A DESCRIPTIVE ANALYSIS OF PARTNERSHIP, ALLIANCE, CONSORTIUM, AND ARTICULATION AGREEMENTS CURRENTLY EXISTING IN POST-SECONDARY AVIATION EDUCATION PROGRAMS

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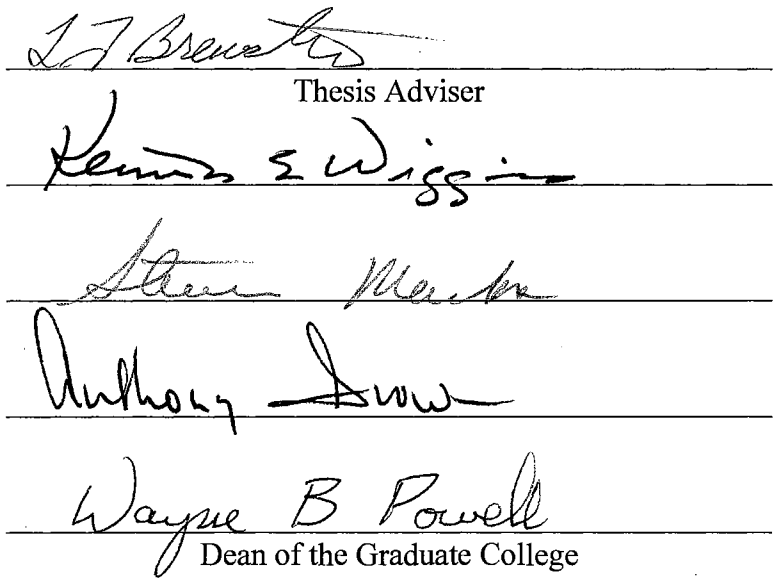

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CHAPTER I

INTRODUCTION

Background of the Study

Our nation's capabilities in aviation related activities have allowed us to meet significant challenges in the past. For example, the air superiority of our military forces and its domestic support systems were instrumental in our success in both World Wars and the cold war as well. Bilstein (1989) cites not only our nation's military air power as being critical to our survival, but points out that our peacetime air and space endeavors such as the moon race and air transportation system are equally important. Recognizing the important role aviation plays not only in our nation's defense, but in our everyday life as well, we begin our introduction to the study by providing specific examples of the importance of education in general and aviation education in particular in preparing our nation to meet future important challenges.

Within the last few decades Americans have become conscious of the interrelatedness of their lives with the rest of the world. Daily examples of this "global economy" range from the foreign products we use to domestic corporations doing increasing international business to an increase of vacation travel outside the U. S.

Naisbitt and Aburdene (1990) identified the global economy as one of the megatrends for the 21st century:

> We are in an unprecedented period of accelerated change, perhaps the most breathtaking of which is the swiftness of our rush to all the world's becoming a single economy. Already it may be said that there is no such thing as a U.S. economy, so enmeshed is it in all the other economies of the world (p. 19).

This rapid pace of the world moving toward a single economy is supported by the rate of technological change, sometimes referred to as the information "explosion." The speed of technologically related change in our society can be illustrated by "the fact that there are some 2.7 million living Americans who conceivably could have witnessed the Wright brothers' lift-off at KittyHawk" (Rachal, 1989, p. 3). Within a short span of time, electronic, communication, and information technologies have changed society as a whole and affected how people go about their daily lives. From shopping by computer to making telephone calls from one's car to faxing a request to the local radio station, everyday life has been irrevocably influenced by technology. Beder (1987) further emphasized the impact of technological change and the global economy from a social and cultural standpoint by stating that we have entered a world economy in which "individuals become 'linked' into an international order . . . by virtue of economic and material interdependence" (p. 106).

Almost everyone agrees that our success as a nation depends, to a large extent, upon our ability to compete within this global economy. The need to be competitive in the world market leads to further technological sophistication (Merriam and Caffarella, 1991). A good example of this intense need to compete internationally from a political

viewpoint was the race to the moon. Bilstein (1989) made an interesting observation of this accomplishment by stating,

> Apollo was a successful effort and an historic achievement. While issues of American and Soviet competition for global influence colored the origins of the program and the triumphant voyage of Apollo 11, the new awareness of the fragile existence of the Earth within our universe also fostered a promising spirit of international cooperation (p. 149).

Regardless of the measurement of our success, whether it be economical, social, political, military, or otherwise, our ability to compete globally does not just mean a better job or a higher standard of living. Realistically, this ability or inability represents a threat not only to our right to the basic freedoms we sometimes take for granted, but ultimately our actual survival.

The logical question now becomes, "How do we prepare ourselves, both as an individual and as a nation, to compete in this global environment?" Marien (1983) stated, "The most important learning needs are not among children, but among adults--especially our political, intellectual, scientific, corporate, and religious leaders--the decision-makers who will be shaping the Information Society over the next two decades" (p. 21). Indeed, some would argue that education is the single most important contributor to our international strength and leadership. D. Boren (personal communication, October 24, 1996), President, University of Oklahoma, emphasized this point in an address at Rogers University. He stated,

> Education cannot be second. . . The very linchpin, the very determining factor as we face the new century, is how well we educate our nation. . . There has never been a time when public education has been more important. . . Education is lifelong. . . We have to be constantly learning. It is a matter of economic survival.

Unfortunately, stating that the foundation of our nation's success in any arena is education is simplistic in nature and does not recognize some of the challenges we face in educating our citizens. Powers (1984) assessed our educational system by stating,

> In the spring of 1983 President Reagan was told by the National Commission of Excellence in Education that 'if an unfriendly power had attempted to impose on America the mediocre educational performance that exists today, we might have viewed it as an act of war.' The commission, appointed eighteen months earlier by Education Secretary T. H. Bell, also noted that 'for the first time in the history of our country, the educational skills of one generation will not surpass, will not equal, will not even approach those of their parents' (p. 1).

This emphasizes the perpetual need to search for more effective and efficient methods of meeting the educational needs of our nation. For example, Dr. D. Pierce (personal communication, October 25, 1996), Executive Director, American Association of Community Colleges, addressed the 19th Conference of the Mississippi River and Gulf Region of the American Technical Education Association. While discussing the need to make our programs of higher education more accessible and efficient, he emphasized the importance of sharing resources by stating, "The focus should be on collaboration instead of competition."

One of the most important indicators of our success internationally is the aviation industry. Bilstein (1989) emphasizes that one of the biggest factors in our ability to recover from Pearl Harbor was our aviation industry's ability to out-design and out-produce the enemy. The President's intervention in the American Airlines pilots' strike on February 15, 1997, and his subsequent order for them to return to work, highlights the importance of the industry from an economic standpoint. Socially, the impact of aviation has been felt in all fields of mankind's endeavors and politically, aviation has helped to

make our country one of the most powerful nations of the world and to place it in a position of world leadership (Kane, 1996). When one examines its importance militarily, economically, socially, or politically, it becomes obvious that our progress in this area is critical in every way. The Los Angeles Times (Tulsa World, December, 16, 1996) said it another way when discussing the recent announcement of the merger of the Boeing Company and McDonnell Douglas Corporation:

> It (the merger) recognizes that U.S. leadership in this field is vital for maintaining high-skilled jobs and the U.S. technology and military edge. But because the competition is global, with government-backed rivals, large and financially strong U.S. standard bearers are required (p. 1).

It must be concluded then that this industry must continue to grow, both from a technical and non-technical standpoint. Most leaders will agree that the foundation of this growth and strength is manifested in our system of education and its delivery systems. An education delivery system is defined as any set of interrelated ideas, principles, rules, procedures, laws, or the like, which exists for the purpose of facilitating the creation and implementation of various educational programs. Aviation education delivery systems currently exist in many forms and in many different types of organizations. For example, various programs of aviation education are available in private, public, and governmental organizations. They can be found in secondary and post-secondary schools which could be either public or private. They are provided by the government through the Federal Aviation Administration (FAA) or the military. Several privately owned companies also offer different types of aviation education. However, this study focuses on aviation education delivery systems in public or private post-secondary institutions.

When we relate the importance of education to the relative importance of the aviation industry to our nation, we can reason deductively that aviation education and its delivery systems also become vitally important. Also, "the aeronautical/aerospace sciences are evolving quickly and have become technologically complex, highly-specialized, and multi-faceted, requiring advanced training" (Johnson & Lehrer, 1995, p. 245). Consequently, this study regarding the effectiveness of aviation education delivery systems assumes an importance which cannot be lightly regarded. This study will be useful not only to the industry as a whole, which will obviously be one of the benefactors, but specifically to professional aviation educators as well. Generally, anyone interested in developing more effective types of organizations to achieve aviation education delivery system objectives will benefit from this study.

Problem

A review of the related literature discussed in Chapter II reveals that a concept of an education delivery system growing more popular in post-secondary education is the cooperative agreement. These agreements are formalized in writing and are made with other education organizations, businesses, government, and community groups. They range in discipline and purpose from engineering involving research and development activities, to business for economic development, to education for curriculum enhancement. Specifically, these types of cooperative agreements exist in the form of a partnership, alliance, consortium or articulation agreement. The general purpose of such an agreement is to share resources, achieve common goals, and foster educational

achievement, improvement, and reform. A more detailed definition of each type of agreement is given under Definitions.

Although the literature revealed the presence of numerous cooperative agreements involving several different disciplines in post-secondary institutions, only two documents were found describing such agreements involving aviation education. This lack of information regarding cooperative agreements involving aviation education in post-secondary institutions precipitates the following questions: 1) To what extent do cooperative agreements currently exist in aviation education? 2) Where are they located and what is their purpose? 3) Are they successful in achieving their objectives? and 4) What are their advantages and disadvantages? Additionally, given the importance of aviation education as outlined above and the responsibility incumbent upon educators to continuously strive to improve delivery systems, the answers to these questions were deemed both important and timely.

Purpose

This study comprised an analysis and evaluation of the various partnership, alliance, consortium, and articulation agreements involving aviation education programs currently existing between post-secondary education institutions and other education institutions. The purposes of the agreements were determined and the respective advantages and disadvantages of this type of aviation education delivery system as perceived by the members themselves were summarized. Recommendations regarding future applications were also formulated.

Objectives

There were four objectives of the study. The first objective was to determine which institutional members of the University Aviation Association (UAA) participate in partnership, alliance, consortium, or articulation agreements with other education institutions. The UAA was chosen because of its national reputation in aviation education and the size of its membership. For example, the FAA recently requested the UAA be represented on a special task force appointed at the request of Congress to study hiring requirements for airline pilots. The UAA was the only organization on the task force representing the aviation training and education profession and represents 108 institutions involved in post-secondary aviation education.

A second objective was to determine the membership and purpose of the respective partnership, alliance, consortium, or articulation agreement(s) to which each institution belongs. Both membership and purpose will vary according to the needs of the institutions involved. For example, one institution may wish to expand their course offerings, but may not have the physical facilities. Another institution may have the physical facilities available and have a desire for more efficient use of them. A cooperative agreement could fill both needs.

Thirdly, the study summarized the advantages and disadvantages of the respective partnership, alliance, consortium, or articulation agreement(s) as perceived by the various members themselves. The parties to the agreement are in the best position to evaluate its effectiveness.

The fourth and final objective was to make appropriate recommendations with respect to the future use of such agreements in the enhancement of existing or the development of new aviation education programs. For example, industry needs which dictate education and training objectives may be met more cost effectively by more efficient use of facilities and the sharing of resources.

Assumptions

There were two major assumptions. First, it was assumed that the UAA was the best source of information for this study. There are 108 schools, colleges, and universities holding Institutional Membership in the UAA representing 41 states, the District of Columbia, Canada, Puerto Rico, and Brazil. The UAA membership is composed of the majority of the well known and successful post-secondary aviation programs (See Appendix E) and no other record could be located listing comparable institutions which are not members of UAA. Additional information concerning the UAA can be found under Definitions.

The second assumption was that a descriptive survey of the members themselves will provide accurate information concerning their respective partnerships, alliances, consortia, or articulation agreements. The staff, faculty, and administrators involved in the administration of each cooperative agreement will have the most accurate knowledge concerning each agreement.

Limitations

Some limitations pertaining to this particular study were: 1) personnel representing the various schools, colleges, and universities involved in the study may have been limited in the amount of time they had to devote to providing the necessary information; 2) some of the administrators and directors of the various programs may have considered the information requested to be proprietary in nature and may have been reluctant to furnish complete information; and 3) since several questions required written answers, the ability to express oneself in writing, space limitations, and possible misinterpretations were also possible limitations.

Definitions

The different types of cooperative agreements included in this study were the partnership, alliance, consortium, and articulation agreements. The specific definition of each type of agreement as used in this document is that definition published by the Educational Resources Information Center (ERIC). 1

The partnership is a collaborative arrangement and endeavor between and among schools and other entities designed to share resources, achieve common goals, and foster educational achievement, improvement and reform. "Other entities" could include

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Footnote 1: These terms have been defined by the Office of Educational Research and Improvement (OERI), U.S. Department of Education, in its Thesaurus of ERIC Descriptors, 13th ed. (1995).

corporate enterprises, community agencies, student/parent/citizen groups, colleges, other schools, and/or individuals. ERIC states that the above definition is synonymous for "academic alliances." A consortium is an association of institutions (usually higher education or libraries) that share resources and/or students to strengthen programs or services and to reduce costs.

An articulation agreement is the systematic coordination of course and/or program content within and between educational institutions to facilitate the continuous and efficient progress of students from grade to grade, school to school, and from school to the working world.

Synthesizing the above definitions and limiting them to aviation education, the phrase, "partnership, alliance, consortium, or articulation agreement" as used in this study, means: A formal agreement of post-secondary education institutions designed to share resources, achieve common goals, and foster educational achievement, improvement, and reform in their respective aviation education programs. "Formal" means that the goals and objectives, along with the responsibilities of each member of the agreement, are stated in writing and signed by the member institutions.

The University Aviation Association is a national organization involved in the development and advancement of aviation education. It is composed primarily of regionally accredited, technical or associate and baccalaureate level institutions (Institutional Membership) with an existing or planned aviation program or course offerings. Professional, Associate, Corporate, Honorary, and Fellow memberships are also available, but were not be included in this study.

Scope

This study was limited to data accumulated from the 108 post-secondary educational institutions holding Institutional Memberships in the UAA as of December, 1996. Each member was requested by a mailed questionnaire to furnish information concerning all types of cooperative agreements which they have signed with other education institutions. Information concerning the types of agreements indicated the extent to which each type of agreement existed within the institutions responding. The date the agreement was signed was used to detect trends in the demographics such as, the magnitude and age of the agreements. The respondents were requested to list the advantages and disadvantages of each agreement which facilitated conclusions concerning the effectiveness of the agreements. The respondents were also requested to specify the feature or features they considered essential in such agreements. This information will be of importance to others considering the creation of similar agreements. A review of the literature suggested that the above questions were important in determining the number of each type of cooperative agreement, their purpose, and effectiveness.

There was no attempt to determine why some respondents were not a member of a cooperative agreement. Also, the conditions or reasons which motivated the development of a cooperative agreement were not analyzed. Additional studies would be required to determine this information.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

Introduction

The review of the related literature was conducted primarily to determine answers to the following questions: 1) Where did the first cooperative agreements exist in post-secondary education institutions? 2) What were the purposes of these early agreements and were they successful in accomplishing their objectives? 3) What are some other examples of successful agreements? 4) What are some advantages and disadvantages of such agreements? and 5) What types of cooperative agreements involving aviation education currently exist in post-secondary institutions and to what degree are they successful in achieving their objectives?

The types of cooperative agreements under study were partnership, alliance, consortium, and articulation agreements existing between institutions offering post-secondary aviation education programs. The discussion will begin with an historical overview of where, why, and how the partnership, alliance, consortium, and articulation agreements originated in post-secondary education institutions. Since these types of cooperative agreements began in the university-business environment, it follows that a discussion regarding the history of such agreements will highlight the university-business

relationship. Although the thrust of this study focused upon cooperative agreements between education institutions, much about the structure, implementation, and administration of the university-business agreements can be applied to other similar types of agreements in the education environment. This review will also include a summary of the development and expanded uses of such agreements from their inception to present.

The next section will discuss some of the theoretical reasoning underlying the use of these types of agreements in post-secondary education programs as described by various well known scholars. This will include many of the expected advantages and disadvantages along with some typical examples of their application.

Some of the more successful agreements will be cited in the next section. The membership and purpose of the respective collaborative agreement will be given along with a brief synopsis of their accomplishments. This will illustrate their wide range of application.

The literature directly related to such agreements in post-secondary aviation education programs will then be discussed. The researcher was unable to locate any significant amount of directly related literature which further emphasizes the importance of this study. Finally, the significant findings in the review of related literature will be summarized to show the advantages and disadvantages of these types of agreements and their wide range of application.

History

A review of the related literature revealed that the idea of a collaborative effort emerged in the university-business environment as early as 1925 with the Wisconsin Alumni Research Foundation. The chief purpose was to fund and support different types of scientific and technical research. After several successful examples of the university-business partnerships, some of which are described below, the government began to provide financial support through various partnerships to aid our ability to compete in the cold war. Consequently, the university-business partnership experienced considerable growth during the 1980s. Today almost any college or university will have more than one of these types of partnerships. Although these types of cooperative agreements involve universities and business, they are similar to the various types of cooperative agreements which were the subject of this study. Specifically, they are similar to the partnership, alliance, consortium, and articulation agreements currently existing in post-secondary aviation programs in that they represent a joint effort to share resources and achieve mutually beneficial goals.

One of the earliest examples of a university-business partnership was the formulation of the Wisconsin Alumni Research Foundation (WARF) in 1925 (Bowie, 1994). This Foundation was a nonprofit organization and technically separate from the university. Consequently, it could receive private funds from business. The Foundation was formed because the University of Wisconsin Board of Regents voted not to accept any funds from private business or from private philanthropic organizations. WARF also became the owner of patents of products invented by faculty working in cooperation with

industry. The Foundation was highly successful in that 1,702 inventions were disclosed through the Foundation during its first 50 years. WARF represents an example of a foundation independent of the university although closely allied with it.

Another early example of university-business partnerships was found at the Massachusetts Institute of Technology (MIT), where the notion of such partnerships has enjoyed widespread institutional support (Bowie, 1994). MIT was founded in 1862 as an alternative to the classical education of the time. By the turn of the century, the university had developed distinguished chemistry and electrical engineering laboratories. Most of this success was attributed to the cooperative relationships developed with industry which resulted in large financial donations to the university. MIT's plan attracted wide attention and the idea of university-business cooperative relationships caught on quickly at universities with a heavy emphasis in technical training. Cooperative relationships during this time were established at the universities of Rochester, Pittsburgh, Cincinnati, Dayton, Akron, and Lehigh as well as at Case Institute and the Drexel Institute of Technology (Noble, 1977).

Although the formulation of a university-business partnership generally resulted in increased funds to the university for research, this additional source of funds did not come without problems. Faculty expressed concerns that this arrangement would skew research away from basic research to applied research and more ominously from basic research to specific product development. MIT's early successful partnership was criticized on just these grounds (Bowie, 1994). Critics complained that laboratory staff were more like commercial consultants than members of an educational research center. Restrictions on publication and the suppression of research are concerns of many critics of contemporary

university-business partnerships. Finally, there were difficulties in the consistency of funding. Most of the contracts were signed on a year-to-year basis. When economic conditions worsened, the number of contracts decreased. As a result, it was sometimes difficult to attract and even more difficult to retain the best people.

Another example of successful university-business relationships is the research/industrial park. This concept has become popular and captured the imaginations of governors, state economic development officers, local government officials, and the media. When they are successful, these glamour activities are more visible than conventional cooperative research or educational programs and more profitable for the institutions involved. Their effects in promoting regional economic development also tend to be direct and apparent. Research/industrial parks frequently are situated near major university campuses so that the businesses that locate in them can take advantage of university resources.

In 1951, Stanford University established the prototype research park, which now houses 80 companies on 660 acres. Establishment of other parks has been led by governors and other public officials and business leaders, as well as by college and university administrators, often working cooperatively. Another well known example of the research/industrial park is the Research Triangle Park established in 1963. This project resulted from a collaboration of government, land developers, and university leaders representing the University of North Carolina at Chapel Hill, North Carolina State University, and Duke University (Powers, et al., 1988).

The development of university-business partnerships was also aided by various levels of government. One of the best examples and perhaps the most important was the

Government-University-Industry Research Roundtable. "The Research Roundtable was founded in 1984 to 'provide a forum where scientists, engineers, administrators, and policy makers from government, university and industry can come together on an ongoing basis to explore ways to improve the productivity of the nation's research enterprise'" (Bowie, 1994, p. 33). The Roundtable is sponsored by the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. To accomplish its tasks, the Roundtable is organized into four working groups that focus respectively on 1) the development, identification, recruitment, and retention of talent for science and engineering research; 2) federal university-sponsored relationships; 3) new alliances among universities, industry, the financial community, and federal and state governments; and 4) major issues underlying the entire research and engineering enterprise (Bowie, 1994). It is the activities of the third working group that are most germane to this study.

One of the greatest accomplishments of the Roundtable was achieved through a partnership with the Industrial Research Institute. This joint endeavor resulted in a set of documented guidelines for university-business partnerships. The guidelines contained a one-page model for a research grant which has been most useful in university-partnerships (Bowie, 1994).

The concept of the university-business partnership received wide acceptance during the 1980s due to their perceived advantages and the positive encouragement of government funding. Consequently, the number of these partnerships grew rapidly. Nelkin, et al., (1987) listed the following reasons for this explosive growth:

1. An increase in the cost of university research or drop in federal funding.
2. The perception that the United States had lost its technological superiority.
3. Two areas of cutting-edge technology, computers and biotechnology, were closely linked to academic science.
4. Patent reform and state-initiated programs (p. 68).

What remains to be seen during the 1990s and the turn of the century is whether this growth in university-business partnerships will continue to grow or will they succumb to the various disadvantages after the honeymoon is over. Powers, et al., (1988) suggest that "academia and business are unlikely partners" (p. 3). They point out that basic differences in philosophy regarding basic vs applied research, short term vs long term objectives, and basic knowledge vs profit motive make the results of these joint agreements less than ideal.

Since a major justification for university-business partnerships is their ability to allow American industry to compete more effectively against other industrial countries, a word should be said about what our competitors are doing with respect to university-business partnerships. As we consider the public policy implications of foreign partners for American universities, it will be interesting to know whether these foreign firms are simply behaving opportunistically or whether they are operating from an established tradition of university-business partnerships in their own countries. Moreover, the existence of a tradition of university-business partnerships may provide some indication of the implication of these partnerships on our economic development and their potential effect on the character and values of American universities.

Not surprisingly, Japan has developed one of the most extensive system of university-business partnerships. What is surprising is how recent they are. There is no tradition of university-business partnerships in Japan. Japanese industry has always has

always had a remarkable competitive edge in transferring basic research to profitable products in the marketplace. The government has played an active role as a partner with industry in technology transfer. As would be expected, Japanese research is very team oriented. More importantly, the Japanese researchers do not seem to make the distinction between basic and applied research that is so important in the American University context (Cutler, 1989).

The decade of the 1980s has been characterized by reports critical of American education methods and results at all levels. Consequently, the decade of the 1990s and beyond may well be characterized by extensive restructuring of American education. One element of such restructuring involves various cooperative agreements between schools, colleges, and universities designed to enrich our education process and improve results.

If we are serious about transforming the quality of our education, it will require a much greater degree of substantive cooperation between schools, colleges, and universities than has been the case so far. An important and appealing aspect of these genuinely collaborative strategies is that they provide an opportunity to move away from the piecemeal approaches to addressing the needs of students. Cooperative agreements also offer the opportunity to strengthen connections between research and actual classroom teaching practices. Both assessment of good practices and school-based research are essential for guiding long-term improvement of education. For example, partnerships can bring together faculty at different levels within the educational system to develop new knowledge and skills leading to improved practices. These types of collaborative efforts could provide the opportunity for K-12 educators to assume the leadership in partnerships with university faculty to reform their own schools. Such

relationships can overcome insularity and stereotypes and move us toward a more coherent, unified educational community. By establishing long-term collaborative relations between schools, colleges, and universities, cooperative agreements can provide exceptional leadership in the vital upgrading of education.

One of the fundamental ideas behind school, college, and university cooperative efforts is that there will be a common agenda--that is, schools and a partner university will work together on the same problems, problems which have been worked on separately before the partnership was developed. The partners should be equal. That is, each has an equal voice whether the problem traditionally has been embraced primarily or exclusively by the university or the schools.

Partnerships, alliances, and consortia involving multiple education institutions began to appear sporadically after Russia launched Sputnik I on October 4, 1957. Collaborative arrangements and joint agreements became much more prevalent after the appearance of "A Nation at Risk" (The National Commission on Excellence in Education, 1983). Numerous educational leaders such as Adler (1982), Boyer (1983), Goodlad (1984), and Sizer (1984) have documented the decline of our educational achievements. Consequently, efforts at school reform and higher academic standards have led to benefits for teachers and some modest improvement in student achievement, but the American school system cannot accomplish the required educational reform on its own. "Only by involving other constituents of our society--colleges, corporations, communities, and governmental agencies--will we be successful" (Gross, 1988, p. xi). Boyer (1985) described the situation succinctly:

> Today, with all the talk about educational excellence, schools and colleges still live in two separate worlds. Presidents and deans rarely talk to principals and district superintendents. College faculty do not meet with their counterparts in public schools, and curriculum reforms at every level are planned in isolation. It's such a simple point--the need for close collaboration--and yet it is a priority that has been consistently ignored. Universities pretend they can have quality without working with the schools, which are, in fact, the foundation of everything universities do (p. 11).

Regardless of the problems and however difficult collaboration may be, there appears to be a significant need for sharing resources to solve mutual problems--a partnership. Ideally, these partnerships, alliances, and consortia should include corporations, all levels of government, and communities. A college or university is the ideal constituent to create these academic relationships because they are structured to develop educational partnerships (Gross, 1988).

The Carnegie Corporation of New York has made a major investment in support of collaborative programs to strengthen the relationships between schools, colleges, and universities. The linking of schools with institutions of higher education--as well as with the business and corporate community offers a viable strategy for implementing substantial reforms in American education on a nationwide basis. For example, such cooperative agreements have special promise for disadvantaged minority education, since they can strengthen schools otherwise vulnerable in poor communities (Gomez, 1990).

Although colleges and universities engaged in collaborative arrangements with high schools during the late seventies due to a decline of enrollment, significant growth in cooperative arrangements did not take place until the eighties as mentioned earlier. These joint efforts focused upon four areas: 1) students and their development through the academic discipline; 2) teacher training; 3) local community concerns; and 4) a generic

partnership involving schools, colleges, universities, corporations, government, and communities designed to enhance the overall education delivery system.

The number of education partnerships have grown to the extent that they have been catalogued at least twice. The initial effort was the "School and College Partnerships in Education" (Maeroff, 1983). More recently, Wilbur, Lambert, & Young (1987), published "The National Directory of School and College Partnerships in Education" which listed over 1,000 partnerships between schools and colleges.

Although Boyer (1983), Gross (1988), and Powers, et al., (1988) cite various disadvantages of the partnership, alliance, and consortium in education institutions, they all predict that these type of cooperative agreements will continue to grow at least for the short term because of the need to find more cost effective education delivery systems. This study will provide additional data, information, and knowledge concerning the extent to which various types of cooperative agreements exist along with their advantages and disadvantages. Decisions regarding the future implementation of such agreements will also be enhanced.

Theoretical Reasoning Supporting a Collaborative Effort

This section discusses organization theory related to partnerships, alliances, and consortia commonly referred to as interorganizational relationships. The relationship of one organization to another will be addressed in their general application first and the two broad categories of university-business and university-university relationships will follow.

Again, since the cooperative agreement first emerged within the university-business environment, it is logical that scholars begin their analysis here.

Most scholars address the general subject of organization theory by focusing upon or examining one organization. The majority of their concepts, ideas, analysis, conclusions, and recommendations would fall under the category of administration or management within the organization. Typical subjects addressed are: structure, power and authority, leadership, decision making, communications, and organizational effectiveness.

A few authors included a chapter on the external environment and what effect it had on the organization. The external environment included various levels of influence from local, state, and federal government, shareowners, customers, suppliers, and community groups. The general environment consisted of societal and cultural values, political and legal norms and values, and economic, demographic, and technological conditions in society. The specific environment of individual organizations consisted of those organizations, groups, and individuals with which the organization directly interacted. Both the general and specific environments affect organizational structure, goals, and behavior and are in turn affected by them. Although any organization which is a party to a partnership, alliance, consortium, or articulation agreement would certainly be impacted by any other party to that agreement, no mention of this type of external environment component could be found. The researcher found only a limited number of scholars who addressed this aspect of the external environment and the material was included under the general subject of interorganizational relationships, but still no mention of partnerships, alliances, consortia nor articulation agreements.

The macro environment presents many uncertainties for organizations. Organizations attempt to reduce these uncertainties and they often do this by gaining some control over various aspects of the macro environment which are of key importance to them. The organization then deals with this enacted environment--that part of the environment which the organization creates (through interorganizational relationships)--which contains the most important elements for its success.

There are certain conditions that foster interorganizational relationships. First, since organizations have to give up something to form an interorganizational relationship, the projected benefits must outweigh the projected costs. Environmental dependencies are both created and reduced by interorganizational relationships. Organizations also form relationships to gain power in the environment. Galbraith's (1967) theory of countervailing power tells us that organizations will form into blocks of power to compete with other large power centers in the environment.[2]

A scarcity of resources or some performance deficiency are other factors that can lead to interorganizational cooperation as the organization tries to acquire more resources or to improve performance. A compelling force or goal will also cause organizations to coalesce. The nature of the environment, such as the form of the structure of society, scarcity, concentration, and interconnectedness all can enhance organizational cooperation. The permeability of organizational boundaries also affects the degree to which organizations cooperate with each other. Finally, organizational norms and physical proximity affect the degree of interorganizational relationships (Hodge & Anthony, 1988).

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[2] Galbraith, J. K. (1967). The New Industrial State. Boston, MA: Houghton Mifflin.

Interorganizational relationships occur in four environmental contexts: social choice, coalitional, federative, and unitary all of which describe various levels of control of the organization. The types of relationships that occur in these environments include horizontal integration, vertical integration, coalitions, interlocking directorates, reciprocity, and social interlocking. Mergers and acquisitions are formal expressions of the unitary form of interorganizational relationships. They occur on both friendly and hostile terms, and were common forms of interorganizational relationships during the 1980s (Hodge & Anthony, 1988).[3]

Hodge & Anthony (1988) further stated that the use of interorganizational arrangements is a rather new field of study in organization theory. He showed that we must be concerned with groupings of organizations rather than focusing on an individual organization as the highest unit of analysis. By understanding how and why organizations interact with one another for mutual benefit, we are in a better position to explain why organizations behave as they do. Occasionally, these interorganizational arrangements involve the entering into a formal agreement (the partnership, alliance, consortium or articulation agreement) with one or more other organizations. The reason for such an agreement(s) is to better cope with the outside environment and they vary in type, form, and purpose. They (the agreements) always present advantages and disadvantages for each participating organization which was the rationale for one of the objectives of this study.

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[3] Hodge, B. J. & Anthony, W. P. (1988). Organizational Theory. (3rd Edition). Needham Heights, MA: Allyn & Bacon, Inc.

Harmon & Mayer (1986)[4] stated that interorganizational relationships were the broadest in the administration arena. Here the administrator deals with representatives of other organizations outside his/her immediate control. Many of these relationships are formally defined either by written agreements, statute, consititution, history or practice. Still others are defined informally (e.g., through personal friendship and acquaintance networks). In every case, these relationships are ultimately organization-to-organization, affecting, defining, and impacting the organization's perception of its mission and, therefore, the activities of its administrators.

Evan (1966)[5] stated that the relative neglect of interorganizational relations is all the more surprising in view of the fact that all formal organizations are embedded in an environment of other organizations as well as in a complex of norms, values, and activities of the society at large. Further, he pointed out that, notwithstanding the general neglect of interorganizational phenomena by organization theorists, managers are greatly preoccupied with interorganizational relations. He contended that interorganizational relations were impacted by such things as overlapping membership, goals, and values, along with the relative size, power, and nature of the various organizations involved. His major conclusion was that additional research was needed in the neglected field of interorganizational relations.

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[4] Harmon, M. M. & Mayer, R. T. (1941). Organization Theory for Public Administration. Boston, MA: Brown & Company.

[5] Evan, W. M. (1966). Approaches to Organizational Design. Pittsburg, PA: University of Pittsburg Press.

The university-business partnership, alliance, or consortium is designed primarily to achieve various economic objectives. For example, the university may need to find funds to offset the decline in federal support and the business may recognize the severity of international competition and feel the need to shorten the cycle from product invention to market. Businesses believe that partnerships are good because they will enhance revenues. As Thomas Kiley, vice president of Genetech, said, "Make no mistake about it: for-profit corporations are, by definition, not in business to give away money. Where they provide money for research, they invariably do so in order to gain competitive advantage" (Kiley, 1983, p. 63). Bowie (1994) listed other advantages to business:

1. receiving employee training at the university,
2. gaining lead time by getting a first look at research,
3. getting the right of first refusal for an exclusive license,
4. becoming identified as an industry leader,
5. obtaining exclusive access in an area of corporate concern,
6. gaining access to certain technology that may be hard to come by,
7. gaining access to university facilities which the business could not afford,
8. gaining access to skilled university personnel
9. obtaining inexpensive physical space in university-business research parks,
10. obtaining venture capital from the university (p. 47).

Several authors agreed that sometimes the disadvantages were as significant as the advantages. Some of these problems were: delays in publication of research due to businesses claiming that information is proprietary and patents need to be obtained, issues of non-disclosure and secrecy, and the withholding of products by university researchers.

Certainly there are economic risks for the university when they hire personnel with an uncertain source of revenue. The problem of a conflict of interest could plague both the university and the business employee. The differences in values between academia and business have the potential for disagreements. For example, the aim of academia is the search for "truth" through the discovery and dissemination of general principles and the bottom line for business is the search for profit through the development and delivery of salable products. Lowe (1982) emphasized a possible important disadvantage:

> Industry will seek the best laboratories and the best scientists in the best schools. The rich will get richer and the poor will get no assistance. This is a real cause for concern, since it exacerbates an existing imbalance. For example, the top 20 research centers in this country, one percent of the total number, received 44 percent of the National Institute of Health (NIH) budget. To the other 1180 institutions with NIH grants and contracts went the remaining 56 percent (p. 244).

Numerous education institutions have formed cooperative relationships (predominately, articulation agreements) with each other to deal with problems of mutual concern. They perceive that a sharing of resources will provide a better chance of achieving an effective solution to mutual problems for the benefit of all involved. Gross (1988) listed some of the potential benefits or advantages of educational partnership, alliance, consortium, and articulation agreements: 1) fiscal savings; 2) gaining greater supplementary funding; 3) improving professionalism; 4) attaining freedom from bureaucracy; 5) establishing personal ownership; 6) enhancing facilities; and 7) engendering community support. Gomez (1990) stated that there were several key requirements for a successful collaboration: 1) equal partners; 2) high degree of communication; 3) high level of trust; 4) shared decision-making; 5) shared goals;

and 6) long-term commitment by the top administrators. A short and concise way of enumerating the disadvantages of these types of joint agreements would be to list the absence of any of the above advantages or requirements.

Successful Agreements

There are numerous successful cooperative relationships involving business, local, state, and federal governments, education institutions, community groups and others. The degree of success varies, but the sharing of resources, achieving common goals and enhancement of products and services have motivated successful efforts. Some examples of these successful cooperative agreements are described below to illustrate the wide variety of size, type and complexity. Although this study focused upon cooperative agreements in the education arena, many of the oldest and most notable joint agreements are in the university-business or university-government category and deserve mention.

Probably the largest and most influential government-university-business collaborative effort is coordinated by the National Science Foundation (NSF). Typically, a designated university coordinates a number of interrelated projects. Each project involves a team of university faculty and representatives of several businesses. Initial funding is provided by the government with contributions from the university and industry.

One of the oldest programs was founded in New York State. The New York Science and Technology Center was chartered in 1963 for the purpose of supporting the development of new technologies and improved access to technology for New York businesses. The state of Indiana committed $150 million for a 10 year period beginning in 1982 to support the Indiana Corporation for Science and Technology, which gives grants

that, among other things, promote productivity. Pennsylvania's program is typical and one of the best known. In 1982 Pennsylvania initiated the Ben Franklin Partnership which was designed to support initiatives which would strengthen the state's economy (Bowie, 1994).

The Michigan Industrial Technology Institute was funded jointly by the state and the W. K. Kellogg Foundation to help retain Michigan's manufacturing industry and to support improved competitiveness (Foden, et al., 1988). Utah also has an extensive program entitled, Centers for Excellence. Begun with state funding of $2.5 million, the centers have received over $38 million from 123 companies and 14 federal agencies. The centers focus on biomedical technology, manufacturing technology, environmentally free products and processes, communications technology, and space engineering.

One of the early university-business agreements was between Washington University and the Monsanto Company completed in 1982. This $23.5 million partnership was to jointly conduct research in biotechnology (Maure,r et al., 1984). Another example is the Institute for the Study of Business Materials at Penn State. This partnership was founded in 1983 and by 1990 had 40 sponsoring corporations, two affiliated research centers at other universities, and total revenue of over a half-million dollars a year (Lilien, 1990).

Although education partnership, alliance, consortium, and articulation agreements are not as numerous as the university-business agreements, many have also achieved a high degree of success. The Toronto Area Learning Consortium is a partnership among two universities and four school districts established in 1988. The partnership allowed the members to implement change and expand programs successfully. The members credited their success to long-term commitment, stable finances, university faculty credibility, and

an effective management model (Erskine-Cullen, 1995). The Multi-University Consortium for Teacher Training consisted of several universities in Utah. The consortium developed a teacher training program to address a critical shortage of teachers to teach hearing-impaired/deaf and visually-impaired/blind students. The shortage was the result of program cuts at the University of Utah. After four years, 59 teachers completed training and over 2,000 handicapped students had well trained teachers (Robins, 1994).

An example with an international flavor is the Alaska Sister Schools Network which was formed by the Alaska Department of Education and the University of Alaska, Fairbanks. The purpose was to create opportunities for Alaskan students to experience the cultural and economic perspectives of their Pacific Rim neighbors. By 1989, 143 of Alaska's 543 schools had participated in the network (Parrett & Hartsock, 1990).

The Massachusetts Geographic Alliance is one of 34 state alliances working with the National Geographic Society to upgrade the teaching of geography in the school curriculum. The initial conference held in 1988 adopted the following goals: 1) support teachers with development opportunities; 2) train teachers to teach others; and 3) promote public awareness of the need to upgrade geography education (Massachusetts Geographic Alliance, 1990).

One of the most recently formed academic partnerships was initiated in March, 1996. Five small, private colleges in Boston--now known collectively as the Colleges of the Fenway--have agreed to combine resources to meet shared goals. Officials of the institutions hail the partnership as a way to save money while offering students more opportunities (Nicklin, 1996).

Partnership, Alliance, Consortium, and Articulation Agreements Involving Aviation Education

Extensive research of the literature revealed only two documented cooperative efforts involving aviation education. This is not to say others do not exist. However, since no significant amount of documentation was found, the use of partnership, alliance, consortium, and articulation agreements does not appear to be as prevalent in aviation education as in other disciplines as evidenced by the numerous examples of different types of agreements cited earlier.

Partnership 2000 is a collaborative effort of labor, education, and industry in California created to address the needs of employees through vocational and technical education provided by community colleges and affiliated training institutions. The partnership was organized to achieve the following goals: 1) improve student access to vocational education programs; 2) promote private sector and community college participation and coordination; 3) increase student job placement or further educational opportunities; 4) develop faculty renewal and recency programs with industry; 5) revise vocational education curricula to incorporate new technology; 6) orient faculty to the use of high technology to teach and train students; and 7) stimulate discussions to focus on vocational education issues from global and national perspectives. The partnership focused efforts in the following areas: aeronautics, fashion merchandising, manufacturing, and health care. Progress has been achieved on all objectives (Fujimoto, 1994).

Members of the Oklahoma Space Grant Consortium are: Cameron University, Langston University, University of Oklahoma, and Oklahoma State University. Some of its objectives are: 1) increase opportunities for minorities in aviation and space careers; 2) foster research; 3) support faculty; 4) provide fellowships to students; 5) promote the teaching of science, mathmatics, and technology at all levels; 6) increase the public awareness of career opportunities in aviation and space; 7) promote industry-university collaboration in aviation and space areas; and 8) encourage aerospace-related companies to become more involved in education at all levels (Journal of the Oklahoma Space Grant Consortium, Autumn, 1995 Edition, p. 8).

Summary

The review of literature revealed that the concept of cooperative relationships is not new with the university and business joining hands as early as 1925. This phenomenon has grown rapidly to the point that most colleges and universities are involved to some extent with business for various reasons. This growth is due to the perceived economic advantages to both parties and the encouragement of government. In fact, the involvement of the government at all levels caused the number of collaborative arrangements to grow even faster. In spite of some significant disadvantages such as uncertain funding, conflicts of interest, and disagreements regarding proprietary information, these university-business relationships continue to grow.

Although academic partnership, alliance, consortium, and articulation agreements were fewer in number than the university-business cooperative agreements, they were still widespread throughout academia. These type of collaborative efforts had objectives

related to education as opposed to economics. However, some were specifically designed to aid economic development by way of improving the skills of the workforce. It appeared that, as a result of significant successes in several areas, various joint efforts will continue, in spite of some disadvantages such as poor leadership, lack of communications, and perceived inequities in benefits. Only two examples of joint agreements were found in aviation education both of which were described as successful.

Several implications regarding cooperative agreements involving aviation education in post-secondary education institutions were evident as a result of the review of the literature. These implications were based on: 1) only two examples of joint agreements were found involving aviation education; 2) aviation education is a responsibility of post-secondary education institutions; 3) although some disadvantages do exist, numerous post-secondary education institutions have reported success with cooperative agreements in other disciplines; and 4) aviation education administrators have similar motivations to seek the same advantages available through cooperative agreements, such as reducing costs, sharing resources, achieving common goals, strengthening programs, and meeting the needs of students.

It follows then, that there appears to be ample opportunity to improve aviation education delivery systems in post-secondary education institutions through the use of cooperative agreements which underlines the importance of this study. The importance of aviation education to our nation and the responsibility of administrators to enhance aviation programs consistent with costs would dictate a need to investigate these opportunities. Realizing that cooperative agreements will not be the solution to all

problems and each comes with some disadvantages, reducing costs, sharing resources, achieving common goals, strengthening programs, and meeting student needs certainly are attractive features which need to be examined and evaluated for each application.

CHAPTER III

METHODOLOGY

Introduction

This chapter describes the information required for the study and how it was collected and reported. The research design included the specification of the data required and a determination of the optimum method of accumulating this data. Since the mailed questionnaire was chosen as the research tool for collecting the data, the rationale for its selection will also be given. The population surveyed will be identified and the situation surrounding the descriptive survey will be described along with the methods employed to obtain the data required. Procedures followed in summarizing and reporting the data will also be outlined.

Research Design

The specific data required for this study were: 1) the Institutional Members of the UAA who were involved in a partnership, alliance, consortium, or articulation agreement with other education institutions with the objective of improving aviation education delivery systems; 2) the name, type and membership of each agreement; 3) the purpose or purposes of the respective partnership, alliance, consortium, or articulation agreement; and

4) the advantages and disadvantages of each agreement and its effectiveness as perceived by the members themselves.

The nature and location of the data required for the study determined the methods and tools utilized in accumulating the data. Since the purpose of the study was to determine the location, type, purpose, and the advantages and disadvantages of each cooperative agreement, the researcher concluded that the descriptive survey was the best tool for accumulating this data. It was also believed that a well prepared questionnaire mailed to each Institutional Member of the UAA would be the optimum method for accumulating the information required for the study. Not only would the questionnaire identify the location of the various agreements under study, it would also provide the details of each agreement and its associated advantages and disadvantages as perceived by the parties to the agreements. Other advantages of the mailed questionnaire were: it was inexpensive, skilled interviewers were not required, was completed at the convenience of the respondent, and the respondent tended to be more objective, especially since the results were kept confidential (Salant and Dillman, 1994). Standardization and uniformity of the questions were also important advantages. The response rate was assumed to be high because of the respondents interest in the UAA.

Coincidentally, the researcher learned that the President of the UAA was requesting a similar study of articulation agreements within the membership. Consequently, in order to avoid requesting the members to complete two separate surveys, to conduct the study more efficiently and since the articulation agreement was a specific type of cooperative agreement, the researcher decided to combine the two studies.

The transmittal letter shown in Appendix B provides additional details of the research design.

Population

The post-secondary institutions studied were those Institutional Members of the UAA who were members of a partnership, alliance, consortium, or articulation agreement with other education institutions. However, in order to determine which Institutional Members were members of any type of cooperative agreement, it was first necessary to survey all of the UAA Institutional Members. Once it was determined which UAA Institutional Members were members of a cooperative agreement, these institutions constituted the population and the entire population was studied.

Situation

The focus of this study was aviation education in general and, specifically, those post-secondary institutions offering aviation education programs involved in various cooperative agreements with other education organizations. Since the UAA is the largest organization in existence representing the widest variety of formal aviation programs in post-secondary education institutions, it was chosen to be the source of the data required for the study.

The purpose of the UAA is the development and advancement of aviation education; and to promote, encourage, or foster any athletic, charitable, benelovent, or eleemosynary purpose or activity. The objectives of the UAA are to:

1. encourage and promote the attainment of the highest standards in aviation education at the college level.

2. provide a means of developing a cadre of aviation experts who would be available for such activities as consultation, aviation program evaluation, speaking assignments, and other professional contributions that would tend to stimulate and develop aviation education in all of its phases.

3. furnish a national vehicle for the dissemination of intelligence relative to aviation between institutions of higher education and governmental and industrial organizations in the aerospace field.

4. permit the interchange of information between institutions that offer aviation programs that are non-engineering oriented, for example, business, technology, transportation, and education.

5. actively support aerospace-oriented teacher education with particular emphasis on workshops and the development of materials.

The different categories of memberships available within the UAA are Institutional, Professional, Associate, Corporate Honorary, and Fellow. However, the focus of this study was upon the Institutional Members. Institutional Membership is open to any regionally accredited, technical or associate and baccalaureate level institution with an existing or planned aviation program or course offerings.

The list of Institutional Members of the UAA, dated December, 1996, included 108 post-secondary institutions offering programs of aviation education with 41 states, the District of Columbia, Canada, Puerto Rico and Brazil represented (See Appendix E). The UAA is recognized in the industry as an organization composed of public and private

education institutions whose aviation education programs are among the largest and most reputable in the world (See Appendix E). The Institutional Members are among the leaders in developing new and innovative aviation education delivery systems. Further, it was believed that the administrators, staffs, and faculty would be adept in analyzing and evaluating the advantages and disadvantages of the various delivery systems in which their institution may be involved.

Since the purpose of this study was to conduct an assessment of aviation education delivery systems in post-secondary education programs, it seemed logical, in view of the above, to focus upon the Institutional Membership of the UAA. Additionally, no other comparable group of organizations offering post-secondary aviation programs could be found. Consequently, the researcher assumed that studying the Institutional Members of the UAA would provide sufficient, valid, and reliable results.

Methods

A current list of Institutional Members along with their mailing addresses was obtained from the Executive Director of the UAA (See Appendix E). The data required for the study were considered and it was determined that a descriptive survey of the Institutional Members by a mailed questionnaire would be the optimum method of accumulating the data required for the study. Appropriate questions were then prepared and were designed to accumulate the following data: 1) the name of each agreement and date signed; 2) membership and type of agreement; 3) purpose, advantages, and disadvantages; 4) the most significant advantage and disadvantage and how satisfied the respondent felt that the agreement was achieving its objectives; and 5) the feature or

features considered essential for any model agreement. The questions were then edited and arranged according to the guidelines recommended by Salant & Dillman (1994). The questionnaire was also reviewed by personnel experienced in preparing such questions to assess the proper construction of both the questions and the questionnaire (See Appendix A).

The questionnaire was then mailed to each Institutional Member along with the transmittal letter shown in Appendix B. All returned instruments were reviewed for clarity and completeness. Some telephone calls were necessary to clarify information on the instruments. A summary of the collected data was then compiled from which the findings, conclusions, and recommendations were prepared (See Chapters IV and V).

Summary

It was determined that the data required for this study were available from the Institutional Members of the UAA who are involved in partnership, alliance, consortium, and articulation agreements designed to improve aviation education delivery systems. These Institutional Members were also the best source for the required data. The advantages of the mailed questionnaire made it the optimum tool for accumulating the data required for the study. Once the information was accumulated, it was reviewed, summarized, and evaluated for the findings, conclusions, and recommendations.

CHAPTER IV

RESULTS

Introduction

This chapter summarizes the findings of the study. The instrument shown in Appendix A was the vehicle utilized to identify the population and accumulate the required data. The instrument was designed to determine the location of the various cooperative agreements to be studied while gathering appropriate data regarding those agreements at the same time. It was mailed to all 108 institutions listed as Institutional Members of the UAA as of December, 1996, shown in Appendix E and was accompanied by the transmittal letter shown in Appendix B. Once the location (institutions involved in the agreements) of the cooperative agreements to be studied was determined, all agreements were studied. Thus, the total agreements reported to be in existence constituted the population and the entire population was studied. Although the questionnaire requested information regarding all types of cooperative agreements, it should be noted that the majority of agreements reported were articulation agreements. Consequently, the results of the study deal primarily with articulation agreements.

The results will be presented chronologically by question as enumerated on the questionnaire. Although some interpretation and paraphrasing were necessary, the

information reported by the respondents will be presented as accurately and completely as possible. The chapter will conclude with an analysis and discussion of the data.

Findings

A total of 54 of 108 questionnaires were returned which represented a 50 percent response rate. A total of 32 members (59% of those responding) indicated they were not a party to any of the various agreements under study. A total of 22 members (41% of those responding) indicated they were a party to at least one such agreement (See Table I).

TABLE I

NUMBER AND PERCENTAGE OF RESPONDENTS SIGNING AGREEMENTS

Agreements	Respondents	Percentage
None	32	59
At Least One	22	41
Total	54	100

These 22 respondents signing agreements constituted the population and the entire population was studied. Nine respondents (41% of those with agreements and 17% of total respondents) reported being a party to one cooperative agreement. Thirteen respondents (59% of those with agreements and 24% of total respondents) reported they were a party to multiple agreements (See Table II).

TABLE II

NUMBER AND PERCENTAGE OF RESPONDENTS SIGNING MULTIPLE AGREEMENTS

Agreements	Respondents	Percentage
One	9	41
Multiple	13	59
Total	22	100

The names of all formal agreements were furnished, however, some dates on which the agreements were signed were omitted. The names of all institutions signing the agreements were listed and the various types of formal agreements signed by the 22 respondents (entire population) were specified as shown in Table III.

TABLE III

TYPES OF AGREEMENTS REPORTED

Type of Agreement	Total Reported
Partnership	3
Alliance	3
Consortium	1
Articulation	55
Other	3
Total	65

This represented an average of 2.95 or 3 formal agreements per institution. The three "Other" agreements were memorandums of understanding with high schools. The total number of agreements per institution ranged from a minimum of one to a maximum of twelve. However, three respondents stated their articulation agreements were too numerous to count, and, consequently, were not included in the study.

The predominate purpose of the agreements related to the transfer of academic credits between institutions. The various purposes of the different agreements listed in Question Five, as stated by the respondents, were:

-to transfer credits from one school to another
-provide smooth transfer of community college students
-accelerate progress to our M.B.A. Degree
-advanced college credit for high school students
-to provide a continued articulated degree program
-to eliminate duplication of instruction

-to build on past learning experiences
-to transfer to upper level without loss of credits
-to complete transfer in an efficient manner
-an Associate Degree is now available to students
-to offer a coordinated course of instruction
-to meet the needs of students more effectively
-to provide an uninterrupted sequence of learning
-share resources to develop more complete programs
-to clarify and stipulate requirements for transfer
-defines credits to be awarded
-to provide a path to a four year degree
-to provide a mechanism to teach aircraft mechanic courses to community college students using the resources of a four year university
-to jointly develop aviation education for the area
-to make courses more accessible to students
-to provide technical assistance in developing new courses
-to acquaint high school students with aviation

The 22 institutions indicating they were parties to formal agreements furnished copies of the agreements as follows: eleven furnished copies of agreements, one furnished a copy and requested that it be returned, and ten did not furnish copies of agreements.

The reported advantages of the various agreements outnumbered the disadvantages by 7.3 to 1 and, again, the most reported advantage related to the ease of transfer of academic credit between institutions. The respondents described the various characteristics of the 65 total agreements (See Appendix C for a list of the specific advantages and disadvantages) as shown in Table IV (some characteristics were indicated as advantages or disadvantages, but rated neither moderate nor significant).

The agreements offered advantages from providing better communications to making academic transfers more efficient to reducing costs of delivery systems. The most significant advantages of the agreements requested in Question Nine were as follows:

TABLE IV

ADVANTAGES AND DISADVANTAGES OF AGREEMENTS-NUMBER AND DEGREE OF IMPORTANCE

	Total	Moderate	Significant
Advantages	189	53	40
Disadvantages	26	10	8

-students know up front what will transfer
-accelerate students' academic progress
-provides path to B.S. Degree by building on two year program
-allows credit for high school courses
-smooth path from high school to college
-most cost effective way to B.S. Degree (2+2+2)
-students can complete B.S. Degree with minimum hours
-lists specific courses to be transferred
-extends quality, less time and cost to student
-takes advantage of unique upper level programs, such as, internships, qualified instructors, etc.
-community college students are able to transfer more easily and are better prepared to do so than before
-provides a student base in a distant city
-takes advantage of lower costs of community college
-provides more complete program to student
-reduces cost of delivery by sharing resources
-both staff and students are aware of what will transfer
-a seamless transfer for the student
-provides additional revenue to institutions providing the courses
-increases enrollment
-allows expansion of programs in an efficient manner
-positive visability of institutions involved
-allows better recruitment of minorities

Although reported advantages outnumbered disadvantages, some specific disadvantages were present. The most significant disadvantages listed in Question 10 were:

-some students transfer early before completion
-reduces flexibility in transferring courses
-transfer students receive low priority behind students at accepting university
-students have to fight for credit even with agreement
-logistics in financial aid and advising students
-no additional resources for community college
-poor coordination between members
-transfer students may not be aware of agreement
-competition in recruitment between members of the agreement
-geographical distance between schools
-poor publicity/communications regarding availability of agreement
-occasional philosophical differences
-less cost to student means less revenue to schools

The respondents described their level of satisfaction with respect to how well the agreements were achieving their objectives as shown in Table V (some agreements were not rated).

TABLE 5

LEVEL OF SATISFACTION WITH AGREEMENTS

How Satisfied	Number of Respondents
Very	12
Moderately	14
Slightly	1
Not Satisfied	2

Some of the disadvantages were apparently significant enough to cause some dissatisfaction. The following reasons were given to explain why the respondents did not feel very satisfied that the agreements were achieving their objectives:

-transfer students do not receive equal treatment with the regular students at the upper level school in internships, flight team, etc.
-the objectives are not clear
-lack of coordination and leadership within agreement
-recruiting competition between members of the agreement
-lack of funding

Several features of the agreements appeared to be of importance. The respondents gave the following features which they would consider essential to any model cooperative agreement:

-clearly spelled out academic expectations, i.e. the exact courses accepted and those remaining to complete
-personal contact between staff/faculty of both schools
-staff must understand how agreement benefits students
-flexibility to break up course credit hours for individual "matches" of courses
-give full credit under agreement, full access to upper level opportunities (internships, flight team, etc.)
-equal benefits for all parties to agreement
-designate one person responsible for coordinating agreement (even a committee needs a chair--responsible leadership is an important ingredient)
-non-duplication of courses
-specify method of conflict resolution
-good public relations

Some of the most important information pertaining to making cooperative agreements successful involved volunteer comments from the respondents. Other comments the respondents wanted to share with anyone considering any type of cooperative agreement were:

-takes work to do it right-you have to want it!
-be flexible
-meet every year to review changes in programs
-a personal contact is an enormous help in process

-transfer agreements allow students to make maximum use of their resources and let them know what to expect from accepting institutions. Allow community colleges to adjust their own requirements
-the agreement should be approved by the departments involved or by a committee of those involved
-each agreement must have someone carrying the ball. You cannot write an agreement and put it on the shelf
-all members must see a benefit to gain commitment
-do it, if possible. It is a win/win/win situation (student/transferring school/accepting school)
-the junior-senior hour requirement of the four year institution needs to be carefully managed
-form an interdepartmental team and visit sites so team has clear/tangible connection-work out issues as they arise, but keep moving forward-check state and federal regulations
-in times of limited resources, pooling expertise is often necessary to produce quality training
-each institution must be willing to "give a little" to make it work
-have agreements signed at highest level-institutional support is key
-if done properly, has long term benefits to all involved

One other recommendation concerned the wide variation in describing similar courses among the institutions within the UAA. It was recommended that course descriptions be standardized, as much as feasible, for members of the UAA and the Council on Aviation Accreditation (CAA).

Analysis and Discussion

The survey method chosen for gathering the required data for the study was the mail survey. Salant & Dillman (1994) pointed out the following advantages of this type of survey method: 1) requires the least amount of resources; 2) requires no professional expertise in conducting the survey; 3) sampling error can be minimized at relatively low cost; 4) provides a sense of privacy to respondents; and 5) less sensitive to biases

introduced by interviewers. Disadvantages described were: 1) sensitive to noncoverage error; 2) some people are less likely to respond to the questionnaire than others; 3) researchers have little control over what happens to the questionnaire after it is mailed; and 4) surveyors cannot control whether mail questionnaires are filled out completely.

Since no record of any similar previous studies could be found, no such comparison was possible. However, a total of 54 replies were received from the 108 members of the UAA. This represents a 50 percent response rate which is considered acceptable for mailed questionnaires (Salant & Dillman, 1994). The UAA letterhead, combining two studies into one, and surveying a preselected population contributed to the favorable response rate. The candid replies on a few of the questionnaires indicated not only an intense interest in their role within the agreement, but also a willingness to share this information to other members of their profession. These type of comments confirmed that notwithstanding the general neglect of scholars addressing interorganizational phenomena, managers are greatly preoccupied with interorganizational relations (Evan, 1966).

Notwithstanding an apparent small population, the instrument proved to be effective in accomplishing a descriptive survey of cooperative agreements in post-secondary education institutions offering aviation education programs. The positive survey results corroborated the three requirements for a successful mail survey suggested by Salant & Dillman (1994). The three requirements are: 1) surveying respondents for whom a reliable address list is available and who are likely to respond accurately and completely in writing; 2) surveys in which an immediate turnaround is not required; and 3) projects in which money, qualified staff, and professional help are all relatively scarce.

Further, questions prepared under the guidelines of Salant & Dillman (1994) proved to be effective in accumulating the required data. For example, there were only two indications that the questions were vague or unclear as respondents supplied the requested data completely and without hesitation.

A total of 22 institutions out of the 54 responding indicated they were a member of some type of cooperative agreement. This appears to be a relatively small number of institutions involved in cooperative agreements pertaining to aviation education and causes one to wonder why so few are involved. Although only 22 institutions reported being a party to at least one formal agreement with another educational institution, a total of 65 agreements were analyzed and evaluated by the 22 respondents. This represented an average of 2.95 or 3 agreements per institution and indicated that once an institution signed one agreement, they were prone to enter into other agreements. This provided a significant indication of the effectiveness of the various agreements.

There was no attempt to make any analysis of those 32 respondents who were not a party to any agreement. There could be many reasons why. On could theorize here that some institutions may be unaware of the advantages of cooperative agreements. Also, several valid reasons could support a conscious decision not to participate in such an agreement.

It was recognized that each agreement must have at least two parties and, in some cases, two respondents could be evaluating the same agreement. Consequently, further analysis of the actual agreements reported indicated that eight agreements were each evaluated and reported on the questionnaire by two respondents who were parties to the same agreement. Therefore, 57 actual agreements were evaluated in this study.

Generally, most questionnaires were answered completely and contained the necessary data to represent the effectiveness of the agreement. However, those respondents who were members of several agreements had a tendency to furnish less than complete information. This was understandable and acceptable as the questionnaire requested details to the extent that considerable time was required for completion by those institutions involved in multiple agreements. In fact, three respondents reported that they were involved in so many different formal agreements, time did not allow participating in the survey. These three members were considered as responding only and not included in the population under study.

The most popular agreement by far was the articulation agreement (48 of 57). Reasons for its popularity were obvious by the many different purposes of the articulation agreement furnished by the respondents. A typical articulation agreement contained a listing of each course offered by the transferring institution and what credit would be granted by the accepting institution for that course. The small number of partnership, alliance, and consortium type agreements (9) would indicate an opportunity for additional benefits to institutions where they would be appropriate. One respondent reported three memorandums of understanding with local high schools to promote aviation education which were reported as "Other" agreements. This type of agreement could also benefit both the institution and student by familiarizing students with different types of aviation careers early in the students' formal education.

The different types of agreements were, for the most part, consistent with the definitions (Thesaurus of ERIC Descriptors, 13th ed., 1995). Although one formal agreement was entitled "articulation agreement," it did not conform to the definition of the

articulation agreement. The actual description of the purpose and objectives resembled a partnership and was counted as such in the results of the study.

Three agreements contained multiple parties. One partnership involved three different institutions and two alliances were reported to contain six and sixteen different institutions respectively.

Most of the effective dates reported were in the 1990's. However, one respondent reported four agreements signed in the 1980's and one agreement signed in 1979. Although the cooperative agreement is relatively new in aviation education, the total number is increasing and likely to continue to increase due to an institution's normal motivation to remain competitive by enhancing programs while, at the same time, containing costs. This trend is consistent with the concept that the college or university is the ideal constituent to create these academic relationships because they are structured to develop educational partnerships (Gross, 1988). Hodge & Anthony (1988) also suggested that as resources become more scarce or some performance deficiency exists, the natural instinct to survival leads to more interorganizational cooperation. Further, since Harmon & Mayer (1986) stated that interorganizational relationships were the broadest in the administration arena, aviation education emerges as a viable candidate for additional cooperative agreements.

The respondents indicated the 65 agreements contained 189 advantages and 26 disadvantages representing a 7.3 to 1 ratio (See Appendix C). The characteristics of the agreements perceived as advantages most frequently were related to the ease of transfer of academic credits between institutions and avoiding duplication in course offerings. Controlling costs to the student, improving quality and overall coordination of the

programs were also frequently reported as advantages. The advantages and disadvantages were rated approximately equal between being moderate or significant. The greater number of advantages over disadvantages was reflected again by 22 significant advantages listed in Question Nine and 13 significant disadvantages listed in Question Ten.

Notwithstanding the preponderance of advantages over the disadvantages, several respondents clearly pointed out that weak spots existed. For example, one respondent complained about the unfairness in competition for the recruitment of new students brought about by the formal agreement. The respondent felt that the other party to the agreement placed heavy emphasis on recruiting when the respondent thought the quality of the program should receive more attention. This corroborates the disadvantage of a formal agreement due to conflicting values suggested by Lowe, (1982). He pointed out that such conflicting values could impede the progress of the agreement toward achieving its goals. Other perceived disadvantages were reported as a lack of communications between parties to the agreement and a lack of decision making regarding problems which arose.

The level of satisfaction with the agreements achieving their objectives was quite high. The respondents reported they were either moderately or very satisfied with 26 agreements, slightly satisfied with one agreement and not satisfied with two agreements. The remaining agreements were not rated in this category. Further, only five reasons were given for being less than very satisfied.

The following features were listed by the respondents as essential in any cooperative agreement: 1) clearly spelled out academic expectations; 2) personal contact

between staff/faculty of both schools; 3) staff must understand how agreement benefits students; 4) agreement must provide for flexibility; 5) equal benefits for all parties; 6) assign one person to be responsible; 7) have no duplication of courses; 8) specify a method of conflict resolution; and 9) have a good public relations program. All features supported the key requirements for successful collaboration advanced by Gomez, (1990), such as equal partners, high degree of communication, high level of trust, shared decision-making, shared goals, and long term commitment by the top administrators.

The respondents submitted several positive comments for sharing with those considering any type of formal agreement: 1) it takes work to do it right-you have to want it; 2) be flexible; 3) meet frequently to review changes; 4) you must have someone carrying the ball; 5) all members must see a benefit; 6) in times of limited resources, pooling expertise is often necessary to produce quality training; 7) each institution must be willing to "give a little" to make it work; 8) have agreements signed at highest level to achieve institutional support; and 9) if done properly there are long term benefits for all involved. Although many of the comments involved the implementation and operation of cooperative agreements, several again referred to the requirements of a successful agreement. Again, all were consistent with and supported the key requirements listed by Gomez, (1990).

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

This chapter will summarize the purpose, necessity, methodology, and major findings of the study which formed the basis for the conclusions. Recommendations were formulated from these conclusions.

Summary

This study comprised a descriptive analysis of various formal cooperative agreements involving aviation education programs currently existing between post-secondary institutions and other education institutions. These cooperative agreements were specifically defined as partnerships, alliances, consortia and articulation agreements. The study included, but was not limited to: 1) the name, type, and membership of each agreement; 2) the date each agreement was signed and its purpose; and 3) an assessment of the advantages and disadvantages of each agreement as perceived by the members of each respective agreement.

The study was necessary because: 1) such agreements have begun to appear in aviation education with varying degrees of success; 2) a review of the literature revealed

that such agreements had existed for many years within several other disciplines with business, government, community groups, and other education institutions. However, no comparable research was found to indicate their level of existence and success in aviation education; 3) limited resources make it incumbent upon educators to search for creative ways to improve the efficiency and effectiveness of aviation education delivery systems; and 4) data regarding the type, purpose, and effectiveness of such agreements are required to support decisions to develop additional agreements in aviation education.

The primary focus of the study was to determine: 1) the name, type, and membership of each agreement; 2) the date each agreement was signed and its purpose; and 3) an assessment of the advantages and disadvantages of each agreement as perceived by the members of each respective agreement. The UAA membership was the largest and most reputable organization representing institutions offering post-secondary aviation education programs in 41 states, the District of Columbia, Canada, Puerto Rico, and Brazil. Therefore, the researcher concluded that the Institutional Members of the UAA would be the best source for the data required for the study. Since the Institutional Members were responsible for the creation, implementation, and administration of each agreement, they would also be in the best position to evaluate the advantages and disadvantages of each agreement.

Therefore, a detailed questionnaire was developed to serve as the research tool to accumulate the required data which was then mailed to each Institutional Member of the UAA. The questionnaire proved to be an effective instrument to complete the descriptive study. Not only did it provide the location and types of cooperative agreements currently in existence in post-secondary institutions offering aviation programs, it furnished the

corresponding advantages and disadvantages of each type of agreement as reported by the members of each respective agreement. Other comments and helpful recommendations were submitted by the respondents.

The 108 Institutional Members returned 54 completed questionnaires for a 50 percent response rate. A total of 32 members (59% of those responding) indicated they were not a party to any of the various agreements under study. However, a total of 22 members (41% of those responding) indicated they were a party to at least one such agreement and one member had signed 12 such agreements. These 22 respondents constituted the population for the study and the entire population was studied. No analysis was conducted of the 32 respondents who reported signing no agreements. Nine respondents (41% of those with agreements and 17% of total respondents) reported being a party to one agreement. Thirteen respondents (59% of those with agreements and 24% of total respondents) reported they were a party to multiple agreements. The 22 respondents were members of a total of 65 agreements for an average of 2.95 or 3.0 formal agreements per respondent signing any kind of agreement. However, eight of the 65 agreements were reported twice because each of these eight agreements contained two respondents. Therefore, 57 total agreements were involved in the study.

The most popular agreement was the articulation agreement. There were three partnerships, three alliances, one consortium, and 55 articulation agreements reported by the respondents. Although the earliest agreement was signed in 1979 and four were signed in the 1980's, the majority were signed in the 1990's.

The advantages outnumbered the disadvantages by a 7.3 to 1 margin and the level of satisfaction regarding the agreements' ability to achieve its objectives was quite high.

Several features were listed as essential for any cooperative agreement and several comments were submitted to share with others considering similar agreements. All of these features and comments were positive.

Conclusions

The 50% response rate (54 of 108 questionnaires mailed) was acceptable for this type of survey (Salant & Dillman, 1994). Contributing factors toward the good response rate were: 1) surveying a selected population who would have an interest in the study; 2) using the UAA letterhead giving the study more credibility; and 3) combining two studies into one to avoid duplication of time and expense. The questionnaire was an effective instrument in that the respondents appeared to have little difficulty in reading and understanding the questions, demonstrated no reluctance in providing the requested information, and gave candid answers.

Almost one-half or 22 (41%) of the 54 respondents reported being a party to at least one agreement with 13 (59%) of these 22 reporting being a party to multiple agreements. This indicates that once an institution has experience with one such agreement, they have a tendency to enter into additional agreements. This would lead to a conclusion that experiences with most agreements have been positive. In fact, these 22 respondents reported that the advantages outnumbered the disadvantages by a 7.3 to 1 margin. Additionally, most of the respondents indicated a high level of satisfaction that the agreements were achieving their objectives. Therefore, it appears that other institutions may have opportunities to avail themselves of similar advantages. However,

since almost every agreement will have some disadvantages along with the advantages, the design and implementation of the agreement are important.

The type of formal cooperative agreement reported the most frequently was the articulation agreement. Reasons for its popularity were: 1) agreements tended to be brief, simple and easy to construct; 2) the current trend of allowing students to transfer without loss of course credit; and 3) geographical proximity is not necessary. Hodge & Anthony (1988) emphasized the proximity factor in his discussion of successful interorganizational relationships, but in the case of the articulation agreement, close proximity is not a requirement.

Although the most popular cooperative agreement reported was the articulation agreement, three partnerships, two alliances, one consortium, and three others (memorandums of understanding with local high schools) were also reported. All nine of these type of agreements were designed to share resources, reduce costs and to provide more complete programs to meet the needs of students. All members of these agreements were located in the same city or very near geographically (with one exception). These types of agreements were generally consistent with Hodge & Anthony's (1988) theory of the importance of proximity in developing interorganizational relationships. One would conclude there may be an opportunity to improve aviation delivery systems with the partnership, alliance, and consortium type of agreement in those locations where different programs, either similar or different in content, are in close proximity. These types of agreements would be best suited for situations where institutions are located near each other geographically and a sharing of resources is possible to avoid duplication, reduce

costs, and develop more complete programs to meet students' needs. However, close proximity is not an absolute requirement depending upon the specific situation.

Since, the first agreement was signed in 1979, four signed in the 1980's, and most of the remaining signed in the 1990's (some dates were not furnished), it appears that the trend is increasing. Additional research would be necessary to confirm that this trend is obvious. However, one would tend to anticipate this trend to continue with the current emphasis on collaboration instead of competition, the need to retain students, and to reduce costs. Also, Evan (1966) predicted years ago that since all formal organizations are embedded in an environment of other organizations as well as in a complex of norms, values, and activities of the society at large, managers would continue to be preoccupied with other organizations and both informal and formal interorganizational relations would continue to develop.

A total of 22 different purposes were reported for the 65 different agreements. Although some purposes were similar in nature, this is an indication of the versatility of the different agreements. It appears that the usefulness of such an interorganizational administrative tool depends primarily upon the creativity of the parties involved.

Another indication of the usefulness and success of the cooperative agreement was that advantages outnumbered the disadvantages 7.3 to 1. Although it appears that cooperative agreements are generally worthwhile because they have more advantages than disadvantages, it would be advisable for anyone considering such an agreement to review the comments shared by the respondents. Hodge & Anthony (1988) pointed out that since each agreement represents joint goals, shared resources, common objectives, etc., each

member of the agreement must make some sacrifice and, consequently, some disadvantages will also exist along with the advantages.

The respondents also reported a high level of satisfaction with respect to the ability of each agreement to achieve its goals. Only three respondents reported being slightly or not satisfied while 26 reported being moderately or very satisfied. Again, this appears to be another indication of the overall satisfaction of these type of formal cooperative agreements in spite of a few disadvantages. This apparent high level of satisfaction raises a question regarding how long this satisfaction will last. Since most of the agreements studied have been implemented in the last few years, one could ask the same question that Powers, et al., (1988) asked earlier. They wondered if cooperative agreements would continue to grow or would they succumb to the various disadvantages after the honeymoon is over.

The features considered by the respondents to be essential in any cooperative agreement all seemed to be important and necessary. According to the respondents, some of the requirements for any agreement should be: 1) clearly spelled out expectations; 2) good communications between members; 3) the agreement must be flexible and contain equal benefits for all members; and 4) responsible and capable leadership with appropriate authority. These same requirements among others were mentioned by Gross (1988).

The recommendation to standardize course descriptions for institutions within the UAA and CAA appears to have merit even though it would be a monumental task. Five respondents reported that a disadvantage of the articulation agreement was that course descriptions did not match. Consequently, it was difficult to give proper credit to a student without some flexibility in breaking up the credit hours for a particular course.

Any opportunity to develop a cooperative agreement should be evaluated carefully as such agreements are not a panacea nor a solution to all problems. Additionally, realizing that each agreement will have certain disadvantages, especially if it is not designed and implemented properly, one should be cautious and not formulate an agreement just because it is the "in" thing to do. For example, the respondents emphasized that: 1) all members must see a benefit to gain commitment; 2) each agreement must have someone carrying the ball; 3) the agreement should be approved by the departments involved; 4) it must be flexible; and 5) everyone must know what to expect. All these requirements for implementation are consistent with the recommendations of Gomez (1990). Also, there are no trophies given for the most number of agreements signed. In other words, although a cooperative agreement works in one situation, it may not work in the next. The quality of the agreements is more important than the quantity of the agreements.

A complete review of the findings in Chapter IV should be completed before an agreement is developed. Certain characteristics are critical. It must contain clear objectives, responsibilities, and equal benefits for all parties. A responsible person with authority must oversee the implementation and operation of the agreement. Periodical reviews for necessary changes in the agreement must be completed and effective communications among the parties of the agreement must exist.

An effective cooperative agreement is not easy to achieve. It requires time and considerable effort by all parties involved. However, with the proper formal agreement, good leadership, and committed parties, it can be a rewarding experience for everyone

involved. To quote one respondent, it can be a "win/win/win" situation--a win for the student and a win for both institutions.

Perhaps, the most significant conclusion which can be drawn from the results of this study is that there is a strong indication that cooperative agreements are effective at the present and will probably continue to enhance aviation education delivery systems. For example, the wide variety of purposes for different agreements and the wide margin of advantages over disadvantages suggest both flexibility and effectiveness. Although the number of respondents (54) and the total number of agreements evaluated (65) in this study were somewhat limited, it is obvious by the preponderance of positive results reported, that cooperative agreements have received a favorable acceptance initially. Further, the comments and evaluations furnished by the respondents indicated there is a potential for future expansion of this administrative tool in improving the efficiency and effectiveness of aviation education delivery systems. The respondents, however, pointed out that any agreement should contain certain features for its success.

Recommendations

It is recommended that this report be made available to all staff and faculty involved in aviation education in post-secondary institutions. The information contained in this study could be utilized to evaluate opportunities to achieve similar improvements in their respective delivery systems, such as sharing resources, reducing costs, and enhancing programs to meet student needs. If any type of cooperative agreement is contemplated, a thorough review of the literature should be completed to fully understand the various

types of agreements and their wide range of purposes and application along with the essential features and advantages and disadvantages.

Since this study was limited to evaluating the cooperative agreements currently in existence as reported by the respondents, additional information should be obtained by studying those respondents who are not participating in any such agreement. The reasons for nonparticipation, in addition to the results of this study, would provide a much clearer understanding of when a cooperative agreement might or might not be appropriate.

Lastly, although the purposes of the various agreements included in this study were analyzed, there was no attempt to determine the circumstances surrounding the decision to develop the agreement. Sometimes a decision to form an agreement may be dictated by aspects of the environment which may not be apparent by the stated purpose of the agreement. For example, an agreement could be directed by a state governing body, it may be politically expedient, or it may be the last resort for the survival of a program. Such additional information would also be helpful in determining why an agreement was consummated.

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APPENDIXES

APPENDIX A

QUESTIONNAIRE

PARTNERSHIP, ALLIANCE, CONSORTIUM, AND ARTICULATION AGREEMENTS CURRENTLY EXISTING IN POST-SECONDARY AVIATION EDUCATION PROGRAMS

If your school, college, or university is a member of a formal partnership, alliance, consortium or articulation agreement with another education institution designed to enhance aviation education programs in any way, please provide the following information ("Formal" means an agreement in writing, such as an articulation agreement). Agreements with private contractors, government, or businesses would not be included:

(Note: To save time, you may write your answers on this questionnaire in longhand.)

1. Check the response which applies to your institution:

____A. Our institution is not part of any agreement as described above (you may stop here). PLEASE RETURN YOUR QUESTIONNAIRE SO THAT WE MAY HAVE A RECORD OF YOUR RESPONSE!

____B. Our institution is part of one such agreement as described above (please complete the rest of the questionnaire).

____C. Our institution is part of multiple agreements as described above (**please make a copy of this questionnaire and complete a separate questionnaire for each agreement**).

NOTE: QUESTIONS 2 THRU 5 MAY BE OMITTED IF THIS INFORMATION IS INCLUDED IN THE COPY OF THE AGREEMENT YOU ARE FURNISHING.

2. Please list the name of the formal agreement and the date signed.

3. List the members (names of institutions) of the agreement.

4. Check below which best describes the type of formal agreement named above?

____A. Articulation agreement

____B. Partnership agreement

____C. Consortium agreement

____D. Alliance agreement

____E. Other, specify

5. What is the purpose of the agreement?

6. Please furnish the name, title, address, and telephone number of a contact person who will have detailed knowledge of the agreement. This person may be contacted for further information within 2-3 weeks.

7. Please enclose a copy of the written agreement and check the following:

____Yes, a copy of the agreement is enclosed.

____Yes, a copy of the agreement is enclosed, but you may <u>not</u> reproduce nor distribute it in any way. Please return to me after your review.

____No, a copy of the agreement is not enclosed.

8. Please evaluate the various characteristics of the agreement by placing a checkmark in the appropriate space. Write NA if a characteristic is not applicable.

Characteristic	Advantage	Disadvantage	Neither	Moderate	Significant
Delivery cost to institution	____	____	____	____	____
Cost of program to student	____	____	____	____	____
Number of programs available	____	____	____	____	____
Quality of programs available	____	____	____	____	____
Coordination of courses/programs	____	____	____	____	____
Ease of transfer of students and credits among participating institutions	____	____	____	____	____
Student events/activities	____	____	____	____	____
Decision making within agreement	____	____	____	____	____
Sharing of facilities/resources	____	____	____	____	____
Provide efficiency in program delivery (eliminates duplication in course offerings)	____	____	____	____	____
Definition of authority within organization	____	____	____	____	____
Fear of merging into one organization	____	____	____	____	____
Concern for inequity in cost sharing	____	____	____	____	____
Concern for identity of member institution	____	____	____	____	____
Concern for inequity of revenue sharing	____	____	____	____	____
Concern for faculty/administrator identity	____	____	____	____	____
Concern for faculty/administrator authority	____	____	____	____	____
Concern for inequity in course development	____	____	____	____	____
Communications in organization	____	____	____	____	____
Commitment of higher mgmt	____	____	____	____	____

9. What would you say is the single most significant advantage of this agreement? (give example)

10. What would you say is the single most significant disadvantage? (give example)

11. To what extent do you feel satisfied that the agreement is achieving its objectives?
(circle one)
Not Satisfied Slightly Satisfied Moderately Satisfied Very Satisfied

12. If you feel less than Very Satisfied that the agreement is achieving its objectives, what are the reasons?

13. What feature or features would you consider essential for ANY model cooperative agreement affecting postsecondary aviation education? (please list a feature or features or write "None")

14. What other comments would you share with any other institution considering such an agreement?

Thank you for your time and willingness to participate in this important study. Your answers and comments will be kept confidential and we will mail you a copy of the results of the study if you wish. Please write your name and address below if you would like a copy.

APPENDIX B

TRANSMITTAL LETTER

UNIVERSITY AVIATION
ASSOCIATION

January 27, 1997

Partnerships, alliances, consortia, and articulation agreements--we are hearing these words more frequently in academe. In many instances, they are not just used in casual conversation, but represent formal relationships among various schools, colleges, and universities designed to achieve specific goals and objectives. These types of delivery systems have emerged within several different disciplines during the last few years, but only recently, have they been observed within aviation education. There appears to be a growing interest regarding the applicability of these types of agreements within the membership of the University Aviation Association (UAA).

During the UAA Fall 96 Education Conference in San Jose, Dr. Jacqueline Sanders, UAA, President, requested Dr. David NewMyer, Chair/Associate Professor, Aviation Management and Flight, Southern Illinois University at Carbondale, to head a project to determine the extent to which such agreements exist in UAA. Dr. Sanders is interested in the various types of agreements, purposes, advantages and disadvantages of such agreements, and whether the membership in general could benefit from such information. Coincidentally, Jack Sellers, Assistant Professor, Aviation Science, Tulsa Community College, was beginning a study of the same subject for a doctoral dissertation.

Therefore, in order to avoid requesting you to respond to two different questionnaires, David and Jack are combining efforts. Consequently, will you please furnish a copy of each agreement and a completed questionnaire for each agreement your institution has with other education institutions involving aviation education (agreements with government/industry would not be included, i.e. internship agreements). **Please mail or fax the requested documents to Jack Sellers at the address below by February 10, 1997.** If you have questions, please call Jack at 918-595-7511 (fax 918-595-7598). Thank you for your time and cooperation!

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APPENDIX C

SUMMARY OF ADVANTAGES

AND DISADVANTAGES

8. Please evaluate the various characteristics of the agreement by placing a checkmark on the appropriate space. Write NA if a characteristic is not applicable.

Characteristic	Advantage	Disadvantage	Neither	Moderate	Significant
Delivery cost to institution	11	1	12	2	2
Cost of program to student	18	-	5	9	2
Number of programs available	15	-	9	4	3
Quality of programs available	21	-	3	3	3
Coordination of courses/programs	21	2	1	4	5
Transfer of students/credits among participating institutions	24	1	-	5	6
Student events/activities	10	-	11	4	4
Decision making within agreement	10	3	11	4	2
Sharing of facilities/resources	12	1	9	-	4
Efficiency in program delivery (eliminated duplication in course offerings)	20	-	5	4	4
Definition of authority within organization	6	1	14	3	2
Fear of merging into one organization	-	-	16	-	-
Concern for inequity in cost sharing	1	3	12	2	1
Concern for identity of member institution	1	2	12	2	1
Concern for inequity of revenue sharing	-	2	14	-	-
Concern for faculty/administrator identity	-	2	13	3	-
Concern for faculty/administrator authority	1	1	14	1	1
Concern for inequity in course development	2	2	12	3	1
Communications in organization	6	3	8	4	2
Commitment of higher management	10	2	7	6	5
Total	189	26	189	63	48
Moderate	53	10			
Significant	40	8			

APPENDIX D

INSTITUTIONAL REVIEW BOARD

APPROVAL FORM

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 01-30-97 **IRB#:** ED-97-054

Proposal Title: AN ASSESSMENT OF PARTNERSHIP, ALLIANCE CONSORTIUM, AND ARTICULATION AGREEMENTS CURRENTLY EXISTING IN POST-SECONDARY AVIATION EDUCATION PROGRAMS.

Principal Investigator(s): Kenneth Wiggins, Jack L. Sellers

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING, AS WELL AS ARE SUBJECT TO MONITORING AT ANY TIME DURING THE APPROVAL PERIOD.
APPROVAL STATUS PERIOD VALID FOR DATA COLLECTION FOR A ONE CALENDAR YEAR PERIOD AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Disapproval are as follows:

Signature: _____ Date: January 31, 1997

Chair of Institutional Review Board

cc: Jack L. Sellers

APPENDIX E

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VITA

Jackie L. Sellers

Candidate for the Degree of

Doctor of Education

Thesis: A DESCRIPTIVE ANALYSIS OF PARTNERSHIP, ALLIANCE, CONSORTIUM AND ARTICULATION AGREEMENTS CURRENTLY EXISTING IN POST-SECONDARY AVIATION EDUCATION PROGRAMS

Major Field: Applied Educational Studies

Biographical:

Personal: Born in Blackwell, Oklahoma, February 18, 1933, the son of Charley and Lela Sellers.

Education: Graduated from Blackwell High School, Blackwell, Oklahoma, in May, 1951; received Bachelor of Science Degree in Electrical Engineering from Oklahoma State University in January, 1956; received Master of Science Degree in Natural and Applied Sciences with a major in Aviation and Space Sciences from Oklahoma State University in May, 1993; completed requirements for Doctor of Education Degree in Applied Educational Studies with a major in Aviation and Space Education at Oklahoma State University in December, 1997.

Professional Experience: Instructor, Department of Electrical Engineering, Oklahoma State University, January, 1956, to May, 1956; Instructor, U.S. Army Signal Corps, Fort Monmouth, New Jersey, November, 1956, to November, 1958; Numerous management positions at Southwestern Bell Telephone Company, November, 1958, to December, 1990; Director of Operations, Tulsa Flight Center, January, 1990, to April, 1992; Assistant Professor, Aviation Science, Science and Engineering Division, Tulsa Community College, April, 1992 to present.

Professional Memberships: Life Member of Oklahoma Society of Professional Engineers, National Society of Professional Engineers, Oklahoma Technical Society, and American Technical Education Association; Member of American Arbitration Association.

Professional Honors: Selected as 1994/95 Outstanding Technical Teacher of the Year by the Oklahoma Technical Society.