Ethics and Professionalism

What Is this Thing Called Ethics and, Sometimes, The Code of Ethics?

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"eth-ics (eth/iks). . .1, the study of Standards of conduct and moral judgement, moral philosophy.2, a treatise on this subject.3, the system or code or morals of a particular person, religion, group, profession, etc."
Webster's New World Dictionary

"LEGAL ETHICS. Usages and customs among members of the legal profession, involving their moral and professional duties toward one another, toward clients, and toward the courts. . ."
Black's Law Dictionary, Revised Fourth Edition

The Islamic *Holy QUR'AN* defines Ethics as Morals, including truth, sincerity, purity, unselfishness, humility, perseverance, patience, thankfulness, self-control, courage, and forgiveness.

The preamble of our ASPRS Code of Ethics:
"Honesty, justice, and courtesy form a moral philosoply which, associated with mutual interest among men, should be the principles on which ethics are founded.

"Each person who is engaged in the use, development, improvement of photogrammetry should accept those principles as a set of dynamic guides for his conduct and his way of life rather than merely for passive observance. It is his inherent obligation to apply himself in his profession with all diligence and in so doing to be guided by this Code of Ethics.

"Accordingly, each person in the photogrammetric profession shall have full regard for achieving excellence in the practice of his profession and the essentiality of maintaining the highest standards of ethical conduct in his responsibilities and in his work for his employer, his clients, his associates, and society of large. . ."

By now it should be apparent that Ethics is a very big subject. But what does it have to do with a regular, dues-paying ASPRS member? The answer is simple–**EVERYTHING.**

Ethics and/or the Code of Ethics are not some dozen-line set of rules dreamed up by a blue-nosed fundamentalist committee of one's contemporaries. They are a series of Standards which govern the conduct of virtually every person alive. Punishment for violating the Code of Ethics is a loss of morality. Sometimes the violator will be the only one cognizant of his transgression. But his conscience should remind him time and again of his violation because he is an intelligent member of a civilized culture. Unfortunately, some members of our Society ignore their inner thoughts and ignore moral behavior. Beware! There is a very fine line before man-made laws take over. Ignoring moral behavior is stealing, and the people should abide by certain guidelines. When people began group living, from the Stone Age onward, a standard for behavior–moral behavior–became necessary. In time, the rule of life became more complex for the well-being of the individual *and* the group.

The word Ethics is from the Greek word *ethos* meaning "character custom." It is the study of the nature of morality and possibly the motivation of moral conduct. Synomyms include good, true, beautiful, and virtue. "Good' is fitting in the moral order of reality. The philosopher St. Thomas Aquinas defined virtue as being in accordance with the will of God.

Morals are ethics in practice. An ethical man is one who assents to proper practice, but he is not moral unless he conducts himself in accordance with recognized standards of right and wrong.

There are philosophic opinions on morality, beginning apparently with the Greek Socrates who was the first in Western culture to identify and express his conclusions in writing. He was followed by Plato, Aristotle (who believed in God), and others. St. Thomas Aquinas was greatly influenced by Aristotle, and brought the religious element to the subject of morality. In ancient China the maxims of Confucius' ancestors were accepted as the moral code. In the Egypt of the Pharaohs, precepts set down by Ptahhotep formed a strict religion. The impact of the moral codes quickly spread to wherever the Israelites settled, because their code for "a life of goodness" was demanding. Whenever they erred, throughout the centuries, they were sent repeated calls to turn again to righteousness. The Muslim people were also influenced. In the New World there are several reports that the Aztecs lived under a very high moral code.

Through the ages in the study of ethics are such subjects as: Happiness as the Highest Good, Perfection as the Highest Good, Duty as the Highest Good, The Knowledge of Good and Evil, The Sanction of Morality and the Motive of Moral Conduct.

Very briefly, moral judgement *should* rule everyone's activities today whether it does in practice or not. Business ethics are mentioned as early as in the Old Testament, Proverbs, Chapter 20, verse 14,

> "It is bad, it is bad," says the buyer;
> but when he goes away, then he boasts."
> (*Bible, Revised Standard Version*)

Ethics is a subject everyone should study, thoroughly, at least once in a lifetime. Go to the city library or get out your home encyclopedia, turn the TV off and spend several hours reading before a warm winter fire. You will be rewarded. You will find out things about yourself you had never understood.

As a professional engineer, a surveyor, and a photogrammetrist, the writer has sworn to use good judgement, to be fair to clients and/or employees, giving equal weight to those who furnish and to those who use the product.

Over a half century ago I, too, realized what it meant to be tempted to do an unethical thing. This is the first time I have

PHOTOGRAMMETRIC ENGINEERING & REMOTE SENSING,
Vol. 57, No. 5, May 1991, pp. 497–499.

0099-1112/91/5705–497$03.00/0

ever mentioned this episode to anyone. It has come to mind many times and it was a very good lesson. I think of it every time I am even casually tempted. Several times since I have been accused of being too straight-laced.

The South did not recover from the Great Depression as promptly as other areas. Forced to leave college because of finances, I was lucky to find a job as "Associate Engineer' with the State Highway Department. My job was Levelman, at $125/month, setting grade stakes on a proposed 16-ft wide, 8-mile long state highway. Already, the site had been cleared down to a hard red clay base. I had to set stakes at 50-foot intervals, sides and center. The Design Engineers computed the elevations for every interval (stake). A wood stake marked with blue keel crayon was driven into the ground until I read through the Wye level the designed elevation of each stake, at 50-foot intervals on the sides and center. The stakes would show the fill line, four-tenths of a foot, for the Contractor's pulverized rock base.

I liked the outdoor life and that money was heaven on Earth. I forget how many stations we made that day, but the Resident Engineer was satisfied. The next day the Contractor's foreman mentioned privately to me a reward of 10 cents per stake, center line and both sides, if I would set the stakes to plus three-tenths high, one tenth-foot less than "as designed"! He and I would be the only two to know about it. Thirty cents per station times almost eight miles.

I could buy that used Studebaker. I agreed. That night I tossed and tossed, sleeping less than two hours. The next day I told the Resident Engineer, who then asked the foreman. The foreman called me a liar. The Resident Engineer suggested that I be transferred. I quit.

Throughout the years I have asked myself if that was merely unethical. My certain reply is, "No, that would have been stealing."

Because ethics is continually with me, I can spot the lack of it very quickly in others. A prime example in photogrammetry is using too great (large) a C-Factor for instrument conditions or personnel skill in cross-sectioning a highway project.

The operator may think that the dot is hard on the ground, but dozens of glitzes or bad planning can ruin that hypothesis. This is not always merely unethical. Sometimes it is stealing, if it would have cost more to fly lower, calibrate the instrument, etc., to fulfill the other requirements necessary for accurate sectioning.

During WWII, I was assigned to the 653rd Engineer Topo Bn., stationed in Dehra Dun, India. The Survey of India headquarters was also located here. I served briefly under Col. Desmond R. Crone, R.E., renowned Air Survey authority. I was impressed with the strong exercise of fairness. This was a half century ago. The Code of Ethics was posted above the Air Survey bulletin board, and was practiced.

In the early 60s, I made a U.S. market survey for the Bendix Corp. My directive was to visit state highway departments, large aerial survey firms, universities, and selected engineering firms which had aerial capabilities. I described to each the many good points of the Bendix/Nistri AP/C analytical stereoplotter.

This was one of the first computer adaptations to a stereoplotter. Bendix wanted information about potential sales in the civilian sector. A description of the AP/C, and the fact that I had operated one, was reassuring to many. The expected high prices slowed some, but responses from others stunned me, e.g., "Is there a rake (off)?" "How much is on top?" "That price has to be padded!"

There is a small percentage of photogrammetrists and higher-ups who expect a lagniappe in every purchase. They consider it the way of life (and so it is in several countries). I mentioned this to two Bendix officials. They both remarked that it appears to be a custom "which has come over" and is very costly to many honest businesses.

For many years photogrammetric people have suffered in the comparison of ground and aerial survey methods. References from a Corps of Engineers report are good examples.

Many control points placed by conventional survey methods had been moved for various reasons from their original locations, often with no challenge or documentation. Users frequently believe that, when found, a control point located by its marker represents its true position. Such users have constructed facilities and located property boundaries in good faith.

Within the Corps of Engineers there were demonstrations of how photogrammetry could be used to determine the actual location of the control point markers. Apparent discrepancies required explanation and frequent embarrassment. In turn, this generated more unethical behavior, some even amounting to a cover-up of poor original surveys. The defenders challenged photogrammetry with "It will never hold up in court!"

Later the Corps of Engineers demonstrated how another technology, inertial positioning, could also be used to locate the actual position of control points. By this time photogrammetry had been tested in court successfully. Surveys were redone and corrected. Photogrammetry as a quality control tool can preempt unethical behavior in conventional surveys.

Even in Academia, and in everyday Business, people have ethical problems. Occasionally a professor will be given faint praise by his contemporaries or students, and will subconsciously magnify the few good words to high praise. I have known the recipient to unwittingly violate parts of Nos. 3 and 6 of the Code.

Also, frequently a professor or division head with limited knowledge but blessed with an extraordinary gift of gab will charm his superiors, much to the detriment of associates and underlings. These actions are repugnantly counter to several items in our Code.

Ethical behavior should be practiced by everyone. Today, in Florida, my home state, a great number of state legislators are being brought to task for accepting lobbyists' valuable favors without declaring them.

There is solid evidence that the introduction of Analytical Stereo Plotting has given a tremendous push to plans preparation for transportation projects. Its accuracy, production speed, and economy are well proven. Over a fourth of the State Transportation Departments have one or more analytical CADD plotters, many on double shifts. Some report they are farming out additional work. Many of those states which do not have in-house capabilities are contracting the work to commercial firms. Several reported that at first they had difficulty obtaining proper detail and accuracy, but today almost all are completely satisfied.

In private practice, however, some are hurting the image of our industry by "cut-rating" their competition, getting the contract, and giving the absolute minimum product. Invariably, if the work is carefully checked, errors are uncovered right and left. In all probability the client, who does not know the advantages and limits of photogrammetry, blames the profession and not his cut-rate aerial survey firm.

More than any other one factor, the public's unfamiliarity with the advantages and extremities of photogrammetry has been the greatest barrier to our progress. For two years recently, I reviewed the photogrammetric field in Florida. I interviewed over 100 Design Consulting Engineers, and the Managers and/or Heads of 26 aerial survey firms, all with Florida offices. One consultant said facetiously that he knew all about photogrammetry. "I studied Air Survey 101 in college. We had a 'Kersh' (*sic*) plotter." He, with possibly 60 other engineers, had been exposed to the subject up to the Kelsh Plotter era in a surveying course.

Only one head or manager of an aerial survey firm was a college graduate in Photogrammetry. The summary of my report to the Florida D.O.T. was ". . . the two disciplines cannot communicate meaningfully. The engineer cannot describe his needs in detail. The aerial sales manager anticipates the client's needs incorrectly. . ."

Of the 26, at least ten proudly claimed that they always mapped to National Map Standards. Not understanding how shallow this claim is, the engineer was snookered and frequently signed a contract.

What the engineer needed was a Design *Plan*, with hundreds of spot elevations (cross-section elevations), *not a map*.

Almost all aerial firms can make a useful one-foot topogramphic map of a wide open area. Ninety percent of the contours will be within one-half a contour interval and spot elevations within one-quarter contour, NMAS.

The engineer must furnish the D.O.T. a design on a 1" = 20' or 1" = 10' plan gridded with cross-section spot elevations to one-tenth foot or better.

On in-depth review, I found that there are *no written* Standards for the use of photogrammetry in highway design. I am now writing a 230-page *Manual of Photogrammetry for Transportation*. How does this fit the Code of Ethics? Read No. 5 in the Code.

Events currently underway in Florida may call for new thoughts on photogrammetry.

Since "the Year One," Engineering Surveying has been a discipline of Civil Engineering. On my request, in the 50s, Photogrammetry was also included on the Florida P.E. registration exams. In my P.E. exam there were two tough photogrammetric questions, written, I learned later, by then Cornell Professor Arthur J. McNair.

Each engineering exam contained two questions of the applicant's discipline as well as questions from other branches of engineering. Years afterward some members of the Land Surveying Society had an amendment inserted in a legislative bill on engineering review, which placed Photogrammetry under the Land Surveying Registration.

Now another group of Land Surveyors are hearing pleas from some Florida Photogrammetrists to become a part of Land Surveying. These Photogrammetrists are almost all Mappers. They want professional recognition. But what is there for those practicing Remote Sensing, Close-Range Photogrammetry, Analytical Stereo Resection, Advanced Photogrammetry such as performed at the Jet Propulsion Lab, etc.? If successful for registration, the Mappers would be subordinate to the Land Surveyors and the others would be even lower.

EPILOGUE

Photogrammetry and Remote Sensing is a young science practiced by people of various backgrounds. Except for the younger members (who have limited responsibilities), most of those controlling the performance, output, and possibly future guidance and growth are more interested in lucrative financial rewards than in the advancement of the science.

Now is the time for leaders in our Society to step forward and guide the entire membership on the right path(s) to follow.

Ernest Hemingway, in writing *Death in the Afternoon*, summed up ethics in one sentence. "What is moral is what you feel good after and what is immoral is what you feel bad after."