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ETHICS EDUCATION IN UNIVERSITY AVIATION MANAGEMENT PROGRAMS IN THE US: PART ONE—THE NEED

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ABSTRACT

This three-part study examines how four-year universities in the United States with baccalaureate programs in aviation management include ethics instruction in their curricula. Based on a literature review, no research exists to describe the current status of teaching ethics to aviation students. Yet concurrently, unethical activities reported in the media involving the aviation industry indicates a need for such programs. Part One of this study justifies the need for ethics education and develops a series of hypotheses to evaluate the current status of ethics instruction, which was investigated and will be reported on in Parts Two and Three of this study, respectively

INTRODUCTION

Stories about the unethical behavior of individuals in our society appear regularly on the front page of newspapers and on evening news broadcasts. In career area after career area, ethical lapses shake the confidence of the public, whether it is disreputable corporate business dealings, political scandals, medical malpractice, legal corruption, or improper relationships between personnel in the nation's military services. In fact, in 1997, the Ethics Officer Association reported that nearly half of the nation's workers had engaged in some sort of unethical or illegal acts during the previous year (Nearly half, 1997).

The aviation industry has its own share of problems in this regard; examples of unethical conduct in individuals and organizations abound.

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For instance, a mechanic in a large regional airline claimed he found evidence of sabotage in the form of cut wires on an aircraft brake system. However, investigators later discovered the mechanic had cut the wires himself in an effort to get a fellow employee fired (Chicago mechanic charged, 1997). In another case, the U.S. Department of Transportation's Office of Inspector General (1998) charged a large American air cargo carrier with parting out parts from two Boeing 727 aircraft. The carrier had purchased two 727s from a foreign air carrier and falsified the records to show that the aircraft had been maintained according to U.S. airworthiness standards. Then the company sold parts of the aircraft as if they had been receiving regular airworthiness inspections and servicing. All of the equipment transfer tags, which accompanied the parts, were fraudulently marked to show the parts in serviceable condition, and many of these parts were critical assemblies to be used on other aircraft. The collusion existing among the company's high-ranking management personnel necessary to accomplish all this is especially noteworthy.

Generally, in corporate America the principal motivation to act unethically is selfish interest such as competitive advantage, higher revenue, or individual advancement, and the results usually appear in the loss of something of dollar value to competitors or customers. Unfortunately, the consequences of unethical conduct in the aviation world sometimes extend beyond things to which a dollar value can be assigned. Often it results in lost lives.

Perhaps one of the most noteworthy incidents of this in recent history took place in the Florida Everglades in May 1996 and involved a Valujet Airlines accident in which 110 passengers and aircrew members died. Most people heard the press reports about some oxygen-generating canisters causing an on-board fire shortly after takeoff, which eventually raged out of control before the pilots could safely return to land in Miami. What most people do not understand is that the accident could have been prevented altogether if certain personnel involved had acted ethically. Through a complex chain of events the oxygen canisters were illegally put on board the ill-fated aircraft for shipment. In violation of maintenance checklists, the canisters had not been properly prepared for shipment by contracted maintenance facility personnel when originally removed from other aircraft. Nevertheless, the mechanics and supervisory personnel involved certified the work as though it had been done! In the official accident report the National Transportation Safety Board (NTSB, 1997) said,

> The Safety Board is alarmed at the apparent willingness of mechanics and inspectors at the SabreTech facility to sign off on work cards indicating that the maintenance task had been completed, knowing that the required safety

> caps had not been installed, and at the willingness of those individuals and other maintenance personnel (including supervisors) to ignore the fact that the required safety caps had not been installed. The Safety Board has long been concerned about false maintenance entries, and their sometimes catastrophic implications. (p. 116)

Later in the report the NTSB said, "It is very likely that had safety caps been installed, the generators would not have activated and *the accident would not have occurred* [italics added]" (p. 135).

General Statement of the Problem

The obvious question at this point is what can be done to correct situations such as the ones cited above. Referring to similar events, Pelikan (1992) said that poor ethical conduct on the part of university graduates reflects poorly on the university education those graduates received. While serving as President of the College Board, Stewart (1988) stated that, "schools and colleges have a crucial obligation to transmit an ethical sense and an understanding of moral values to our young people" (p. 11). Bok (1986) called for courses in "moral reasoning and the analysis of ethical dilemmas in both undergraduate and professional school curricula" (p. 172). Indeed, a growing number of higher education academic fields have initiated ethics instruction as part of their curricula. Most prominent in this author's search were the fields of law, medicine, business administration, and public administration; some other disciplines have begun to explore this arena as well.

Though it would be nearly impossible to measure the effect of ethics education in the subsequent professional lives of university graduates, many people from a wide variety of positions are calling for ethics to be part of collegiate curricula (Bok, 1986; Pelikan, 1992; Stewart, 1988). As will be discussed later, it appears that several preliminary conclusions can be drawn about the programs that so far have established instruction on ethics as a part of a student's education. Those programs that are making the most progress in incorporating ethics education are characterized by support for the inclusion of this subject from the administrators of those programs (Brody, 1989; Piper, Gentile, & Parks, 1993; Rhode, 1995). College faculty and staff in programs that have infused ethics as a pervasive part of their curricula (i.e., as an integral facet of the curriculum, not merely as an adjunct course taught as a separate subject unrelated to a student's major) report this approach to be more successful in accomplishing program goals than previous ethics instruction programs (Bundy, 1995; Link, 1989; Spaeth, Perry, & Wachs, 1996; Strike, 1990). Closely related to the previous points, programs that successfully adopt ethics into their curricula involve many of the department's faculty members in teaching

and modeling ethics across the spectrum of course offerings in the department (Hafferty & Franks, 1994; Menkel-Meadows & Sander, 1996; Piper et al.; Spaeth et al.).

After an extensive search of the literature to date, this author has found that no one has addressed the subject of bringing ethics into the aviation management curriculum. Yet, it should be quickly apparent from reading professional aviation literature that ethical problems exist within the aviation industry, one that is a highly technical industry with a high percentage of college graduates in its ranks. Such graduates are filling management positions at all levels in the commercial airline industry, the aerospace manufacturing industry, federal aviation organizations, the airport management industry, corporate aviation departments, and a host of other organizations that daily affect the lives of millions of people. It stands to reason that a strong ethical value system accompanied by impeccable behavior should be required of individuals with such responsibilities. So as a first step in pursuing the inclusion of ethics in aviation administration curricula, it would be wise to ascertain the state of the current situation in such departments in the United States pertaining to ethics education for aviation students.

Research Questions

The purpose of this three-part study is to examine university departments, which offer baccalaureate degrees with aviation management (or its equivalent) as an academic major, in order to describe the current state of ethics education within those departments. The study will be accomplished in three parts. First, ethics will be defined, ethics education will be justified, and a series of hypotheses will be developed to guide research into the status of ethics education in the aviation education arena. Second, using a survey instrument, answers to the following major questions will be sought:

1. Are aviation administration departments requiring the teaching of ethics as an intentional part of their curriculum?
2. If ethics is a planned part of the curriculum, how is it taught and who is teaching it? For example, is it: (a) an adjunct course or courses taught by someone from outside the department, (b) a course or courses taught by someone from within the department, (c) a subject taught by intentionally integrating ethics into many courses within the department, or (d) some combination of all the above?

3. Is there a relationship between the importance that the department head places on ethics and whether the department incorporates ethics into its curriculum?
4. Is there a relationship between the ethical perceptions of the department head and whether the department incorporates ethics into its curriculum?

A third phase of the study will follow the initial statistical analysis of the responses to the survey. Individual interviews will be done to discover and describe why ethics is being taught or not taught. If ethics is being taught, follow-up questions to be answered will deal with how to best accomplish the objective of teaching the subject to collegiate aviation management students. If ethics is not being taught, follow-up questions will deal with reasons for not doing so. The results of Parts Two and Three of this study will be reported in separate papers.

Review of the Literature

The following literature review will begin with some definitions and cautions to guide the discussion of the subject of ethics. Then the idea of justification of ethics instruction will be raised. In so doing, the author will describe some theoretical information regarding ethical decision-making and moral judgment, and he will follow with empirical research based on these theoretical constructs. Based on this justification for ethics education, the author will describe the efforts to establish such programs in several academic fields in higher education. These efforts will be summarized with the intent of guiding the research outlined above for Parts Two and Three of this study. Before actually going on to Parts Two and Three, it will be necessary also to review several concepts dealing with the subject of educational change and how that process occurs.

Some Definitions and Cautions

Prior to discussing ethics education, it is important to begin with a few definitions concerning the term ethics and to raise a few cautions about any study that enters this realm. The Oxford English Dictionary (Michaelis, 1989) defines ethics as “the science of morals; the department of study concerned with the principles of human duty” (p. 421). The Standard College Dictionary (Simpson, 1963) states ethics is “the study and philosophy of human conduct, with emphasis on the determination of right and wrong” (p. 455). Strike (1988) continues in this vein by saying, “ethical issues concern questions of right and wrong-our duties and obligations, our

rights and responsibilities" (p. 156). In sum, ethics deals with standards of conduct.

Having arrived at a standard of conduct by some process, one then must go one step further. Ethics and morals are closely related. Ethics tell you what the standards are—what you ought to do or what you should do. Morals deal with the application of ethical standards to actual conduct. Morals reveal what you actually do. Because of the close relationship, it is very difficult to talk about one without discussing the other, particularly when talking about an actual issue. In fact, many would say it serves no purpose to have standards unless those standards influence behavior. And conversely, it makes little sense to talk about right and wrong conduct without basing the discussion on some set of standards.

Several other terms are frequently used in discussing this area: moral issue, moral agent, ethical decision, and unethical decision. Jones (1991) has given the following definitions:

> A moral issue is present where a person's actions, when freely performed, may harm or benefit others…A moral agent is a person who makes a moral decision…An ethical decision is defined as a decision that is both legal and morally acceptable to the larger community…An unethical decision is either illegal or morally unacceptable to the larger community. (p. 367)

Even in reading the terms just defined, one can see they are loaded with subjectivity, and consequently, with controversy. For instance, who decides whether an issue harms or benefits others and what degree of harm or benefit is needed to fit the definition? If an ethical decision is defined as one that is acceptable to the larger community, who is this community that decides what is acceptable, and how much is larger? Thus, a few cautions are needed before proceeding further.

First, ethics is an emotionally charged issue. Some larger issues in the field of ethics appear to be black and white; however, most fall in the realm of gray. For example, most people, if asked, would support the ethical standard that it is wrong to kill another person. However, as soon as some actual circumstances are considered, the question is no longer so cut-and-dried. Thus, individuals in American society have vigorously debated related subjects like capital punishment, euthanasia, infanticide, abortion, war crimes, and crimes against humanity without reaching much consensus on the ethical standards involved on any of them. Although laws may have been passed or judgments rendered, debate continues. The question still rages regarding who will set the standards for what is and is not ethical. In many instances, this is the very crux of the issue itself. In this respect, this study will not address how departments or professors should teach particular ethical issues. This paper will be aimed at addressing whether the subject is included within a curriculum. Actual course content and

objectives and specific course pedagogy are subjects for follow-up studies after an initial survey of the academic field is completed.

A second caution deals with terminology. Many people use the terms ethics and morals interchangeably as though they are synonymous. As mentioned above, in the clearest sense they have slightly differing meanings. Ethics deal with the standards of behavior, while morals deal with actual conduct. Some authors have not made this distinction in their writing and direct quotes will reflect this; however, this author will try to maintain the difference when using these words.

Justifications for Ethics Education

Justification for incorporating ethics into college curricula is the first critical issue that needs to be discussed. Merely showing that unethical behavior problems exist does not necessarily demonstrate that ethics instruction at the university level is needed to correct a societal trend. Therefore, the most important place to begin is to see if any previous theory-based or empirical studies have been published which give some justification for including the subject at all in higher education coursework. In short, the big question is simply whether instruction in ethics can bring about changes in ethical judgment, and thus affect moral conduct as well.

The first justification for teaching ethics comes from simple logic—you teach ethics whether or not you formally teach ethics. Piper et al. (1993) described a five-year project which began in 1987 to bring ethics to an already intense curriculum at the Harvard Business School. The authors begin by speaking to skeptics who would say you can not teach ethics to postgraduate students:. They state, “What faculty are silent about and what they omit send a powerful signal to students” (p. 6). Rhode (1995) said, “Faculty who decline, explicitly or implicitly, to address ethical issues encourage future practitioners to do the same…. The most important characteristic of effective professional responsibility programs [ethics] is the message that the subject is itself important” (p. 140-141).

If nothing is said about the subject of ethics, a subtle, but dynamic message has been transmitted that ethics is not important enough to be considered in this curriculum. And if it is not important enough to be in this curriculum, it is also not important enough to be considered in the career to follow. Saying nothing about the subject because one is convinced it will have no impact whatsoever is prejudging students who enroll in college degree programs. A simple illustration of this principle is that some people will drink and drive and kill themselves and others in the process; however, that does not mean legislators should revoke the laws regarding drinking and driving and that others should abandon all efforts to educate the public on this issue. So it is with ethics.

A typical objection is that it is too late to give university students ethics education because they have already formed their moral standards based on their developmental years, and it is not possible to change their thinking. A related argument against ethics education is that the classroom is an artificial world and, thus, it is useless to discuss ethic in the classroom because things will change in the real world with all of its situational pressures. To answer these objections subjectively, a number of authors (Menkel-Meadow & Sander, 1995; Menzel, 1997; Rhode, 1995) stated that students enjoy discussing ethical issues when presented in an interesting way. Empirically, Rhode pointed to studies that demonstrate that people in early adulthood do make significant changes in how they deal with moral issues. Also, in a survey of 234 Masters of Public Administration alumni, 75 percent said they had faced a work-related ethical dilemma, and about 70 percent of them said their ethics education helped them respond to the situation (Menzel, 1997). Additional empirical evidence follows as a second reason to teach ethics.

A second justification for teaching ethics comes from evidence of the effectiveness of teaching the subject matter. Although the number of publications dealing with empirical evidence for the effectiveness of ethics education is far less than the number dealing with the theoretical and pedagogical aspects of teaching the subject, some empirical evidence does exist for teaching ethics (Rest & Thoma, 1986). The ideal situation would be that researchers establish an experiment in which they randomly select two groups of students and give them some kind of pretest to establish their ethical level before treatment. Then they have half of the students take a curriculum with no ethics education while the other half takes the identical curriculum except that it includes ethics education. Finally, they would look at the groups some time later and compare their ethical conduct on the job, and they would try to draw conclusions about the impact of ethics education. Needless to say, this idealized scenario would be nearly impossible to conduct with any degree of validity.

A major limitation, therefore, of empirical studies to determine the success of ethics education in the form of changed behavior is that they simply do not exist. Brody (1989) said, “Our program, like most others, has not engaged in any formal evaluation process, in large measure because we have not yet been able to define how such a process would work” (p. 717). Ales, Charlson, Williams-Russo, and Allegrante (1992) stated, “Most faculty concurred that it was not possible to measure the immediate impact of the [ethics] course on students’ abilities to think about ethical issues” (p. 407).

However despite the limitations, some work has been done to determine the effect of ethics education. To understand it, two concepts need

explanation: ethical decision-making and moral development. There are models on the process that individuals follow when working through a specific scenario requiring an ethical decision. Such models outline a step-by-step process going from recognition of an issue as one that is an ethical one (or that has ethical implications) to the actual action resulting from a decision on the issue. Fraedrich and Guerts (1990) call for an understanding of this concept as an essential part of ethics education. There are also views on what has been called moral development theory. Models have been devised which describe how an individual develops his or her reasoning ability to make decisions on ethical issues. For ease of discussion, the author will refer to models, views, perspectives, or constructs in these areas as those dealing with (a) the ethical decision-making process and (b) developing moral judgment.

The ethical decision-making process. Rest, Bebeau, and Volker (1986) developed a model of ethical decision-making and behavior called the Four-Component Model (see Figure 1), which has been referenced in literature dealing with how individuals choose ethical courses of action (Jones, 1991). Although more complex models exist to describe this concept, particularly when considering individuals in organizational settings, the Four-Component Model is sufficient to understand the empirical evidence for teaching ethics. In the first step of this model an individual recognizes a decision-making situation as one that involves an ethical issue. Next, the individual makes an ethical judgment; that is, he or she decides what the ethically correct course of action should be. Third, the individual establishes moral intent. This means that knowing the correct course of action and the competing influences, the individual decides mentally to follow the ethical course of action. Finally, the person must actually perform what is ethically required in the given situation. This step in the process is the place where ethics becomes morals.

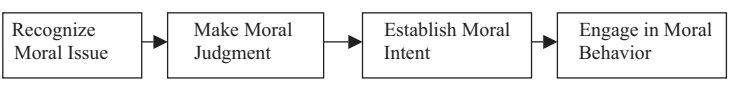

Figure 1. The Four-Component Model. The four steps used to make moral decisions.

Although this model seems rather simple and straightforward, it begs answers to a number of questions. For Step 1, for example, it questions how an individual comes to recognize issues as ones involving ethics. Regarding Step 2, it questions how individuals decide what is the ethical course of action. For the last steps, it questions how a person develop the

willpower to mentally decide to do what is right and then actually do it in the face of competing courses of action. A model on developing moral judgment answers some of these questions.

Developing moral judgment. For over thirty years a highly referenced model dealing with moral development is the one proposed by Kohlberg (Jones, 1991; Kohlberg & Turiel, 1971; Petrick, 1992; Trevino, 1986). In it Kohlberg describes six stages of moral development which address the questions raised in the preceding paragraph about the first two steps of the Four-Component Model. Kohlberg and Turiel stated that people develop progressively through the stages as they mature morally, and that the "stages have been validated by longitudinal and cross-cultural study" (p. 416). Individuals develop morally from middle childhood to adulthood through three levels, each made up of two

Table 1. Kohlberg's Model of Cognitive Moral Development

STAGE	WHAT IS CONSIDERED RIGHT
LEVEL 1 - PRECONVENTIONAL	
Stage One - The punishment and obedience orientation.	The physical consequences of action determine its goodness or badness regardless of the human meaning or value of these consequences.
Stage Two - The instrumental relativist orientation.	Right action consists of that which instrumentally satisfies one's own needs and occasionally the needs of others.
LEVEL 2 - CONVENTIONAL	
Stage Three - The interpersonal concordance or "good boy - nice girl" orientation.	Good behavior is that which pleases or helps others and is approved by them.
Stage Four - The law and order orientation.	There is orientation toward authority, fixed rules, and the maintenance of the social order.
LEVEL 3 - PRINCIPLED	
Stage Five - The social-contract legalistic orientation.	Right action tends to be defined in terms of general individual rights and in terms of standards which have been critically examined and agreed upon by the whole society.
Stage Six - The universal ethical principle orientation.	Right is defined by the decision of conscience in accord with self-chosen ethical principles appealing to logical comprehensiveness, universality, and consistency.

stages. These levels and stages are tabulated in Table 1 using excerpts from Kohlberg and Turiel.

As can be seen, people at Level One operate from self-interest so as to avoid punishment or to promote self-benefit, thus reminding one of childhood motives for acting in certain ways when instructed by adults. Those in Level Two (which according to Kohlberg includes most of American adults) conform to the expectations of good behavior of society or some smaller segment of society. Only at Level Three (less than 20% of American adults) do individuals act in accordance with universal ethical principles. "Persons at a higher level of moral development not only reason better, but they act in accordance with their judgments" (Kohlberg & Turiel, 1971, p. 414).

Kohlberg's research along with that of others (e.g., Trevino, 1986) indicates that individuals make ethical decisions from the particular stage of moral development that they have reached regardless of the ethical dimensions of the circumstances surrounding the decision. That is, they get to the second step of the Four-Component Model regardless of the circumstances surrounding the decision. However, linkage between thought processes and actual actions, that is, going to the third and fourth steps of the Four-Component Model, is more problematic (Trevino). The research of other authors in this area has shown that individual conduct will vary as the issues change and as external influences come into play (Couch, Hoffman, & Lamont, 1995; Ferrell & Gresham, 1985; Jones, 1991).

Empirical linkage. The Kohlberg Model and the Four-Component Model intersect at the first two steps of the Four-Component Model. Rest and Thoma (1986) reviewed research to evaluate the effects of educational programs and interventions designed to promote the development of moral judgment. Specifically, they did a meta-analysis of 55 studies, which had all used the Defining Issues Test (DIT) to assess the impact of moral education programs on moral judgment development. They drew six conclusions from their review, of which four apply to the topic of this study and are listed below:

1. Moral education programs emphasizing dilemma discussion (peer discussion of ethical dilemmas with the teacher as the discussion leader) and those emphasizing personality development (programs that promote reflection about self and about self in relation to others) both produce modest but definite effects, with the dilemma discussion method having a slight edge.

2. Academic courses in the humanities and social studies (courses in which the emphasis is placed on learning some body of academic

knowledge) do not seem to have an impact on moral judgment development.

3. Programs with adults (24 years and older) seemed to produce larger effect sizes than programs for younger subjects; however, several artifactual explanations may account for this trend.

4. Interventions longer than 12 weeks have no more impact than interventions of 3-12 weeks; however, durations less than three weeks tend to be ineffective when measuring moral judgment by the DIT. (p. 85-86)

The authors admitted that taking the conclusions of this study regarding improved moral judgment to the third and fourth steps of the Four-Component Model, that is, improvements in moral behavior, would be extremely difficult. Nevertheless, they "would expect there to be at least some modest correlation between moral judgment and behavior" (p. 87). However, Kohlberg and Turiel (1971) stated, "Experiments demonstrate that principled persons act more honestly and live up to their beliefs in the face of inconvenience and authority more so than do people or children at lower stages" (p. 414). Thus, a second justification for incorporating ethics instruction into higher education curricula is that teaching ethics can improve moral judgment.

Efforts to Incorporate Ethics Instruction in College Curricula

There have been efforts within several academic disciplines to incorporate ethics instruction as part of their curricula. Before seeking to describe the current state of affairs within the aviation management major, it would be important to have an understanding of the efforts that have been made by others to date. Particularly important to note would be such things as what they have done, what factors have enhanced such plans, why they have proceeded the way they have, what problems they have encountered along the way, and how they have responded to those problems.

Law schools. One would expect that law schools had been teaching ethics since the beginning as it would appear that ethics is an integral part of a law curriculum; however, such is not the case. In fact, it has only been since the mid-1970s that the American Bar Association has required law schools to provide ethics instruction for their programs to be accredited (Rhode, 1995). Simply incorporating a required ethics course, however, created many problems. As Metzloff and Wilkins (1996) stated,

> The litany of problems associated with that course is widely accepted. Required since the mid-1970s, the course on ethics has been an unwanted

> stepchild in many institutions. In most schools, it was the only or one of the few required courses; its mandatory nature breeds resentment among students. (p. 2)

One law school that did have more success instituting their ethics curriculum was the University of Notre Dame. In 1974 the Notre Dame faculty adopted a mission statement that included the dual objectives of teaching substantive and procedural issues and of "sensitizing our students and other scholars to the many ethical dilemmas that lawyers and clients face" (Link, 1989, p. 485). Rather than just teaching a required course on the subject, the faculty decided to utilize a pervasive method to teach ethics, that is, they wanted all faculty members to address ethics in all courses as appropriate to the subject matter of the courses.

The Notre Dame program still includes a required first-year ethics course. Their reasoning for doing so is important to understand:

> The ethics course is taught at the beginning of the first semester because the faculty wants to catch the students while they are still unspoiled, while they still have a high level of idealism. More important, we believe that the ethical focus creates an ambience that will strongly affect their law school career as well as their eventual professional decision making. (Link, 1989, p. 489)

The first-year course lays the foundation, and the inclusion of ethics in the balance of the curriculum infuses ethics into the rest of the coursework. A third year applied ethics course summarizes everything in the law school program.

While other law schools had problems with their ethics instruction, Notre Dame proceeded with an effective program. There are several reasons for their success. First, it was based on a mission statement adopted by the faculty. Second, they sought and received confirming advice from the dean of another respected law school. Finally, they had as a faculty member one of the "leading legal ethics scholars in the country" (Link, 1989, p. 485).

Gradually, other renowned law schools began to address the issue. In 1987 the University of Pennsylvania Law School established its Center on Professionalism. Spaeth et al. (1995) discussed what motivated this university to take action:

> While the leaders of the profession proclaim its fundamental virtue, and while teaching and writing about legal ethics flourish, reprehensible behavior even among the most acclaimed lawyers persists. It is our earnest conviction that this situation will not change unless the law schools accept some responsibility for teaching the profession's ideals not only to law students but to practicing lawyers and judges. (p. 154)

The University of Pennsylvania had taught the required course as an upper level course. By self-admission, it was "if not a disaster, close to it"

(Spaeth et al., 1995, p. 154). Not only did students not like the course, but professors also tried to avoid teaching it. Professors did not seek tenure by doing research in the area. They disliked preaching on the subject. They did not like teaching a subject in which they had little practical experience. Thus, the Center on Professionalism was created to instruct a vital subject area while overcoming the myriad problems associated with ethics instruction. The model they used was the pervasive method with a creatively taught required course at the beginning of the curriculum and a series of modules subsequently taught throughout the remaining portion of law school (Spaeth et al.).

In analyzing their developmental process several key elements stand out. First, the Center saw the need to develop materials that faculty could use so they would not flounder in the classroom. Second, to do this they convened advisory committees consisting of practicing lawyers, teachers, judges, and non-lawyers to create practical scenarios for use in discussing essential points. As a result, the cases that the committee developed had very practical application directed to the future careers of the students. Third, after development of the materials, they were all test-taught, and a teacher's guide was written to enable all professors to teach the coursework even if they had not participated in the materials development. Spaeth et al. (1995) summarized their thoughts as follows:

> In our view, if the effort is to succeed, it must be the result of an informal but self-conscious partnership of the bench, bar, and academy. But the academy, we believe, should take the lead, for it has resources of time for reflection and scholarship, and it can bring a searching objectivity to the task, beyond the resources of the bench and bar. (p. 172)

The stimulus for other law schools to seriously think about the way they included ethics in their curricula came with a large monetary grant. In December 1990, the W. M. Keck Foundation began its Law and Legal Administration Grant Program. Between 1991 and 1995 the Keck Foundation granted about $5 million in 23 gifts to schools for the principal purpose of improving ethics education methodology. It is very interesting that Metzloff and Wilkins (1995) termed this effort in the early 1990s as an "important commitment to an area of law that was *admittedly still in the developmental stage* [italics added]" (p. 1). In November 1995, deans and legal scholars from sixty law schools gathered at Duke University to share lessons learned. A synopsis of those lessons follows.

Rhode (1995) described how Stanford Law School instituted the pervasive approach to teaching ethics. She cited several important considerations in establishing such a program. "Effective programs generally require a strong institutional commitment to the subject, together with well-structured course materials and methods for evaluating student

performance" (p. 141). She stated that it was because of encouragement from the school's dean in conjunction with the Keck grant that more faculty members subscribed to the effort. Once initiated, an ongoing improvement plan has been critically important as well. Stanford now distributes annotated bibliographies with good teaching materials to aid professors in teaching the subject.

Initiating this approach at Stanford has not been without problems. Needless to say, the pervasive approach only works if professors concur with it. If professors are unwilling to discuss the issue or treat it seriously, students quickly adopt similar attitudes. Thus, poor or soured treatment of the subject could be worse than no treatment at all. Stanford overcomes this by allowing professors to opt out of being part of pervasive ethics although few have chosen to do so. To help in this area, Rhode (1995) said that choice of instructional materials is important.

Faculty at UCLA utilized the Keck grant to develop a pervasive approach also. According to Menkel-Meadow and Sander (1996), faculty members interested in legal ethics formed a working group, and within that group they developed a series of teaching problems. The working group meetings became weekly seminars for professors to experiment with various teaching methods. In essence the working group atmosphere along with the projects undertaken in the group gave faculty the foundation they needed to build their own expertise to the point where they believed they could adequately address the subject in relation to the courses they taught. Bundy (1995) reported the same effect on faculty at the University of California at Berkeley Law School. "A clear benefit of the Keck Project…is the very considerable integration of ethics into the academic lives of our faculty" (Menkel-Meadow & Sander, p. 134).

The UCLA faculty drew several conclusions from their initial efforts to infuse the curriculum with ethics. First, the pervasive approach must not just rely on a little bit of ethics in a lot of courses; there must be a course (best taught in the first year) which includes the foundational concepts and structures of ethics. Bundy (1995) confirmed this point as well from the perspective of the California-Berkeley experience. Second, if more faculty members include ethics in their courses, then the overall effect will be greater. In other words synergy is at work with increased breadth and depth of ethics coverage. Third, it is wise to continue the working group meetings, but "structured leadership and funding help to make these sessions more timely, better organized, and better staffed" (Menkel-Meadow & Sander, 1996, p. 137). Finally, Menkel-Meadow and Sander cited the need for continued leadership and funding from outside academia since the higher education community is "somewhat resistant to change" (p. 138).

Medical schools. Just as one would expect the legal profession to have had ethics instruction in its higher education curricula for quite some time, one would also expect the medical profession to have had the same due to the integral nature of medical practice with certain ethical issues. Indeed, one hears of the Hippocratic Oath and assumes medical students have discussed its implications for centuries. However, most medical schools in the United States did not have ethics in their curricula until the 1970s (Gillon, 1996). Thus, just as law schools have begun fairly recently to incorporate ethics instruction, the same is true for medical schools. And just as some law schools have made notable advances, so have some medical schools.

In July 1983, with the support of a grant from the DeCamp Foundation, a conference was held at Dartmouth College on the subject of including medical ethics in medical school curricula (Culver et al. 1985; Gillon, 1996). In a report of that conference, Culver et al. (authors from eight different medical schools) summarized the state of affairs for the medical school community at that time.

> Formal teaching of ethics in the medical school curriculum has increased greatly during the past 15 years. Yet, schools vary in how much attention they give the subject, and even those that do offer courses vary considerably in the form and content of their curricula…. A medical school dean or curriculum committee surveying the current state of education in medical ethics might conclude that nothing has evolved that might serve as a national standard for adequate instruction. They might also conclude that courses in ethics are fine so long as one or more interested faculty members want to teach them, but that no deeper institutional commitment needs to be made and that no additional resources need to be devoted to the teaching program. (p. 253)

Culver et al. concluded "that the field is now sufficiently developed and the need for the application of ethical knowledge and skills in medicine sufficiently compelling to justify a recommendation that all medical schools require basic instruction in the subject" (p. 253). Going further, Culver et al. suggested several key aspects to such a program, which have also been supported by Weatherall (1995) of the medical school at Oxford University. Teaching of the subject should be interdisciplinary, meaning that clinicians and ethicists, who usually do not have training in each other's fields, should cooperatively teach the subject of medical ethics. The authors outlined what could be called a pervasive method for teaching ethics in a medical school program-required course(s) in the pre-clinical years devoted to ethics and small-group discussion of ethics during the clinical years (especially as applied to specific cases on which medical students are working). In this regard they recommended that ethical consultation be available at teaching hospitals. Finally, they stated that to be effective, ethics instruction must be "rigorous and precise…taught unapologetically…challenging…and measured" (p. 253). To this list

Weatherall added one more essential characteristic. Leadership for instituting and continuing such a program must reside in one person or department of the school so that responsibility for the program is grounded.

Although ethical issues permeate the practice of medicine, the debate as to whether ethics instruction should be a formal part of medical education is not cut and dried. Hafferty and Franks (1994) presented three conflicting perspectives on this issue, which really summarize the thoughts of most authors across the whole spectrum of educational specialties:

> First…past ills in the practice of medicine and the conduct of science can be corrected and future ills avoided only if ethics instruction is accorded a greater formal presence in the medical school curriculum …. Second…while it may be possible to teach the knowledge base of, or information about ethics…one's moral character basically is established prior to entry into medical school and…course materials or even an entire curriculum will not decisively reshape a student's personality or ensure ethical conduct in the future…. Third…while one's ethical posture is most deeply shaped by long-standing personal and family values and beliefs, if it is to be influenced by current work and training environments the most influential vehicle involves informal processes such as "general clinical experience," peer interactions, "ward rounds," and "role models" rather than formal course work in ethics or related topics. (p. 862)

Hafferty and Franks (1994) challenged all three perspectives and say that ethics should not be regarded as a body of knowledge and skills to be used as the situation arises, but rather ethics should be framed as a part of the future physician's professional identity. They proposed several parts to a curriculum. Although formal instruction by itself is not sufficient, it should be done early and continued through the student's tenure in the program. More important is the hidden curriculum that students receive via socialization—"the processes by which people acquire the values and attitudes, the interests, skills, and knowledge—in short, the culture—current in the groups of which they are, or seek to become a member" (p. 865). In other words, formal instruction is important, but even more important is the modeling of ethics by faculty during all aspects of medical training.

Brody (1989) described a program started in the early 1980s to teach medical ethics at Baylor University. Although they offer formal courses as electives for first-year students, the major effort at Baylor is through required case conferences during clinical rotations. The Baylor staff considers three ingredients as crucial in using this method. First, "conferences must be scheduled regularly" (p. 715). Since the conferences deal with real patients, students get an understanding of how ethical issues are handled in real life. Second, "the conferences must focus on the review of cases…that have troubled the students" (p. 716). Third, enough time

must be allocated to adequately talk about the problems raised. The Baylor staff has found it essential to have the active support of the department chairperson in order to make this effort a success.

Ales et al. (1992) reported on the development of a required medical ethics course at Cornell University Medical College. The Cornell course was designed by faculty consensus, that is, 15 physicians from a variety of medical specialty areas met to develop a case-based course which would be taught to second-year students prior to beginning clinical clerkships. The idea was to provide them with a basis "to think critically and systematically about ethical issues faced by practicing physicians" (p. 406). Cases were developed for each medical specialty, and students were given the cases and relevant readings to prepare ahead of time. A six-step method was presented in the course to help students organize their thinking on the cases. Groups of 10 to 15 students would then meet with a faculty expert to discuss the cases. Open and candid discussion contributed to the course receiving high marks for satisfaction on post-course student evaluations.

Business administration schools. Addressing the issue of teaching ethics in business administration schools began in the late 1950s with the publishing of books which encouraged education beyond just vocational training (Gilbert, 1992). Buchholz surveyed initial efforts to do this in 1979 (Fraedrich & Guerts, 1990). This study of business school deans and faculty found that most believed the subject to be important and recommended that courses in values be required. A follow-up study to this initial survey was done in 1987, and the results showed that a third of business schools had a special course in their curriculum that dealt primarily with ethical issues in business. In 1988 the Ethics Resource Center completed another follow-up study which showed that three quarters of the responding schools included ethics somewhere in their curricula (Fraedrich & Guerts, 1990; Gilbert, 1992; McNair & Milam, 1993).

To answer the question of why teach business ethics, Gilbert (1992) pointed to a number of previous works which "conclude that awareness of and clear practical thinking about moral issues in business do not happen spontaneously; hence the need to teach business ethics in business schools" (p. 6). Although ethics has been traditionally taught as theory in philosophy departments, he stressed the need for the subject to be taught with practical application to business in mind and that it should be taught by one with a mastery of philosophical writings as well as familiarity with business. He recommended teaching the subject early in the curriculum so principles could be applied to all functional courses. Fraedrich and Guerts (1990) discussed a number of existing problems with teaching ethics; however, they recommended using a series of constructs in a course on ethics to enable students to understand ethical decision-making. Using such

constructs will help them understand how they can bring ethics into the business setting.

Not surprisingly, since Bok (1986) advocated ethics education while president of Harvard, the Harvard Business School has led the way in establishing such a program. Piper et al. (1993) described a five-year project which began in 1987 to bring ethics to an already intense curriculum at Harvard. Harvard designated a core group of professors to develop the curriculum. After looking at three options (a required course, elective courses, or distribution of ethical topics across existing courses), they decided all three should make up an integrated curriculum. Harvard requires an introductory course of all first-year students, and the focus is to discuss the issue up front to insure it is recognized as a key concept to be dealt with throughout the student's entire tenure in the program. In addition, by design, each professor addresses applicable ethical principles in all of the other courses taught, and electives are available for those interested. Integrating all three course options capitalizes on the strengths of each option while minimizing the weaknesses of any one separately.

However, curriculum does not make the program successful by itself. Piper et al. (1993) pointed to three primary reasons for the successful implementation of the ethics program at Harvard. First, it had the support of the leadership of the university and the business school. Second, it had the support of the school faculty. Third, Harvard pursued faculty training and development. In summing up the Harvard experience, Piper et al. stated,

> The evidence is clear: our students are not the problem. Almost all of them are eager to talk about purpose and principle, to explore the systemic causes and consequences of unethical behavior, to study outstanding leaders and organizations as they grapple with ethical dilemmas…. The problem rests with the failure of education to encourage and assist students in their search for purpose and worth. (pp. 148-149)

When discussing Harvard's program to incorporate ethics into their curriculum, another factor should be added as a contributor to its establishment. In 1987 Harvard Business School received a gift of $20 million from former Securities and Exchange Commission Chairman, John Shad, to bring ethics education into the curriculum, and alumni contributed another $10 million to this effort (Bryne, 1992). This enabled the faculty to devote time and effort to the task of developing courses and 35 case studies used in the program. Jones (1989) said that Harvard's prestige among business schools has led to other schools adopting or considering similar actions, and he pointed to MIT and Georgia Tech as specific examples.

Within the business administration discipline, McNair and Milam (1993) conducted a more focused survey of over 200 faculty members in the accounting field on the subject of ethics education as related to

accounting. The study revealed several important conclusions. First, they found that nearly 70 percent of the survey participants thought there was a need for more coverage of ethics even though over 77 percent of the respondents said they already gave some course time to the subject. The authors thought this was a first step to improvement. Additionally, "communication between faculty and administrators could serve to stimulate interest further" (McNair & Milam, 1993, p. 801).

McNair and Milam (1993) documented some problems needing resolution. The highest-ranking obstacle according to faculty members surveyed is time—time to include ethics in the curriculum. Second, more materials need to be developed although some professional accounting organizations and companies have produced cases and videos. Third, faculty members need training in the proper method of using cases in the classroom. To resolve these problems, the authors recommend one key ingredient—administrative interest. The survey indicated that only 35 percent of the schools' hierarchies encouraged including ethics in accounting coursework. Over 95 percent of the participants said there was little reward for incorporating ethics into courses. "This lack of encouragement from administrators and failure to include [it] in the reward structure are two additional areas that can be addressed" (p. 806).

Public administration schools. Closely related to business administration is public administration, and such schools have also been involved in the effort to institute ethics in their curricula. According to Hejka-Ekins (1988) and Menzel (1997), the increasing prevalence of political scandals beginning with Watergate has focused attention on the issue of ethics education within the public administration field. A series of surveys done among schools accredited by the National Association of Schools of Public Affairs and Administration (NASPAA) tracked an interesting trend. A 1978 study showed that 43.3 percent of NASPAA schools offered an ethics course. In 1980 this figure stood at 21.1 percent. A 1986 survey by Hejka-Ekins (1988) showed that 31.4 percent of NASPAA schools were teaching ethics, and this statistic led her to state, "It seems reasonable to say that the development of a separate course in administrative ethics has remained a low priority among NASPAA schools over the last decade" (p. 886). In this study Hejka-Ekins used a questionnaire to initiate further contact with faculty members in those schools that offered an ethics course, and she found that "most courses had been incorporated into the curriculum…due to the persistent efforts of one or more individuals who were able to convince the faculty of the need" (p. 886).

Since that study, NASPAA "incorporated language into its curriculum standards that called for public administration programs to 'enhance the student's values, knowledge, and skills to act ethically and effectively'" in

the late 1980s (Menzel, 1997, p. 224). Since then, many additional public administration schools adopted ethics courses into their curricula, and as previously reported in this paper; it appears that the courses are having an impact on graduates.

Other academic disciplines. Authors from other academic disciplines have made important, but isolated, contributions to the literature on the subject of teaching ethics (e.g., Allegretti & Frederick, 1995, and McMinn, 1988 in the area of psychology; Bivins, 1993 in journalism; McCaleb & Dean, 1987 in communication; Patterson & Vitello, 1993 in health education; and Stotsky, 1992 in English composition). They concurred that ethics instruction should be an important part of the curriculum; however, most of their work is aimed at curricular objectives or pedagogy for particular courses rather than at broader issues of incorporating ethics into a whole curriculum.

Concerning departments or schools of education, Strike (1990), who has written rather extensively on the subject of ethics instruction within the higher education community, is one of the few who proposes a deliberate, planned school-wide ethics curriculum. He established the need for such by describing education as a profession, and as such, it must be "capable of sustained ethical behavior apart from extensive external monitoring" (p. 47). He added that "ethical conduct is thought to be largely a product of training. The norms and standards of the profession are supposed to be internalized during formal education of the professional" (p. 47).

An essential aspect of Strike's (1990) position is that ethics must be part of the entire curriculum. "The crucial thing about instruction in professional ethics is that it permeate the curriculum for practitioners. If it does not, those unfortunate enough to have to teach courses in professional ethics will be voices crying in the wilderness" (p. 52). He made several recommendations about such a curriculum for training educators in the area of professional ethics. First, "some values and moral concepts…will be internal to subject matter and are best acquired in the process of learning subject matter…. Second, there may be moral concepts that are implicit in what students learn in teacher education courses" (p. 51). In other words, dealing with ethical problems in education should be discussed to some degree during courses such as pedagogy and educational psychology. Finally, "there is a significant role for direct instruction in professional ethics" (p. 52).

Synopsis of lessons from non-aviation curricular areas. At this point, it is useful to summarize some key points that are common to the research done by all the academic schools above in order to draw together the lessons learned from these efforts to establish ethics as an essential part of higher education

curricula. These lessons serve as the foundation of hypotheses for further analysis concerning current efforts to incorporate ethics instruction in aviation management curricula.

Lesson 1. Many people and organizations from a cross-section of society in general, professional organizations, and academia are calling for ethics to be part of college curricula. The reasons vary; nevertheless, the opposite viewpoint that ethics should not be taught is rarely, if ever, raised and supported by writers on this subject. Hypothesis: people in the aviation community believe that ethics should be part of college aviation administration curricula, and few people voice the opposite opinion.

Lesson 2. The faculty members and administrators most closely associated with programs that have attempted to incorporate ethics in their curricula conclude that support from higher levels of a college's administration is an important factor in the success of the undertaking. Support can be most readily seen in resources for faculty training and materials production and in openly awarding recognition to those involved with the curricular development of the program. Hypothesis: those aviation programs that have already included ethics in their curricula are more likely to have higher-level administrative support for doing so as seen in resources for ethics instruction and in recognition of those involved with it.

Lesson 3. Even in the absence of higher-level support, leadership from the department head can result in an effective ethics education component in the curriculum. Additionally, the enthusiastic efforts of one professor or a very small group of faculty members has led to the initiation of viable ethics instruction at some colleges and universities. Hypothesis: those aviation departments that already have ethics as part of their curriculum are more likely to have department head support for it or at least one aviation professor who has led efforts to include ethics in the curricula.

Lesson 4. Multiple authors across disciplines conclude that ethics is best taught by the pervasive method. The pervasive method means that ethics is a required part of the curriculum, and it appears in all related coursework not just as an adjunct that is taught as separate subject matter unrelated to the other coursework required for the degree. When ethics is best included in an academic program, it is not just an introductory course taught from outside the department. Hypothesis: those aviation departments that do the best job of including ethics in their curricula are those that use the pervasive method.

Lesson 5. Closely related to the above points is that the whole faculty should be involved in the teaching and modeling of ethics across the spectrum of course offerings; it should not just be relegated to one or two specialists outside, or even within, the department. Faculty members internal to specific departments would be more comfortable and more

effective in teaching ethics if they have received some training in this field. Hypothesis: those aviation management departments that desire to do the best job of incorporating ethics in their curricula are more likely to have many faculty members teach the subject internally and are more likely to provide training to their faculty to accomplish this.

Lesson 6. A number of individual universities and/or academic disciplines have received impetus to begin a program of ethics instruction from sources outside the university organization. Specifically, outside grants have provided monetary resources to get started, and academic accrediting agencies have provided impetus by requiring ethics-related goals in order to achieve accreditation. The involvement of practitioners from related industries or professions has proven to be a good support network in several fields in the form of help in course material development. Hypothesis: those aviation programs that already incorporate ethics in their curricula are more likely to have been influenced by outside agencies in the form of supporting resources or accreditation requirements.

Lesson 7. Modeling of ethical principles by faculty and staff is an essential ingredient of any effort to teach ethics. Hypothesis: those aviation departments that want to be most effective in their presentation of ethics will be those in which faculty and staff members model the ethical principles they are teaching.

Lesson 8. Besides lack of higher-level administrative support, the key obstacles to incorporating ethics are lack of time for ethics instruction in an already-packed curriculum, lack of good course materials, and lack of trained faculty. Hypothesis: the principal obstacles that aviation departments face when initiating ethics education in their curricula are lack of time in an already-packed curriculum, lack of good course materials, and lack of trained faculty.

A rather extensive review of the literature has failed to find any writings on the subject of incorporating ethics instruction in higher education programs in aviation management. Is ethics being taught in these programs? Have faculty members and administrators already seen the need for such instruction? What are they doing now? These questions and others will be investigated in Parts Two and Three of this study using the summary points and hypotheses above as a guide. However, the absence of any writings on the subject would justify the initial thought that not much has been done to date. Thus, it would appear that including ethics instruction in aviation administration programs could be an instance where educational change is needed.

The Concept of Educational Change

As discussed above, various academic schools have initiated new programs to incorporate ethics into their curricula. Some of the methodology has been covered as well as discussions of hindrances, plans of action, and important considerations necessary to make such programs successful. In all of these cases, educational change was an underlying concept. In each case, an individual, a group of individuals, or a whole department saw a need to change an established curriculum to include something new and different. Although this present study is not a study on educational change per se, it would be very beneficial at this point to briefly look at some theory regarding the subject as something that would inform the present research effort. As nothing has been published about ethics instruction in aviation management curricula, such efforts might be in their infancy. Thus, concepts associated with educational change may provide valuable insight into these beginning efforts.

Fullan and Stiegelbauer (1991) devised a four-step model for educational change, which is useful in plotting the progress of such change as it occurs. The model is shown in Figure 2. The initiation phase includes everything done until a decision is made to change something in an educational program. The implementation phase covers the initial efforts to use the new changes, and usually includes the first two to three years of experience after adoption. Continuation refers to everything done after implementation as a new change becomes part of the routine program. The term, outcome, describes the results of how the new change has improved the educational program. As Fullan and Stiegelbauer indicated, this is a simplified model. Often changes bounce back and forth between phases as additional changes to the original changes are initiated to improve the program even further.

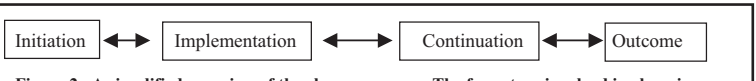

Figure 2. A simplified overview of the change process. The four steps involved in changing educational programs.

The ethics instruction programs just described above fall into the Fullan and Stiegelbauer model somewhere. Since the first phase is probably the most crucial in educational change (i.e., if one can not get past this stage, one will never get any further), it is useful to look at this phase briefly. The incorporation of ethics in an educational curriculum must begin here. If it can not get past the hurdles of phase one, ethics will never become part of

the curriculum. If someone or some department can initiate the project in the first place, then according to the success stories referenced above, such a program stands a more favorable chance of successful implementation.

Factors influencing educational change. Fullan and Stiegelbauer (1991) suggested a list of eight factors, which affect initiation of educational change. Although they applied these eight factors to the K-12 educational environment, seven of them can be readily applied to the higher education level as well. First, they cited existence and quality of innovations. They stated that there is no shortage of innovations; the question becomes one of assessing the quality of innovations. "The lessons of the past have made people in education more careful in taking on unproven new change programs; and limited resources force them to be even more selective" (p. 52). Applying this to the subject of this study, one would say that since nothing has been published on successful adoption of ethics teaching in aviation management programs, departments would be hesitant to initiate and fund such a change to their program. Ethics instruction might be regarded as a short-term fad without long-term merit, or it might be regarded as too expensive to initiate.

The second factor mentioned by Fullan and Stiegelbauer (1991) is "the selectivity that occurs as a result of differential access to information" (p. 53). In describing this, they said that some educators are less traveled than others. For that reason they are not familiar with innovations that are being initiated. Related to this factor, this author would add that those educators who have spent more time in the aviation industry would probably have encountered more actual ethical dilemmas, and thus, would be more aware of the ethical problems in the industry from personal experience. This could be a motivating factor in wanting to do something about the problem.

"Initiation of change never occurs without an advocate" (Fullan & Stiegelbauer, 1991, p. 54). Thus, they announced the third factor, and they identified one of the most powerful advocates as the chief administrator. Such an administrator may be hard to identify by title at each college or university. It may be the university president; it might be a dean; it may be the department head. All of these could easily fill this role, but the point remains that an individual in one of these positions can be a strong advocate for a particular change, or that same individual can be a powerful barrier to the change ever happening. Certainly, adoption of an ethics curriculum would be easier if a chief administrator supports such a change.

A fourth factor influencing change is teacher advocacy (Fullan & Stiegelbauer, 1991). Thus, individual professors who strongly endorse an issue may unilaterally make changes in the parts of the curriculum over which they have authority. At the higher education level, individually-

initiated change is even more readily possible than at the K-12 level because of academic freedom, tenure, and individual control over course content. Thus, a professor, who sees the need for ethics instruction, can initiate such instruction in the courses he or she teaches. If successful, this professor could be a catalyst for incorporating ethics instruction on a wider basis within that professor's department.

Fullan and Stiegelbauer (1991) stated that a fifth factor affecting initiation of change is an external change agent, any advocate for change that is outside the academic department. For instance, many universities offering aviation management programs have industrial advisory committees which keep the university updated with industry trends and needs. Such a committee could provide feedback to the university staff on the need for graduates with some knowledge of ethical decision-making. Another example would be a company or professional organization, which would provide a monetary grant to initiate a program to incorporate ethics into the curriculum.

A sixth factor is new policy and funds. On the K-12 level Fullan and Stiegelbauer (1991) inferred that this factor encompasses federal and state policies and funds associated with these changes. However, on the collegiate level, this could easily refer to policies of accrediting bodies. If such accrediting bodies required some instruction in ethics in order for university aviation administration programs to be accredited, ethics would have to be taught in some form. Although mandating such courses in this manner might create initial opposition, it might also create an atmosphere in which departments endeavored to do the best they could to successfully incorporate ethics into their curricula.

The final factor raised by Fullan and Stiegelbauer (1991) is that schools make decisions to adopt change from either a problem-solving or bureaucratic orientation. Schools looking at change from the problem-solving perspective will regard additional funds as a chance to solve local problems and as a stimulus to improve present programs. Those looking at change from the bureaucratic perspective regard change as a method to receive additional resources to be used for other purposes or as a way of receiving recognition for innovation. Summarizing the work of other authors, Fullan and Stiegelbauer said that schools generally follow the bureaucratic mold. Specifically, schools adopt change more readily when innovations add resources without requiring behavioral change, ease external pressure for change, and receive approval from "peer elites" (p. 60). "Bureaucratically speaking, then, the political and symbolic value of initiation of change for schools is often of greater significance than the educational merit and the time and cost necessary for implementation follow-through" (p. 61). What this statement means for initiation of ethics

instruction can be summarized by simply saying that the more extensive the curricular change, the less likely it is to receive support. A small cosmetic change involving another department offering an ethics course to assuage some external requirement will receive support long before an aviation department is likely to approve a complete curricular change that involves teaching ethics pervasively.

Synopsis of hypotheses concerning educational change. These seven factors raised by Fullan and Stiegelbauer (1991) add a framework to guide research on the initiation of change in any curricula. These factors were considered in the design of this research project. It should be noted that some of these factors overlap with and complement lessons learned from other academic areas. This is expected since the discussion of lessons from other academic areas was founded on educational changes in the curricula of these other subject areas regarding their initiation of ethics instruction. The following summarized list of hypotheses for each factor mentioned by Fullan and Stiegelbauer (1991) serve as items for evaluation in Parts Two and Three of this study.

Factor 1. Aviation departments hesitate to initiate and fund ethics instruction programs because little has been published on the subject within the aviation academic community.

Factor 2. Aviation departments that currently incorporate ethics in their curricula have department heads with greater experience in the aviation industry.

Factor 3. Aviation management departments that currently include ethics in their curricula tend to have department heads that support such efforts.

Factor 4. Those aviation programs that have ethics as part of their curricula tend to have at least one professor with a demonstrated interest in teaching ethics.

Factor 5. Aviation departments that currently include ethics in their undergraduate programs tend to have been influenced by organizations outside the university in the form of requests to include ethics in the curriculum or resources to include ethics.

Factor 6. Aviation departments that presently include ethics in the plans of study of their students are more apt to have accreditation standards requiring ethics to be part of their curricula than those departments without such standards.

Factor 7. The process of initiating change to include ethics in aviation management curricula will be slow, proceeding step-by-step rather than going from no ethics in the curriculum to the pervasive inclusion of ethics in a very short time span. Defining slow or short time span is arbitrary, but as seen in the literature review such efforts to pervasively bring ethics into

the curricula of other academic areas took several years to accomplish. The same would be expected in aviation management curricula.

CONCLUSION

The importance of teaching ethics to aviation management students has been demonstrated. Anecdotal evidence has been provided to show that individuals and organizations in the aviation industry have made ethical errors, which have led to a range of results from illegal financial gain to the endangerment of human lives. Teaching ethics at the higher education level is justified for two reasons. First, logic says that one teaches ethics whether or not ethics is formally taught; saying nothing on the subject transmits a loud message that it is not important. Second, there is empirical evidence that ethics can be effectively taught to college students.

Since there has been nothing published on the subject of teaching ethics in aviation management curricula, the current status of the inclusion of ethics in such curricula is unknown. To investigate this subject more, a preliminary review of literature was conducted to discover how other academic curricular areas approach the matter of ethics instruction. Additionally, the concept of educational change was studied to provide background information on what it takes to introduce new educational concepts into a curriculum. This literature review yielded a number of lessons and hypotheses which can now be used as the basis for the research done in Parts Two and Three of this study on ethics education in university aviation management programs. The results will be documented in subsequent reports.

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