudo-science of blood alcohol tests is the fact that the tests involve infinitesimally small amounts. This is because statutory blood alcohol terms are couched in terms of metric measures, perhaps purposely so. Most Americans do not comprehend the relationship between metric measures and their U.S. equivalents. It may have helped if section 61-8-407, MCA, had defined "alcohol concentration" as the number of 0.035 ounces of alcohol per 6.1 cubic inches of blood. (A gram is 0.035 ounce.) We might be able to grasp then that if Bartel's blood alcohol level was 0.171 (assuming that 0.171 refers to grams) that his actual alcohol level per ounce was 0.005985 ( $0.171 \times 0.035$ ). Put another way, if each ounce of his blood was broken into a thousand parts, at a blood alcohol level of 0.171, six parts of that blood would constitute alcohol.

The minuteness of those figures is lost in the metric system in the pseudo-science of blood alcohol levels. Minute

amounts of alcohol in the blood can cause intoxication. Minute amounts of other alcohol-related substances, if present, can seriously distort blood test results.

I fear the weight given to blood test results, especially in civil cases where other and more convincing evidence of drunkenness is available. I fear the testimony of experts who testify that the margin for error in these tests is "2 to 3 percent." Two percent of 0.005985 is 0.0001197. I truly doubt that any machines available here are capable of measuring down to the ten millionth part. If we accept these statements without question, we have been overtaken by a form of doublethink in the guise of metric measures.

Please do not answer that the hospital and doctors used the blood test results for their medical purposes, and therefore the results must be accurate. The medical people here did not need blood tests to determine that this man had been drinking. The nurse wrote "intoxicated" upon the chart the first moment she saw him. That observation was not based on blood tests.

For these reasons, I would set a rigid foundational requirement for the admission of blood test evidence. Routine would not be enough. No perfect routine and no perfect machine can escape the impact of the imperfect human being. The majority in this case have elevated routine into infallability.

I would reverse this case on the grounds that the District Court found evidence of intoxication based on the blood tests for which no proper foundation was laid and for the further reason that the blood test results do not relate to the statutory scheme of weight per volume of blood.

*John B. Sheehy*  
Justice

Mr. Justice William E. Hunt, Sr., dissenting:

I concur in the dissent of Mr. Justice Sheehy.

*William E. Hunt, Sr.*

Mr. Justice Frank B. Morrison, Jr., dissenting:

I concur in the dissent of Mr. Justice Sheehy.

*Frank B. Morrison, Jr.*  
Justice