

FAITH BASED AVIATION:
AN ETHNOGRAPHIC STUDY OF
MISSIONARY FLIGHTS INTERNATIONAL

by

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Dedication

The researcher is grateful for the opportunity those at MFI provided, in opening their hearts, minds and doors into their organization. Little did I know God was laying the foundation for this study in the Fall of 2011 with my first graduate classes! What has been discovered and revealed is the incredible gem of MFI. Hopefully, this has been shared with the reader. I have been incredibly blessed.

This study is dedicated to Stephen F. Saint and family of I-TEC USA and to the men, women and families of Missionary Flights International and those they serve.

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Abstract

The development of faith-based missionary aviation is a post-World War II phenomenon. The war effort demonstrated the value, utility, and global reach of aviation to remote, underdeveloped areas of the world. With the beginnings of a worldwide infrastructure for aviation, Christian aviators realized aviation could increase the range and effectiveness of their efforts to reach the world for Christ (Mellis, 2006). Although individual organizations provide statistical information and data about flight operations there is a lack of external evidence and relevant research literature confirming the scope and value of these faith based aviation organizations and operations.

A qualitative, ethnographic study was conducted to document the activities of one faith-based aviation organization to gain an understanding of this little known aspect of civilian aviation. The study was conducted with Missionary Flights International (MFI) of Fort Pierce, FL which has been involved in faith-based, missionary aviation since its inception in 1964. As an aviation organization “MFI strives to offer affiliated missions the kind of efficient service and professionalism expected of an airline operation” (Missionary Flights International, 2013, p.1). MFI is a lifeline for missionaries to Haiti and the Dominican Republic, fulfilling their motto of “Standing in the Gap”.

MFI provides twice a week service to the island of Hispaniola and the Republic of Haiti. In this in-depth study insight and understanding was gained into the purpose of MFI, their daily routines and operations, and the challenges they face in maintaining their flight services to Haiti. This study provided documentation of the value and utility of such aviation efforts and of the individuals involved in this endeavor.

Table of Contents

	Page
List of Tables.....	vii
List of Figures.....	viii
Chapter	
CHAPTER I – INTRODUCTION.....	1
Literature Review.....	5
CHAPTER II – RESEARCH AND DATA ANALYSIS METHODOLOGY.....	23
The Rationale for Ethnographic Research.....	24
The Rationale for a Qualitative Approach.....	28
Preparation.....	31
Method.....	33
Procedure.....	35
Analysis of Data.....	39
CHAPTER III – RESULTS.....	40
The Core Phenomena.....	44
The First Core Phenomenon: Aviation.....	47
Aircraft.....	48
Part 125 Flight and Maintenance Operations.....	50
Flight Preparations.....	56
Professionalism.....	56
External Confirmation.....	60

Participant Observation.....	61
The Second Core Phenomenon: Missions and Missionaries.....	68
Service.....	69
To Serve.....	74
Evangelization and Prayer.....	77
Faith in God’s Provision, Support and Fund Raising.....	78
History and Culture.....	82
People and Human Assets.....	87
Volunteers.....	89
External Confirmation.....	90
Participant Observation.....	91
Summary of Results.....	94
CHAPTER IV – DISCUSSION.....	96
Limitations of this Study.....	101
Recommendations and Future Research.....	103
References.....	105
Appendix A: IRB Approval Letter.....	109
Appendix B: MTSU IRB Informed Consent Document for Interviews.....	110
Appendix C: MTSU Department of Aerospace Consent of Research Proposal.....	111
Appendix D: MTSU IRB Consent for Participation by Researchers.....	112
Appendix E: Interview Questionnaire (MFI Personnel).....	113
Appendix F: Interview Questionnaire (Non MFI-Personnel).....	114
Appendix G: Maps and Images.....	115

List of Tables

Table	Page
1. Four Potential Research Phenomena with Subcategories.....	47
2. Two Final Research Phenomena with Subcategories.....	47

List of Figures

Figure	Page
1. Triangulation: Interviews, Questionnaires and Observations.....	46
2. Map of South Florida and Caribbean.....	115
3. Map of Haiti	116
4. Photographs of MFI and DC-3 TP.....	117
5. Photographs of Cap-Haitien, Pignon and Port-au-Prince, Haiti.....	118

CHAPTER I - INTRODUCTION

Aviation is an expeditious means by which people and cargo can be transported especially in remote areas where traditional modes of transportation may not exist. Charitable aviation fills a gap where commercial aviation cannot be financially sustained. We are accustomed to measuring profits by looking at the financial bottom line. There are many things of equal or greater importance that aren't measured monetarily: missions accomplished, hurdles overcome, lives saved!

An exceptional example of this was is the global response to the devastating 2010 earthquake in the Republic of Haiti. According to the General Aviation Manufacturers Association, general aviation conducted more than 15,000 flights in 2010 in support of missions for humanitarian purposes. The earthquake that struck the small island nation of Haiti in January 2010 was a prime example of how aircraft operators can quickly mobilize in times of crisis to help solve the transportation challenges facing government agencies and nongovernmental relief organizations. Nearly one hundred general aviation aircraft flew over 700 mercy flights, transporting 3,800 passengers and 1.4 million pounds of relief supplies in the days immediately after the earthquake, providing a lifeline to Haiti. These efforts were recognized in a United States Congressional Resolution in May 2010 (National Business Aviation Association, 2010).

Americans are known as a charitable and giving people. In the last year of record, 2011, Americans donated over \$300 billion to charitable organizations (Voice of America, 2012). There is an equal measure of charity in aviation. Nonprofit aviation organizations throughout the country include those that introduce young people to flight; museums; restoration and preservation organizations; and professional organizations. There are also organizations and individuals that donate aviation services, such as flight services and maintenance and education

to needy patrons. They all qualify under the United States Internal Revenue Service 501 (c) (3) classification as charitable organizations. It is estimated for every charitable dollar donated to non-profit aviation organizations, three to five dollars of charitable aviation services are generated (Camerlin, 2003).

There are two basic categories of non-profit organizations, faith-based and humanitarian or secular. These organizations are: sectarian, related to a religious group or sect; and non-sectarian, or not related to any religious group or sect. This characteristic is usually announced in the organization's own description. By definition, the term faith-based is used to describe sectarian organizations and the term humanitarian is used to describe non-sectarian organizations. It is this former group, those providing faith-based aviation services, that is the focus of this study.

Although not a legal term, faith-based organizations are often used to refer to charitable religious organizations whose primary purpose or activities are religiously motivated (Fritz, 2013). Under the United States Internal Revenue Service 501 (c) (3) classification, organizations qualify for nonprofit status when they do not benefit financially or politically from their activities. For the sake of definition, nonprofit is considered the same as not-for profit; and are both, sectarian and non-sectarian.

Faith-based, nonprofit aviation serves vast areas of the United States and the world and supply some type of essential flight service, equipment, maintenance or training. Flight based operations have a common theme of providing timely service and of overcoming transportation obstacles with aviation, often in the absence of ground infra-structure, or because of critical time factors.

As a category, American faith-based aviation organizations are headquartered in the United States. They operate entirely domestically, within the geographic boundaries of the United States, or internationally, beyond American boundaries, or both domestically and internationally.

Aviation is a means of transporting people and cargo. This transport function is either primary or secondary to other objectives of the organization. Likewise, this is usually clearly delineated by the organization. For example, an organization's primary mission may be transporting missionaries to distant countries for the ultimate purpose of evangelization. Another organization's mission may be transporting medical teams, food and other supplies in relief efforts. This designation is important as it does speak to fundamental differences in mission and vision of an organization. Some Christian aviation organizations require a religious commitment by agreement or membership stating their mission has both a humanitarian and a spiritual foundation. In each case, aviation is used to shrink distances and overcome geographic obstacles.

As part of the foundation for this study, ten non-profit aviation organizations were contacted and surveyed in the Fall of 2011. Five of these were non-sectarian, humanitarian and five were faith-based. However, upon further reflection, it was decided to limit this study to faith-based or mission aviation. These five faith-based organizations were located in Ohio, Kentucky, North Carolina, Tennessee and Florida. They provide a variety of aviation services to include flight, maintenance and training services. The majority were within a day's drive, or five hundred miles of Murfreesboro, TN, permitting a local visit. With further refinement of this research process, the primary desire was to gain personal, in-depth familiarization and insight with an individual organization's people and culture. This would not be possible with a one day visit to each of these organizations. A lengthier, prolonged visit would allow for an ethnographic

study. For this reason, and with the extension of an invitation for such a visit, the process was narrowed to one organization, Missionary Flights International of Fort Pierce, FL. They occupy a most unique niche in flying modernized DC-3, the DC-3 TP aircraft for flying missionaries to the Republic of Haiti and the Dominican Republic on the island of Hispaniola in the Caribbean.

MFI serves those on the island chains in the Caribbean, in the Lucayan Archipelago and The Commonwealth of the Bahamas and in the Greater Antilles on the island of Hispaniola. On Hispaniola are the nations of the Dominican Republic and most significantly, the Republic of Haiti. Haiti, once called, "*La Perle des Antilles*", or The Pearl of the Antilles, because of its beautifully forested mountains today is largely deforested. Haiti is frequently visited by epidemics, tropical storms and flooding. It is the poorest country in the Western Hemisphere and an area of great need. In 2010, Haiti was the epicenter of a 7.0 magnitude earthquake that killed more than three hundred thousand and left more than a million people homeless in their nation. They have yet to recover from this devastation.

Thus, this study was conducted to gain greater insight and understanding into the mission and purpose of Missionary Flights International (MFI), their daily routine, and the challenges they face in maintaining their flight service primarily to Haiti. The research question, what are the purpose, scope and value of MFI's faith-based mission aviation services, guided the conduct of this study. A qualitative, ethnographic study was undertaken to gain an understanding of this little known aspect of civilian aviation, and document the activities of this faith-based aviation organization. There is a lack of relevant research literature documenting and describing this sector of general aviation and of faith-based aviation organizations. Although individual organizations provide statistical information and data about flights conducted, number of passengers, freight flown, or emergency medical flights conducted, there is a lack of readily

available external evidence confirming the scope and value of these aviation operations in published academic literature.

Missionary Flight International describes itself as:

Missionary Flights International is not an airline. We do, however, strive to offer affiliated missions the kind of efficient service and professionalism expected of an airline operation. The Lord has led us to "Stand in the Gap" in meeting the air support needs of affiliated Biblical missions in the island fields of the West Indies, particularly Haiti, the Dominican Republic, and the Bahamas. (Missionary Flights International, 2013, p. 1)

The ultimate goal of this study is to answer the research questions by documenting the value of the faith-based aviation services of MFI; to highlight the organization; and "to discover what makes them tick!" In so doing, this study hopes to convey to the reader a greater understanding, and to create a picture, through an in-depth ethnographic study, of mission aviation.

Literature Review

The development of faith-based mission aviation was largely a post-World War II phenomenon. Tried prior to this era, it had limited success. The war effort demonstrated the value, utility, and global reach of aviation to remote, underserved and underdeveloped areas of the world. In *More than a Pilot* (Mellis, 2006) the origins of the contemporary mission aviation effort are detailed. In the final months of World War II, and with the beginnings of a worldwide infrastructure for aviation, Christian aviators realized aviation could increase the range and effectiveness of their efforts to reach the world for Christ. No longer in the military service, Christian pilots wanted to offer their specialized skills to reaching the isolated and otherwise unreachable people of the world with the Gospel (Mellis, 2006).

America's attention was first drawn to missionary aviation in 1956 with the killing of five American missionaries in the jungle of Ecuador. Nate Saint and Jim Elliot used a Piper Cub airplane to reach the indigenous Woadani Indians prior to their deaths. A number of books have been written about this subject to include *Walking His Trail* in 2007 and *End of the Spear* in 2005, which was later made into a movie in 2005, as well as the movie *Beyond the Gates of Splendor* in 2002 (ITEC-USA, 2013).

If one looks at a literature review in a very narrow sense, little has been written in the scientific or scholarly literature about faith-based, religious, Christian, mission, missionary or aeronautics in Christian aviation in qualitative or quantitative research. If one looks at a literature review in the context of today's internet and the World Wide Web, information abounds for gaining an understanding and insight into this phenomenon and in laying a foundation for a thesis on mission aviation. The scope of mission aviation is unveiled and revealed through the internet.

In this broader context, many dozens of books, hardback and paperback, have been written by the pioneers in this field since the 1950s to include those of Betty Greene and Nate Saint. Greene was the subject of a 1999 book *Wings to Serve*, by Bengé, describing her passions of a love for Christ and a love of flying. As a pilot in the Women Airforce Service Pilots (WASP) in WW II, Greene dreamed of combining her passions to serve God through aviation. She helped found Mission Aviation Fellowship (MAF) in 1946 (Benge & Bengé, Betty Greene: *Wings to Serve*, 1999). Greene piloted MAF's first flight that year when she flew missionaries in a Waco biplane to a remote part of Mexico. Greene continued to fly missionaries for MAF for the next two decades to remote settlements in Mexico, South America, Nigeria, the Sudan and New Guinea (Will Work For God, 2011). Nate Saint was the subject of a 1973 book entitled

Jungle Pilot (Hitt, 1973) and a 1998 book entitled *On Wings and a Prayer* about his years as a missionary in the Ecuador jungle (Benge & Benge, Nate Saint: On a Wing and a Prayer, 1998).

Centuries ago, European missionaries propagated faith in the new world of North America by plying the natural waterways of the St. Lawrence and Mississippi Rivers inland. These missionaries could bring little more than what was needed to keep themselves alive. In this modern era, faith-based, missionary aviation is employed for both spiritual and widespread humanitarian missions.

A 2007 recent report from Global Mapping International notes mission aviation today is a broad and diverse ministry, in many ways much changed over the past half-century. Today there are “125 distinct, international and/or cross-cultural mission aviation programs...supported by more than 35 dedicated mission aviation training programs” (McGee, 2007, p. 1).

Also noted is the development of a mission aviation based network for financial, maintenance, training and safety management. A multitude of models are used today in providing aviation transportation services for missionaries and for humanitarian efforts (McGee, 2007).

A search of WorldCat, a worldwide search of libraries, offered limited data but some mention of early documentation, from the late 1940s and 1950s, in master's thesis and doctoral dissertations. This search mentioned a 1947 thesis/dissertation about the use of aircraft in the mission field by Martin; a 1948 thesis/dissertation on the opportunities of missionary aviation by Clarke; and a thesis/dissertation about aviation as a missionary occupation by Parsons in 1955.

In 2001 a thesis/dissertation, *Only By Air: The Effects of Mission Aviation*, by Michael Scott Zibell documented the effects of mission aviation. In this PhD dissertation at the University of South Carolina, the author conducted research to determine the effects of mission aviation on remote communities of missionaries, social workers and governmental officials

working to improve the lives of isolated people in developing countries. Zibell observed Missionary Aviation Fellowship using light aircraft providing transportation to remote areas in Indonesia, Mali and Ecuador. He found that aircraft are most beneficial and effective to workers in areas with poor surface transportation (Zibell, 2001).

A 2006 honors thesis, *A Brief Study of the History of Missions Aviation* was written by Joseph A. Sanders. In it, the author documents advancement of modern missions through the use of aviation since the end of WW II for the transportation of goods, supplies and personnel to and from the mission field. He documented that which used to take months could be achieved in days with the use of the airplane. He also discovered today, there is an increasing shortage of mission aviation pilots as few graduating from Christian colleges with missionary pilot training ever make it to the mission field (Sanders, 2006).

In 2011, Lane Sunwall at the University of Wisconsin-Madison wrote a master's thesis entitled: *The Mission Aviation Fellowship: A Case Study Demonstrating the Importance of Mission Aviation in the Twentieth-Century Christian Mission Movement* (Sunwall L. , 2011). In his thesis, Sunwall explores the very early years of missionaries utilizing aviation in Australia and New Zealand in the 1910s. Theoretically people believed aviation could be utilized, but did not know how. These efforts ended in failure because of the inefficiency of the aircraft of this era. However, as in the world of aviation in general, it was a time of exploration and experimentation regarding the application of aviation. Aviation advances in the 1930s made its use in missions more practical, but was ultimately stymied by World War Two. One church's aviation program in New Zealand ended when their pilot returned to Germany. At the end of World War Two, both the British and the Americans formed missionary aviation groups; the Americans modeling theirs after the British, both with research foundations to document and

analyze aviation's effectiveness. In America, Missionary Aviation Fellowship (MAF) publicized the wonders of the airplane and flight and what it could do. These roots are still evident today with a foundation in research examining cost effectiveness and outcomes which were in part, thought to be key to MAF's success where others had failed. Following World War Two, the use of aviation for missions congealed, with a surplus of pilots and machines which were both viable and cheap. Mission aviation, "took off" and has brought us to where we are today (Sunwall, L., personal communication, February 14, 2013).

All these research studies, from the 1940s to the present era, appear to have documented and justified the application and utility of aviation in missionary activities. Dozens of brief articles and books written about personal experiences in the field of mission aviation can be found in various academic databases, discussing the application and utility of aviation in promoting missionary activities. These are most often mentioned in a Christian context. There is documentation of the challenges and difficulties faced by these small aviation operations, most often located in remote regions of the third world. They faced the same obstacles as other general aviation operations, with the maintenance of older aircraft and the lack of aviation grade gasoline, or avgas in remote regions. For example, the unique needs of missionary aviation has spawned the development of a new generation of aircraft, the single engine Kodiak powered by a PT-6 engine using the more abundantly available jet fuel, Jet A, in 2004 (JAARS, 2013).

A search of the World Wide Web references multiple organizations involved in mission aviation. They include Mission Aviation Fellowship (MAF), established in 1945 and Jungle Aviation and Radio Service (JAARS) established in 1948.

Today, MAF has a diverse fleet of more than 140 single engine aircraft, Cessna 206s; Cessna 208s Caravans and Quest Kodiak 100s serving 55 countries in Asia, Africa, Eurasia and

Latin America for religious and humanitarian services to include: evangelism and church nurture; disaster response; training and development; medical assistance and community development. These statistics are offered from their website:

In 2011, the Mission Aviation Fellowship fleet executed 33,047 flights, logged 2.7 million miles, transported 98,610 passengers, and delivered 8 million pounds of cargo—all on 1,700 remote airstrips or waterways. More importantly, MAF saved 60,403 days of travel time—or 250 work years—over the course of 12 months. Redeemed for productive Kingdom work, these 60,403 days exceed the equivalent of 83 three-year terms of missionary service. (Mission Aviation Fellowship, 2013, p. 1)

JAARS serves the countries of Brazil, Cameroon, Indonesia, Papua New Guinea, Peru and Tanzania with their aviation services using the Kodiak, Cessna 206, Beech Super King Air and Pilatus PC-6 and PC-12 aircraft in helping local, in country partner, start and run flight programs for Bible translation, medical evacuations and disaster relief work in some of the world's most remote rainforests, mountains, deserts and islands. William Cameron Townsend co-founded Wycliffe Bible translators in 1934 and JAARS in 1948 (JAARS, 2013).

The search of the web also rendered one most interesting and unique resource. From Global Mapping International (GMI), Strategic Mission Research and Mapping, of Colorado Springs, CO, came a 2007 “ multi-year research project looking at the present and future of mission aviation” (McGee, 2007). Entitled the FlightPlan Project, this was a three phase project started in 2003. This study examined the belief of an ongoing change in focus and in approach to Christian missionary efforts: global aviation missions were trending away from their traditional emphasis in overcoming physical geographic barriers with a new and greater focus in overcoming political, cultural and religious barriers. An interesting trend was identified in this

report of “second generation” pilots entering the field of mission aviation as a second career later in life, after having been professional pilots in the commercial setting. The evolving role of mission aviation in this era was also examined (McGee, 2007).

As enticing and exciting as this report initially sounded, a review of the limited portions of this proprietary report available online seemed, in essence, to promote strategic planning and focus on new business models for aviation based ministry. Seven models for the advancement of the Gospel were given: the Agile Provider in a world characterized by constant change; the Nation Developer for the development of transportation and communication infrastructure; the Field Opener for efficient air access to remote areas; the Tribal Advocate for the advancement of indigenous people with modern technologies; the Microaviator, those that use their own small aircraft who consider themselves first missionaries, and secondly aviators; the Business Creator, an entrepreneur developing aviation related businesses for the creation of good will and jobs for locals to improve their livelihoods; and finally, the Resource Broker, capitalizing on being good stewards of low-cost, high-value resources.

Other FlightPlan Project findings included: the continued global growth in population size, and isolation of rural populations without access to all-weather roads to more than one billion people; the continued growth of aviation in the third world to include China, India and Indonesia; and a continued need for the training of missionary pilots. It was discovered many potential pilots do not make it into the mission field because of student debt and lack of experience, creating a need and opportunity to improve the transition from school to the field. The missionaries in the field also face obstacles of accessibility, isolation, cost, cargo transportation, and safety and security.

The FlightPlan Project also looked at enterprises which were “near neighbors” to mission aviation. These organizations included non-sectarian organizations providing humanitarian services through aviation; commercial entities that complement or parallel mission aviation such as air taxi services and fractional jet ownership; organizations in the mission aviation supply chain such as Quest aircraft, maker of the Kodiak aircraft, and aviation training schools; logistic industry and governmental agencies participating in relief aide; and finally, competitors to Christian based relief and missionary efforts such as the Islamic Aga Khan Development Network (Aga Khan Fund for Economic Development Aviation Services, 2013).

Other internet resources for information about mission aviation included: The World Christian Resource Directory for Aviation Ministry providing an extensive listing of domestic and international aviation ministries, schools and colleges (Mission Resources, 2013). The International Association of Missionary Aviation provides a listing of seventy member agencies and member schools. Its goals are to foster relationships between aviation training schools and mission organizations; promote the sharing of information about safety and technical problems; encourage indigenous training programs; share the amazing and miraculous story of missionary aviation; emphasize safety and safe practices; and to encourage members in their ministry of missionary aviation (International Association of Missionary Aviation, 2010).

Formal education programs for the training of missionaries in aviation have existed since the 1940s and 1950s. One of the oldest schools providing aviation training for missionaries is Moody Aviation, of the Moody Bible Institute. Their flight program was established in 1946. Another longstanding institution is LeTourneau University of Longview, TX whose aviation program was established in 1956. Many other flight and maintenance programs exist today within the United States for the training of mission aviators.

Another important concept revealed in the review of the literature on faith-based mission aviation is the existence of an informal network of aviation service providers in mission aviation. This network allows for the efficient and cost-effective provision of services usually outsourced such as safety management, maintenance and engine and aircraft overhaul. Four key providers include: Missionary Maintenance Services Aviation, Missionaire International, Covington Aircraft and Missionary Safety International.

Missionary Maintenance Services Aviation (MMS), of Coshocton, Ohio “prepares people and planes for worldwide mission service” (Missionary Maintenance Service Aviation, 2009, p. 1). This unique organization contributes its services for the rehabilitation and service of missionary aircraft. They have a multi-year program for preparing people for aviation maintenance based missionary service. They charge only for the parts used in servicing the aircraft, from routine maintenance to reconstruction. They have a vision and a plan to help create successful aviation maintenance missionaries. Missionary Flight International’s DC-3 TP N200MF is currently undergoing overhaul at MMS (Missionary Maintenance Service Aviation, 2009).

Missionaire International in Tompkinsville, KY, prepares people for a career in missionary aviation through maintenance and flight training, biblical studies, mission field preparation and support raising. Missionaire International also rehabilitates and prepares aircraft for missionary flight operations. Their vision is to spread the gospel of Jesus Christ throughout the world by means of aviation. They have three primary goals: training people to become missionary aviators and placing them in service; locating, restoring, and supplying Christian organizations with suitable aircraft; and providing operational services of aircraft in unreached areas of the world (Missionaire International, 2011).

Covington Aircraft, of Okmulgee, OK specializes in radial and turbine engine service and overhaul, especially the PT6A which powers MFI's two DC-3 TPs. Currently the engines on one of its two airplanes are being overhauled by Covington. Covington is often used by faith-based aviation organizations who believe it is the perfect partnership to further the work of the Lord in spreading the Gospel (Covington Aircraft Engines, 2013).

The motto of Missionary Safety International (MSI), of Elizabethton, TN, is "meeting the safety needs of mission aviation" (Missionary Safety International, 2012, p. 1). Their on-site observational safety and security surveys and audits highlight strengths and weaknesses of mission aviation programs and focus on accident prevention. They conduct safety seminars for safe aircraft operations and operational security, onsite accident investigation, and offer consultative services for safe, efficient and secure operations utilizing new technologies, techniques and products. As most mission aviation organizations are small in size and may not have their own safety department, MSI provides an essential service. MFI is a customer of MSI (Missionary Safety International, 2012).

Basler Turbo Conversions of Oshkosh, WI is the primary source for DC-3 conversions, the DC-3 TP (turboprop), since 1990. These aircraft are used worldwide in a variety of commercial applications (Basler Turbo-67, 2010). Today, such a conversion, although very versatile, costs \$6.5 million (Basler International, 2010). Some have suggested more contemporary multi-million dollar aircraft are available for use in mission aviation today such as the Shorts S360-300, a boxlike high wing twin engine aircraft, or a Casa CN 235 resembling a twin engine C-130 (Holden, 2007).

The DC-3 was known as the airplane that changed the world. It was the first aircraft that made airlines profitable without air mail subsidies. When introduced in 1935, it was a

revolutionary airplane, without equal, making cross-country transcontinental service in eighteen hours with three fuel stops. In the military version, 1,200 aircraft dropped 20,000 paratroopers on D Day. Basler, of Oshkosh, WI has been doing DC-3 conversions since 1955. For decades, the DC-3 has been known for its versatility and economy of operations (Ostrow, 1985).

A review of the literature to ascertain the efficacy and utilization of the converted DC-3, the DC-3 TP in another organization, documents Samaritan's Purse, of Boone, NC, utilization of the aircraft for relief efforts in ferrying passengers and cargo in Africa (DeMoss News, 2002). An interview with a former Samaritan's Purse and MAF pilot with extensive DC-3, radial and turbo powered experience provided insight into his lengthy experience with this aircraft and its use in Africa for humanitarian and mission based operations. The flight crew in such situations functions not only in piloting the aircraft, but also in its loading, unloading and refueling. In this setting, with a large, multiengine aircraft such as the DC-3 with large payloads, the work is backbreaking. Neuenschwander also found it to be most rewarding as his efforts helped in the rebuilding of clinics, school and over 300 churches in South Sudan, and helped support over 100 workers in Sudan. He found the DC-3 TP to be incredibly versatile. Routinely, they employed short field take offs and landings allowing them to take large payloads into small landing strips. The aircraft also did incredibly well in mud and soft soil.

It's not just any airplane that can land at a dirt strip that is only 2,200 feet long while weighing about 25,000 pounds! We used a technique that is basically to touch down in a three point stall at the end of the runway. The turbine engines having beta and reverse helped tremendously with stopping as well. Then for takeoff we would also be able to get airborne well below normal rotation speed and accelerate in ground effect which reduced the amount of runway required for ground roll. All in all it's probably the most

versatile airplane I've ever flown. (Neuenschwander, K., personal communication, February 4, 2013)

As a pilot, he appreciated the cruise speed of two hundred knot, fifty knots faster than its radial powered counterpart. Not only did he appreciate the greatly improved performance of the turbo propped DC-3s, he appreciated that they were largely maintenance and trouble free.

The man hours we used to put on the radial DC-3s all but went away as all we rarely had to do with the turbine engines was to do continuing inspections at hourly intervals. No more finding and fixing oil leaks. (Neuenschwander, K., personal communication, February 4, 2013)

He also offered some interesting thoughts about being the flight crew in mission aviation and the importance in knowing your passengers and their missions.

Getting to know your passengers personally does really make a difference in how you look at them and what they are doing. I have found that you have to be the kind of pilot with a personality that wants to be involved. Mission aviation attracts the type A personality pilots who also have a real heart of caring for those around them which is different than in the commercial world. (Neuenschwander, K., personal communication, February 4, 2013)

AGAPE Flights, of Venice, FL provide similar flight and support services for missionaries in the Caribbean. As a Christian organization, they utilize a more modern aircraft, an Embraer 110, regularly transporting cargo and mail, but no passengers, in support of more than 300 missionaries and their families in Haiti (AGAPE Flights, 2012).

A major event for MFI was their change from a FAA Part 91 operation to a Part 125 operation in 2008. According to the FAA, Part 125 was issued in November, 2007 to

substantially upgrade the level of safety for large planes formerly operated under Part 91 regulations. This was done to establish uniform certification and operational rules for large airplanes, defined as having a seating capacity for twenty or more passengers or a maximum payload of 6,000 or more pounds not involved in common carriage. MFI is involved in private carriage, and these definitions cover MFI's DC-3 aircraft and operations (FAA Commercial Operations Branch Part 125 Operations, 2012).

On the subject of an organization using, large, heavy, multiengine aircraft to deliver regular, routine service in the support of missionary services, the niche is still very small and unique to an organization such as Missionary Flights International. A wealth of information about Missionary Flights International was available from their website. It included historical data, information about their mission, vision and purpose, personnel, policies and procedures, field reports, flight and aircraft data, contact information and a lengthy listing of more than three hundred missionary affiliates the organization supports. Other sources of information from the website include archived information and newsletters. Video recordings were available on their website as well as YouTube documenting MFI's flight activities (Missionary Flights International, 2013).

Their book, *Shaking Ground Unshakable Faith: Stories of God at Work in the 2010 Haiti Earthquake Relief Effort* (2010) provides great insight into their organization and its activities. Written by Richard Snook and Harold Martin, two leaders of MFI, they compiled a series of essays of short anthologies and vignettes of the hours, days, weeks and months following this catastrophic earthquake for the people of Haiti, and the international community which came to their rescue. For decades, Haiti has been served globally by hundreds of Christian missions. With this service came the foundation for the rescue of the people of Haiti following the earthquake.

The story is told primarily from the perspective of MFI in Fort Pierce, Florida. More than 700 miles away, MFI has routinely served Haiti twice weekly with their vintage fleet of DC-3s, ferrying people and cargo to and from the island nation. Once in Haiti, these people and cargos embark on an island network of Kodiak aircraft operated by Missionary Aviation Fellowship (MAF). Together, these two organizations created a hub and spoke system! This story is of the air network, a lifeline that was established in the first week following the earthquake which continued for months into 2010. MFI had its first aircraft on the ground in Port-au-Prince within 24 hours of the earthquake. Soon, seven daily flights were ferrying essential, lifesaving cargos and provisions; medical and rescue personnel to the island from Ft. Pierce. Hendricks Motorsports and Joe Gibbs Racing contributed four Saab 45 aircraft to complete the fleet of MFI's DC-3s for this continual airborne convoy (Snook, Budensiek, & Martin, 2010).

Another useful resource is a book written by MFI founder Don Beldin, entitled, *Yours for a Meeting in the Air: 60 Years with God as my Co-pilot* published in 2007, it chronicles the first three decades of MFI's history. It is an autobiographical work, in which Beldin writes of flying in the Bahamas in the early 1960s for a youth evangelism ministry, delivering supplies to missionaries and piloting ambulance flights. MFI was established in 1964 and in its early days, it flew Beech-18 aircraft from Florida to the Caribbean. Years later, in 1976, they acquired their first DC-3 from Moody Aviation in Elizabethton, TN; further evidence and belief in God's providence that continues today (Beldin, 2007).

From the MFI website, we can ascertain essential information about the DC-3 aircraft. First developed in the 1930s, it first flew for commercial airlines in 1935. The military version, the C-47, flew for the United States military in World War Two and was considered vital in winning the war. It was known for its versatility, safety and dependability. Over 12,000 DC-3/C-

47s were produced by Douglas Aircraft Company from 1935 to 1946, and 1,000 remain in service today. Twin engine, it was originally powered by the Wright R-1820 Cyclone. Later it was powered by the Pratt & Whitney R-1830-S1C3G Wasp radial piston engines. The updated turboprop version is powered by two Pratt & Whitney PT6A-65AR turbine engines. Currently, MFI operates two DC-3 TP, DC-3 turboprops. They cruise at an average speed of 225 mph, consuming 150 gallons of Jet A fuel per hour. They have a maximum fuel capacity of 1,030 gallons. The passenger cabin can be configured for thirty-two. MFI first started DC-3 operations in 1976; acquired its first turbo propped DC-3 in 2003, and converted to an all turbo prop fleet in 2011. There are significant differences between each aircraft. The older, radial powered DC-3 aircraft require engine overhaul every 1,800 hours (TBO) and has the following specifications: a maximum useful load of 8,620 pounds; maximum useable fuel load of 804 gallons; maximum rate of climb of 1,200 feet per minute; maximum certified ceiling of 20,000 feet; a normal cruising speed of 155 knots at 12,000 feet; maximum range of 1,132 nautical miles and a maximum payload with zero fuel of 8,520 pounds. The DC-3 TP require engine overhauls every 6,000 hours (TBO) and has the following specifications: a maximum useful load of 11,800 pounds; maximum useable fuel load of 1,030 gallons; maximum climb rate of 1,560 feet per minute; maximum certified ceiling of 24,000 feet; a normal cruising speed of 195 knots at 12,000 feet; maximum range of 1,341 nautical miles and a maximum payload with zero fuel of 10,300 pounds. MFI's two DC-3 TP aircraft are tail numbered N200MF and N500MF. N200MF was originally built in 1943, rebuilt in 1989 and was acquired by MFI in 2003. It is currently undergoing a major overhaul and updating with new engines and avionics in Ohio. N500MF was originally built in 1944, and was restored and updated in 2011 (Missionary Flights International,

2013). N400MF is a radial powered aircraft currently in storage at MFI undergoing renovation and restoration.

The DC-3 aircraft is still known for its ability to fly into unimproved airstrips, its versatility, dependability, safety and economy of operation. In 2011, MFI flew 1,600 hours and 275,000 miles, with an average of four flights per week to Haiti, the Dominican Republic and to the Bahamas, with 270,000 pounds of hand loaded luggage and 230 tons of essential supplies and cargo (Missionary Flights International, 2013).

Finally, it is important to have a brief understanding of the history, demographics and geography of the island of Hispaniola and the country of Haiti. Hispaniola, formerly Española, is the second largest island in the Caribbean. It is in the West Indies in the Greater Antilles, between Cuba and Puerto Rico. The island is divided east and west into the Dominican Republic (east) and the Republic of Haiti (west) with an island area of 29,418 square miles, being 400 miles in length and 150 miles in width. Haiti occupies approximately one-third and the Dominican Republic two-thirds of the island. The central area of the island consists of several mountain ranges. Its highest peak is 10,417 feet in elevation in central Dominican Republic. Geographically, the island consists of mountain ranges, long valleys, and plains creating variations in climatic conditions and barriers for ground transportation. The island has few protected deep-water harbors. Its highlands and mountains are generally forested and sparsely populated. In Haiti, due to its population, these areas are generally deforested and are cultivated. Prevailing northeast trade winds create tropical northern and arid southern regions on the island (Encyclopædia Britannica, 2013).

Hispaniola was first discovered by Christopher Columbus for Spain in 1492 who named it “La Isla Española”, the most beautiful island in the world. This name was later changed to

Hispaniola. The island's strategic location in the Caribbean was essential to Spanish colonization of the region into Cuba, Mexico, Panama, and South America. Disease and slavery were incidentally introduced to the island by the Spanish conquistadors in 1501 resulting in the destruction of the indigenous Arawak peoples. The Spanish ceded the western third of Hispaniola in 1697 to the French, which later gained independence from France following a revolution in 1804 becoming the Republic of Haiti. The remainder of the island gained colonial independence in 1844 becoming the Dominican Republic. With European colonization, the island was known as the "Pearl of the Antilles" for its agricultural prosperity (World Atlas, 2013).

The current population of Haiti is 8.7 million and 9.3 million in the Dominican Republic. Today Haiti is the most impoverished nation in the western hemisphere clearly documented with per capita income, infant mortality rates and life expectancy data. Per capita income in Haiti is \$1,300; Dominican Republic \$9,400; Jamaica \$9,100; Cuba \$5,460; Puerto Rico \$17,400; United States \$ 41,000. Infant mortality rates per 100,000 births in Haiti 52; Dominican Republic 21; Jamaica 14; Cuba 5; Puerto Rico 8; United States 6. Life expectancy in years in Haiti 62 (30 years in 2010 due to the 2010 earthquake with more than 220,000 fatalities); Dominican Republic 77; Jamaica 74; Cuba 77; Puerto Rico 76; and the United States 78 years. Population density in Haiti is 353; Dominican Republic 207; Jamaica 262; Cuba 100; Puerto Rico 268; and the United States 32. In summary, Haiti is a densely populated country, impoverished, with a low standard of living, significantly lower income and life expectancy and significantly higher infant mortality and population density than its Dominican Republic neighbor (Index Mundi, 2013).

On January 12, 2010, the nation of Haiti was struck by a 7.0 Richter scale earthquake, killing 316,000, injuring 300,000 and leaving more than 1.3 million people homeless. More than

a year after the earthquake, one million Haitians remained homeless. The earthquake had an estimated economic cost of nearly \$14 billion to this already impoverished nation (United States Geological Survey, 2013).

In conclusion, Missionary Flights International (MFI) occupies a most unique niche in flying modernized DC-3 TP aircraft for flying missionaries to the Republic of Haiti and the Dominican Republic on the island of Hispaniola. This study was conducted to gain greater insight and understanding into the mission and purpose MFI, their daily routine, and the challenges they face in maintaining their flight service to Haiti. The research question, what is the purpose, scope and value of MFI's faith-based mission aviation services, guided the conduct of this study. A qualitative, ethnographic study through cultural emersion into this organization was undertaken to gain an understanding of this little known aspect of civilian aviation, and document the activities of a faith-based aviation organization. There is a lack of relevant published academic, scientific or research literature documenting and describing this sector of faith-based general aviation organizations to provide external evidence confirming the scope and value of these aviation operations. Empirical studies and trials do not apply to this research design.

CHAPTER II – RESEARCH AND DATA ANALYSIS METHODOLOGY

Qualitative ethnographic techniques were employed with the goal of writing an in-depth narrative describing the mission, vision, purpose and challenges of Missionary Flights International, its services and unique niche, and the organization's most valuable commodity: its people. Triangulation through interviews with personnel, such as passengers and customers outside of the organization, provided a means for confirming and validating data and observations to the value and validity of services offered by MFI.

Triangulation, the use of multiple sources of information through data acquisition and observation, was utilized to identify consistencies and contrasts, commonalities and patterns within the organization. This approach allowed for the examination of internal (within the organization), and external (outside the organization) sources. Internal examination was through interviews and observation of MFI personnel and operations. External examination was through interviews with the clients, patrons, benefactors and sponsors of MFI, both on-site and remotely. Stakeholders on-site were interviewed at the time of the visitation. Others inquiries were conducted post visit, with those individuals who have utilized or benefitted from MFI's aviation services. This method of inquiry provided three distinct data points, sources or layers of information to compare, confirm, verify cross-check and validate observations from different vantage points. This approach created a more diverse, precise, fuller, complete and comprehensive picture of MFI, and provided a broader means of interpretation and validation.

From the raw data of multiple source interviews, audio and visual recordings, and from five days of participant observation, a mass of information was obtained and assembled for analysis. A constant comparative method was applied to identify common elements, themes and

patterns, and to identify common threads woven throughout the fabric of the organization and its culture.

An ethnographic approach requiring cultural immersion in a single group is utilized to study a group and its culture, versus a case study focusing on a single issue shared by multiple groups. Grounded theory is a qualitative method focusing on how a derived theory about a phenomenon is grounded in the data from that particular setting (Gay, Mills, & Airasian, 2009). Ethnographic research is a qualitative approach for the study of the cultural patterns and perspectives of participants in their natural setting (Gay, Mills, & Airasian, 2009). Combining the grounded theory method with an ethnographic approach, one strives to describe the culture of a study group.

The Rationale for Ethnographic Research

Grounded theory allows for the development a theory from the examination of individuals sharing the same process, action and interactions. When the study participants are located in the same locale, sharing a common pattern of behavior, beliefs or language an ethnographer is interested in examining these same things in a unit analysis of twenty or more individuals in a study focusing on an entire cultural group (Creswell, 2007). Ethnography is a qualitative research method by which one describes and interprets the shared and learned patterns of values, behaviors, beliefs and language of a common culture-sharing group. Ethnography requires the development of trust and trusting relationships through which the researcher is allowed into the study subjects' world. It also requires extended participant observation and immersion in the day-to-day lives of the studied population to examine behavior, language and interactions amongst the members of the culture-sharing group (Creswell, 2007).

There is no single way to conduct ethnographic research. A culture sharing group has shared language, patterns of behavior, and attitudes which must be identified allowing for the discernment of patterns. Selected cultural themes or issues are identified through analysis of the culture-sharing group. In observing people in their normal interactions, one attempts to discern pervasive patterns such as life cycles, events and cultural themes. These themes emerge from behaviors: what people do; language: what they say; and artifacts: what they make or use. The ethnographer strives to describe a holistic perspective including history, religions, politics, economy, environment, social structure and kinship. From this an image of both structure and function emerges. Through fieldwork information is gathered in the natural setting of where the group works and lives. On-site research requires the wide collection of data from a variety of individuals and sources. Fieldwork requires sensitivity, respect, reciprocity and ethical behavior (Creswell, 2007).

Ethnographic data is organized from multiple sources with the development of themes for the description and interpretation of the culture-sharing group. Such detailed descriptions of the culture-sharing group are developed through focusing on a single or on multiple events, or activities shared by the group over an extended period of time. This allows for the identification of common or repetitive patterns or topics with the subsequent development of themes describing how the cultural group works and lives. The final product is a holistic cultural portrayal incorporating the views of the study group. This view allows the reader to learn of the culture-sharing group as well as of the researcher's interpretations. Ethnography requires extensive time in the field to collect data. Narratives are often written in a literary storytelling approach requiring sensitivity to the culture-sharing group (Creswell, 2007). In ethnography, the intent is to determine how a culture-sharing group works rather than understanding or

studying a specific, single issue or problem as in a case study in a bounded system (Creswell, 2007).

Authors L. R. Gay, Geoffrey E. Mills and Peter Airasian, in *Educational Research: Competencies for Analysis and Applications*, in 2009, state that qualitative research seeks to probe deeply into the research phenomenon to obtain an in-depth understanding of culture, of the way, why and how of things are; to obtain a picture through painstaking and sustained in-context research allowing for the revelation of subtle, buried personal understandings (Gay, Mills, & Airasian, 2009). Interpretative investigation in ethnographic qualitative research focuses contextually in-depth on a group's cultural patterns and perspectives to understand participants' behavior in their normal setting performing normal activities (Gay, Mills, & Airasian, 2009).

During the data collection process, the ethnographer seeks to identify recurrent themes, sorting them in categories, adding new categories as new themes and topics arise. This process relies on one's ability in analyzing and synthesizing the qualitative data to create coherent and meaningful descriptions as a holistic description of a culture. Such a report includes commonly shared understandings and beliefs of the participants; a discussion of how these beliefs relate to life in their culture, and a discussion of how these findings compare to the published literature of a similar groups. If successful, a picture is created enabling someone not in the culture to know how to think and behave in that particular culture (Gay, Mills, & Airasian, 2009).

Gay states the essential qualifications for an ethnographic qualitative research study include both objective data collection and analysis to reach valid understandings and conclusions. This is accomplished through immersion in the research setting. The central focus of qualitative research is to have an understanding of a social settings or activities from the vantage point of the research participants. This is accomplished with the collection, over time, of

narrative and visual data in a natural, non-manipulated setting observing personal interactions. Detailed recording of these processes in the natural setting provides the foundation for understanding the setting, the participants and their interactions. In the absence of such intimacy through immersion in the research environment, the search for understanding would elude the qualitative ethnographer (Gay, Mills, & Airasian, 2009).

In ethnographic qualitative research, one focuses on inductive analysis for the sake of discovery and understanding. Qualitative data are analyzed inductively without the imposition of an organizing structure or in making assumptions about findings prior to the collection of evidence (Gay, Mills, & Airasian, 2009).

In Creswell (2007) and in Gay, et al (2009) we are cautioned to avoid the temptation for drawing premature conclusions by not adhering to a rigorous analytical method. This may lead to superficial or erroneous conclusions. One must remain open-minded and be patient in avoiding haste creating serious flaws and erroneous findings and conclusions. In qualitative research, one must avoid making premature decisions or assumptions about the study and must remain open to alternative explanations, waiting until they are in the research setting before making any tentative decisions based on initial data findings and analysis. With this analysis, one seeks to accurately find patterns, relationships or common themes. The greater the data base, the more robust the foundation for the inductive analysis (Gay, Mills, & Airasian, 2009).

Ethnography represents a realistic and objective account of observations of the situation, written dispassionately in the third-person voice of the information learned from participants at the studied site. In this process, the researcher remains in the background as an omniscient observer and recorder of facts and events, objectively reporting data uncontaminated by personal bias, goals or judgments. The author has the final view on how the culture is to be interpreted

and presented (Creswell, 2007). The report should be written with an emic (participants) view, and an etic (researcher) view (Creswell, 2007). Finally, the study should be clear, detailed, descriptive and representative of the voices of the participants. It should also be descriptive of the researcher's role, biases and preferences in the process (Gay, Mills, & Airasian, 2009).

Rationale for a Qualitative Approach

Authors Glaser, Strauss and Corbin in the 1960s and 1970s first developed the concepts and methods of grounded theory and the constant comparative method to bring a scientific and analytical approach and credibility to qualitative research. It first must be decided if the grounded theory and the constant comparative method are best suited to be used in research. This approach is appropriate when a theory is not readily available to explain a process. When a theory "is needed to explain how people are experiencing a phenomenon, the grounded theory developed by the researcher will provide such a general framework" (Creswell, 2007, p. 66).

Grounded theory with a constant comparison method is a contemporary, dynamic approach to qualitative research which is a "bottom-up" method for the identification of emerging common and recurrent trends, and themes from ongoing data analysis, with the ensuring development of hypothesis and theories about phenomena. A more traditional and conventional "top-down" approach creates a theory or hypothesis in advance and data is derived to justify the hypothesis of study (CPR Journal, 2013).

Without foreknowledge, preconceived prejudices or beliefs, one is empowered to prospectively construct and develop concepts and theories from the amassed raw material or data. Through this mining or drilling process, free from the burden of attempting to justify a pre-constructed hypothesis, with research data and from observations, one is able to develop and identify commonalities and create tentative theories.

According to Creswell in *Qualitative Inquiry & Research Design*, with a systematic grounded theory approach with the constant comparative method, the investigator seeks to systematically and analytically develop a theory explaining process, action and interaction of a topic (2007). Typically, twenty to thirty interviews will be conducted over the course of several field visits, collecting interview data, finding additional data to saturate categories until no additional data can be found. A category is a unit of information of observed events, occurrences and instances. With the collection and analysis of observations and documents, analysis commences in a “zigzag” process, returning to the field to gather information, and returning to the office for data analysis, back and forth. Those interviewed are theoretically chosen to best form the theory. The number of passes that one makes to the field is determined by the saturation of categories and the elaboration of the theory in all of its complexities.

These two examples demonstrate the constant comparative method by which an initial, preliminary substantive-level theory is derived and established. One illustration might be someone seeing a deck of playing cards for the first time. Dealing them one at a time face up, certain patterns would become progressively apparent: black or red in color; face cards or numbered cards; and symbology of spade, diamond, heart or club. These patterns, once identified, could allow for sorting. However, as the patterns emerged, intuitively, sorting could begin before the entire pack of cards was revealed.

The constant comparative method is akin to a farmer cultivating a field uncovering unapparent and initially unseen, invisible, embedded or buried stones just beneath the surface containing potentially important elements. These stones are identified, picked up and carted to the side of the field for further scrutiny, analysis and examination. Each stone may constitute a cultural gem of the organization, its people, values, practices and principles. In keeping with this

method, the farmer progressively and recurrently cultivates his field looking for newly uncovered stones. As these stones are unearthed, set aside and examined, there is an ongoing attempt through the constant comparative method of identifying commonality and recurring themes. Are these stones random and miscellaneous, or do they have a commonality and interrelation? Stones as fragments of a larger piece are reassembled into a composite mural or picture depicting the phenomenon being studied, in this case, Missionary Flights International.

This process of data collection with comparison to emerging categories is called the constant comparative method of data analysis (Creswell, 2007). From the observational data, open coding commences of data for major informational categories to focus on a core phenomenon and then goes back to the data and create categories around the core phenomenon (Creswell, 2007). The final step in the selective coding process is the development of interrelating propositions or hypotheses assembling a descriptive story of the interrelationships of categories in the model. Lastly, the developed theory can then be articulated towards the end of a study as a narrative or a series of hypotheses or propositions (Creswell, 2007).

Creswell cautions about preconceived ideas and prejudices which may obscure and be blinding. Grounded theory requires one to sets aside theoretical ideas and biases, allowing for the emergence of an analytical substantive-level theory from systematic research and data analysis. Difficulties may occur when categories are not saturated or if a theory is insufficiently developed. Deliberate, discriminant sampling allows for additional information from additional participants. From this, a central phenomenon, causal conditions, strategies, conditions and context and consequences can be developed (Creswell, 2007). With coding, a story line may be developed connecting categories and hypotheses. A preliminary, tentative, substantive-level theory may be developed close to the emerging specific theory being developed through

memoing by which one begins to record ideas about an emerging or evolving theory from the coding of data (Creswell, 2007).

Preparation

A research proposal for the proposed topic had been previously submitted and approved by the Department of Aerospace on November 16, 2012 (Appendix C). Research and investigation of the proposed organization was done in advance from information available on Missionary Flight International's website, in printed materials, as well as through telephone interviews with key personnel within the organization. Consent to participate was obtained from the organization in advance of the proposed visit (Appendix D).

A thirty minute telephone interview was conducted on October 5, 2011 with Joseph Karabensh, executive Vice-President and pilot/mechanic/missionary with MFI who provided information and personal insight into MFI's mission and daily operations. At that time, an invitation was given to visit MFI's base in Ft. Pierce to observe and participate in their flight activities and operations to Haiti. A follow-up conversation on September, 12, 2012 of fifty minutes reconfirmed a willingness to partner in this research project, allowing full access for observation and interviews with MFI personnel and for participation in their routine activities and operations. A tentative visit of approximately five days duration was planned for early January, 2013. A finally preparatory telephone conversation with Mr. Karabensch of forty minutes on November 12, 2012, confirmed a planned visit from Sunday, January 6, 2013 through Saturday, January 12, 2013. In this discussion, further details were offered about MFI's organizational structure with the specific intent of developing interview questions and for the identification of specific departments or entities to be interviewed during the visit. There was also agreement to interview outside sources, clientele, patrons and supporters of MFI to validate

the value of their services, and to provide a means of triangulation for verification of the research premise. In order to effectively discover and to understand the culture, beliefs, values and motives of MFI, and to become immersed in the organization, an on-site visit was necessary.

The visit to MFI in Ft. Pierce, FL. was planned to include, but was not limited to, introduction to staff, on ground observation of operations to include aviation management, aircraft preparation and loading, aircraft maintenance, flight operations and preparation, pilot briefing and debriefing with opportunity for interviews of paid and volunteer staff, and of clientele served by the organization. There was an opportunity to observe and participate in ground and flight activities in Fort Pierce and in Haiti.

There were no risks anticipated to the study participants. No extraordinary risks were envisioned aside from those associated with travel to the on-site locations. The researcher bore the expense associated with the research. Neither the researcher nor any of those involved in this study benefitted financially from this endeavor.

The researcher is a trained and licensed aviation pilot, with classroom and laboratory experience in aviation and aerospace to include pilotage, maintenance, safety, and airport and airline management. The researcher has successfully completed Middle Tennessee State University graduate courses on research methodologies and statistical analysis. The researcher has three decades of experience in conducting one-on-one interviews with open ended questions and in distilling and documenting interview data in a coherent format.

Benefits of the study include an academic, scholarly study and documentation of faith-based mission aviation based in the United States serving an area of need in the western hemisphere, and creating a final story, complete with plot and characters, documenting the activities of Missionary Flights International.

Method

Informed, written consent was obtained from the participants at the time of interview data collection. All interviews were conducted with adults and none with minors. See Appendix A for Institutional Review Board, IRB approval. See Appendix B for informed consent document. MFI is a relatively small aviation operation, but necessarily has personnel functioning in a wide spectrum of routine essential aviation activities: administrators provide administration, oversight and management; flight crews provide piloting and flight planning; maintenance crews provide mechanical services and maintenance; ramps crews provide loading services; and schedulers provide logistics, etc. Specific departments at MFI include: Administration, Flight Operations, Maintenance Operations, Flight Planning/Loadmaster, Warehouse/Mailroom/Purchasing and Office/Clerical Support Staff.

The questions asked included: what does your organization do, describing the scope and breath of aviation services provided; where and how do you provide these services; why does your organization provide these services, what are their significance? Other questions included an option to describe the challenges, successes, and opportunities faced by the organization. A formal questionnaire of twenty-two points was given to each interviewee with the understanding this was a template for points to be covered and freely expanded upon as needed. These questions were deliberately chosen to help reveal each individual's background, role, experience, perspectives and values. Interview questions may be seen in their entirety in Appendix E. Relevant questions were asked of personnel in each department for a descriptive understanding of each department's roles and tasks in maintaining the organization. Other necessary specialized functions such as customs and immigrations, aspects of international operations and

periodically outsourced services such as maintenance and safety management were also discussed.

Interviews were digitally recorded with a hand held recorder. Field notes were kept for the purpose of recording observations and data, with an end of the day review for amplification and expansion, reflection and clarification with personal commentary, and indications for revisitation for additional exploration and clarification. Observations were of land-based operations and personnel in Florida and in Haiti, inflight operations and activities to and from the United States and Haiti, maintenance of their fleet of DC-3s and interviews with their clients being ferried to and from Haiti.

Following the on-site visit, a transcription of audio recordings and review of field notes, visual recordings, and supporting documents was conducted. The data was analyzed, coded, and themes were identified. The use of multiple methods for collecting data allowed for triangulation and a greater understanding of and validation of the phenomena under investigation. At the discretion of MFI, publically available factual information and data was reviewed, documenting the flight activities of the organizations to include the number of annual flights, number of passengers carried, amount of cargo, freight or mail ferried and annually published financial reports. In addition to interviews of MFI personnel and patrons on premise, where possible and only with permission, interviews were conducted of clientele of the organization to independently document the value and contributions of MFI's operations.

An on-site visit provided ample time for observation and participation in routine daily ground and flight operations. There were opportunities for multiple interviews with personnel engaged in a full spectrum of operations. The opportunity also existed for "revisitation" with participants during the on-site visitation for follow-up interviews for amplification and

clarification. Likewise, later off site revisitation by email and telephone was also welcomed by the interviewees.

Procedure

The groundwork was laid prior to the visit. A letter of introduction was sent to be shared with the staff in December, 2012, announcing the purpose and goals of the one week visit several weeks later in January, 2013. The first day of the visit commenced with a one hour staff meeting, in prayer, and reviewing the activities and concerns for the week. At this time, a formal introduction was made to the staff.

Following a day of orientation and preliminary visits, a listing was given of the twenty-one employees of MFI. Permission was granted for open access to interview each of those listed. Interviews were conducted on four of the five days of the visit. The remaining day was dedicated for a flight to Haiti where there was active participation as a member of the flight crew as a flight attendant.

Of the twenty-one employees, there were five prominent categories denoted by occupation, training and job description. It included those in administration, pilot/maintenance, warehouse/mailroom and purchasing, clerical office staff, and volunteers. A directed, intentional and purposeful sampling of employees in each category was undertaken for both the depth and the scope of this inquiry. Additionally, three interviews were conducted of airport personnel at the Fort Pierce Airport, KFPA, St. Lucie County International Airport, Fort Pierce, FL. By and large, all these people at MFI consider themselves to be stateside missionaries. The MFI staff ranges in age from their twenties to their sixties. The staff has been at MFI from less than one year to more than thirty years. MFI is assisted daily by a great number of volunteers, who in some cases have a functional role as unpaid employees with full time jobs.

The opening interviews were welcoming visits with the executive committee members for the sake of orientation and indoctrination, often accompanied with tours of the operation. These sessions were not recorded with the understanding formal visits would follow later in the week. These first visits helped direct the formal interview process which would follow in the next several days with MFI personnel. These sessions were important for the sake of individual introductions and the initial development of trusting relationships as well as gaining specific conceptual knowledge regarding the organization's operation and structure.

Over the course of four days, six to eight interviews were conducted each day. They ranged in length from ten to eighty minutes in duration. At the commencement of each session, it was stated that this was a graduate research master's thesis project in aerospace for the specific purpose of describing faith-based mission aviation and Missionary Flights International in which participation was voluntary with consent being required, and that data from the interviews would be recorded for later transcription for use in this study and would be safeguarded and protected. All those formally interviewed provided verbal and written consent. At the beginning of each interview, those being interviewed were given a one page questionnaire for the purpose outlining and directing the interview process but not for limiting discussion. See Appendix E for a copy of this questionnaire. The interviews were conducted in a question and answer format with the understanding each person was encouraged to discuss their own area of interest during the interview process as it related to their specific role. The interviews were conducted either in a conference room or in the individual staff member's office. Deliberately, the interviews were casual and conversational in nature. Of note, many within the organization were accustomed to telling their own story in a public format as part of their personal support raising with individuals and churches. The researcher tried to limit his input and interruptions during the interviews,

reminding those being interviewed, “This is your story”. Occasional notes were taken during the interview process. The interview sessions were viewed as a dynamic time of engagement and interaction, with eye contact and verbal and non-verbal acknowledgement in the process. The open ended interview process was essential and soon demonstrated value as unforeseen topics were discussed which provided a foundation for subsequent interviews with others.

Nineteen formal interviews were conducted and seventeen of these were recorded. In two cases, one off site in the U.S. Customs office, and another at MFI, with a clerical office worker, hesitancy was noted regarding the recording process. In these two cases, written notes were taken. Two initial common denominators were denoted of MFI personnel, one being job description and training. The other was “support raising”. Sixteen of the twenty-one employees were responsible for raising their own support, or salary, which is common in many Christian, faith-based organizations.

The largest staff denominator was pilot/mechanic/missionaries. Fourteen of the twenty-one paid MFI employees were pilot/mechanics/missionaries and each had a specific area of interest and responsibility. This included a subset largely involved in administration: four composed the executive committee with titles and responsibilities as President/CEO; Executive Vice-President and Executive Assistant and Director of Operations and were responsible for the daily operation of the organization. Many of the pilot/mechanics/missionaries had specialized areas of interest and service to the organization, to include the logistics of flight planning, flight loading and preparation. Others had oversight in the areas of safety, parts management and hazardous materials. Still others had formal titles and responsibilities as Chief and Assistant Chief Pilot, Check Pilot, Director of Maintenance and Director of Flight Operations.

Pilot/mechanics/missionaries also specialized in maintenance areas of expertise to include welding, hydraulics, sheet metal repair; wheel, brake and tire maintenance and electrical systems.

Two personnel in the warehouse/mailroom and purchasing department were interviewed. Three of the office/clerical staff members were interviewed. Another category interviewed included two members of the board of directors. Several volunteers were also interviewed. Three off site interviews were arranged by MFI as requested of personnel at the airport. This included interviews with the manager of the Fort Pierce Air Traffic Control Tower, the director of U.S. Customs and Immigration at the Fort Pierce Airport, and two members of the Fort Pierce Airport administrative staff.

An opportunity was given to fly round trip from Fort Pierce to Haiti as a member of the flight crew as the required flight attendant on an MFI flight. The aircraft passenger compartment was not conducive to interviews due to noise while airborne and space considerations. Returning passengers from Haiti, in most cases were fatigued and used the return flight as a time for rest. For these reasons, extensive interviews were not possible in this setting with MFI passengers. However, the research purpose of the visit was made known to the passengers when the aircraft was on the ground, with the desire for later telephone interviews and or written response to formal questions via email. Eight adult passengers expressed a willingness and interest, and gave personal contact information and verbal consent to participate in this process at a later date. Although brief conversations were had with those in Haiti involved with the aircraft, no formal interviews were conducted of those in Haiti. Although we landed at three Haitian airports or airfields, ground operations and turnaround times were brief and were focused on aircraft refueling, loading and unloading of cargo, freight and mail, and the enplaning and disembarking of passengers. There was active participation in these activities as the flight attendant.

All interviews were conducted with adults and none with minors. The flight from Haiti had fifteen high school students aboard, eighteen years or younger in age, returning from a week long mission trip.

As similar or larger sized group of MFI customers, unknown to the researcher was surveyed through contact information provided by MFI, for another, independent data set for triangulation research purposes. This group was asked the same questions as those previously mentioned as passengers on the January, 10, 2013 flights to and from Haiti.

Analysis of Data

Data from all sources including written documents about the organization, data obtained at the time of the visit to include visual recordings, sixty-one pages of transcribed audio recordings of interviews, fifteen pages of observational field notes, external sources from MFI customers and patrons at Fort Pierce, FL, and distance responses from MFI customers were examined for common and repetitive themes. These themes were categorized, the frequency or commonality was noted and subcategories of related themes were also developed in keeping with the study's design method.

CHAPTER III - RESULTS

By combining through the amassed data and utilizing a constant comparative method to initially identify potential core phenomena, recurring events and themes were identified. In this process, primary and secondary themes and concepts were identified. The secondary themes were either were supportive of the primary themes as subcategories or were rejected as insignificant.

Data for this study about faith-based aviation and Missionary Flights International was derived from internal sources within the organization, and external sources outside the organization. The internal data was from personal interviews in Fort Pierce, FL with MFI personnel. The external data was from personal interviews with Fort Pierce Airport personnel; questionnaires completed by MFI customers and from five days of field notes and observations. At least four distinct and different data sources of information, allowing for triangulation, were derived for analysis to identify and establish core phenomena. The primary coding came from review of internal interviews, external interviews, and customer questionnaires.

Reams of data were generated and reviewed from an on-site visit of five days: 15 pages of field notes and observations; 19 on site, in person interviews transcribed to 65 pages and 25,000 words of text; 32 pages of feedback from more than a dozen open ended customers questionnaires, and other confirmatory sources.

Interviews with MFI personnel were a key source of primary information. Interviews were conducted with all four members of the organization's executive committee to include President/CEO, Executive Vice-President, Executive Assistant and Director of Operations. These individuals are all pilots/mechanics/missionaries. Interviews were also conducted with seven pilot/mechanics/missionaries that also assist with flight and maintenance operations including the Director of Maintenance, the Director of Flight Operations, Loadmaster, Safety Officer, Chief

Pilot, Director of Purchasing, the Volunteer Coordinator, Warehouse Manager and Parts Manager. Additional interviews were conducted with two members of the Board of Directors, three volunteers and three members of the office staff including the Office Manager.

Three other interviews were conducted with members of the Fort Pierce/St. Lucie County Airport, including the manager of the Fort Pierce ATC tower, the Director of U.S. Customs and Immigration and a joint interview with two members of the airport administration as external sources of data.

Another source of external data was MFI customers. This is essentially one group as they all completed the same customer questionnaire, but are identified in two divisions. One division of eight was from the January 10, 2013 flight to Haiti. Of these eight, seven completed questionnaires for or a response rate of 87.5%. The second division was from customers contacted in advance by MFI seeking the participants' consent. This was a group of twelve and six of these completed the questionnaires, which were electronically submitted by the researcher to these participants. This yielded a fifty percent response rate. In summation, thirteen of twenty questionnaires were completed for an overall response rate of sixty-five percent.

MFI has identified at least fifteen important services they provide. They include: disaster relief, feeding programs, sea shipments, construction teams, youth groups, orphanages, agriculture, church building, education, evangelism, emergence evacuations, Christmas bags, well drilling, mail and package service, and hospital and medical clinic support. Many of these services' value were confirmed by external data sources.

Themes of importance for one group were not necessarily shared by other or all groups. For example, four critical chronological events have occurred at MFI in the past decade. These events include, in 2003 MFI's acquiring their first DC-3 TP with complete conversion of their

fleet in 2011; MFI's relocation of their headquarters to Fort Pierce and the St. Lucie County International Airport in 2005; MFI's coming under FAA Part 125 Operation Regulations in 2008, and the 2010 Haiti earthquake.

The importance of the acquisition and conversion to the DC-3 TP aircraft is held by all three groups. The importance of MFI's relocation to Fort Pierce with a spacious hangar and headquarters is likewise confirmed by all three groups. The significance of the 2010 Haiti earthquake is confirmed by all three groups. However, by contrast, the reclassification from a FAA Part 91 Operation to a Part 125 Operation was important to only those within MFI. It had dramatic impact and significance on the organizations, its personnel and how they provided aviation services. However, the services they offered were unaffected and this policy remained largely invisible to their customers who were likely unaware of this change. The researcher was not present for the previously mentioned events in 2003, 2008, 2010 or 2011. However, with the on-site visit, he could confirm aviation professionalism as being a key value and therefore a potential theme by all four stakeholders.

Twelve potentially recurring, dominant and potentially important themes emerged. They included: aircraft/ aviation/DC-3; culture/history; evangelization/prayer; faith (in God's provision)/ support (fund raising); flight operations; maintenance operations; missions/missionaries; Part 125 Operations; people (human assets); professionalism; serve/service; and volunteers. These twelve very specific classifications were narrowed to four broader themes with subcategories. Once again, for the sake of broader general classifications, as important as some very specific concepts were, such as Part 125 Operations, they were specific and narrowly focused and became subcategories. As important and significant as these Part 125 Operations are, they would most likely fit under a more general category such as professionalism

or aviation. From those twelve themes, four general categories, with subcategories emerged. Those four categories were: aviation, professionalism (professional excellence), missions/missionaries and serve/service. Even the related concepts of serve and service were distinctive from one another. Service, in the case of MFI, is to provide a full spectrum of services for missionaries. Serve was often used in the context of a higher calling and for compensation beyond monetary means.

Deeply embedded within their personal and organizational DNA, is their fundamental purpose of aviation to serve missions and missionaries. This service is through the use of flight, or aviation to overcome geographic barriers and hurdles to create a lifeline to remote island nations of great physical need and poverty. True to their name, daily for the past half century, Missionary Flights International has confirmed the value and utility of aviation, or flight, in overcoming geographic obstacles to serve missionaries.

Furthermore, MFI has been known for its selfless, professional service to these island nations as they serve God and His people. Their consistent goal is to serve those in the missions, missionaries, and they are consistently seeking better ways of serving these clients.

At first glance, this may appear to be overly simplistic; however, the ethnographic data reveals a more complex and compelling story. That story is one of an aviation operation, committed to excellence and professionalism, working as a non-profit organization, flying reengineered aircraft first designed and flown three-quarters of a century ago. They are fully compliant with American and international regulations. They routinely fly over open oceans, more than seven hundred miles south, away from their Florida mainland home, to island nations in the Caribbean and the Antilles.

Even when considering chronological events, the use of aviation for missionary work is deeply entwined, interwoven and intermeshed and cannot be readily extracted or extricated, one from the other. For example, is a zebra a white horse with black stripes; or a black horse with white stripes? Or can one remove the stripes from a zebra? Excellence and professionalism are admirable qualities in any aviation operation. In a faith-based organization, these qualities speak to an even higher purpose, calling and motivation. At MFI, it is excellence in aviation and in missions; each has equal footing; one cannot exist without the other. Once again, service transcends these arbitrary boundaries and is present in both their mission/missionary support and in their aviation services. These are critical points to MFI's success. For reasons of classification, a deliberate and perhaps arbitrary boundary or division was created between aviation and missions and these two themes were finally established as the core phenomena.

The Core Phenomena

Though the use of elaborate rubrics and search modalities, one can derive extensive topical listings of a dozen or more frequently mentioned subjects and create an exhaustive outline. Ninety potential topics about faith-based aviation and Missionary Flights International were initially identified. These topics were further refined, distilled and concentrated into twelve categories, or upon further examination, subcategories. Each of these subcategories was significant and each was confirmed from a variety of data sources. However, after doing all of this, one returns to this fundamental: Missionary Flights International is aptly and descriptively named. Their name essentially identifies two core phenomena or themes: flight or aviation and missions or missionaries. This is in keeping with Missionary Flights International own definition:

Missionary Flights International is not an airline. We do, however, strive to offer affiliated missions the kind of efficient service and professionalism expected of an airline operation. The Lord has led us to "Stand in the Gap" in meeting the air support needs of affiliated Biblical missions in the island fields of the West Indies, particularly Haiti, the Dominican Republic, and the Bahamas. (Missionary Flights International. 2013. para 1)

From these two core themes, of aviation and missions, subcategories were developed. In the aviation phenomenon, this included the DC-3 TP, maintenance operations, flight operations, FAA Part 125 Operations and professionalism. In the missions/missionaries phenomenon, subcategories included serve/service, evangelization/prayer, faith (in God's provision)/ support (fund raising), culture/history, people (human assets) and volunteers. Aviation and its subcategories were mentioned in the research data at least 148 times. Missions and missionaries and its subcategories were mentioned at least 221 times in the research data.

In the simplest and most straightforward means, the following definitions are offered. Aviation is defined as the use and operation of an aircraft. Maintenance operations were defined as the maintaining, overhaul, repair, inspection and modification of an aircraft. Flight operations were defined as the activities associated with the functioning of an aircraft. Part 125 Operations were defined by the FAA specifications for the operation of large, multiengine aircraft capable of carrying more than 19 passengers or more than 6,000 pounds of cargo. Professionalism was defined as running a competent, businesslike, efficient operation and organization, apparent to those both within and outside an organization.

For definition, missions and missionaries were defined as those in the act of proclaiming the Gospel message in service and in love. Evangelization was defined as preaching and good works for spiritual conversion and prayer as conversation with God. Faith/Provision/Support

were defined in the context of trusting in God for sustenance. Serve, or to serve, was defined as a calling or vocation and service was defined as a caring work with concern for others.

Culture/History was defined as past and present shared events, values and beliefs. People or human assets were defined as human capital and volunteers as people working without monetary compensation. These definitions were in part derived from the Merriam-Webster online dictionary.

Figure 1 is an illustration of the triangulation research methods, based on a triangle with three sides of input data from interviews, questionnaires and observations. Figure 2 illustrates the initial research categorization of four potential phenomena with twelve subcategories. Figure 3 illustrates the final categorization of two research phenomena, aviation and missions with twelve subcategories, six in each phenomenon.

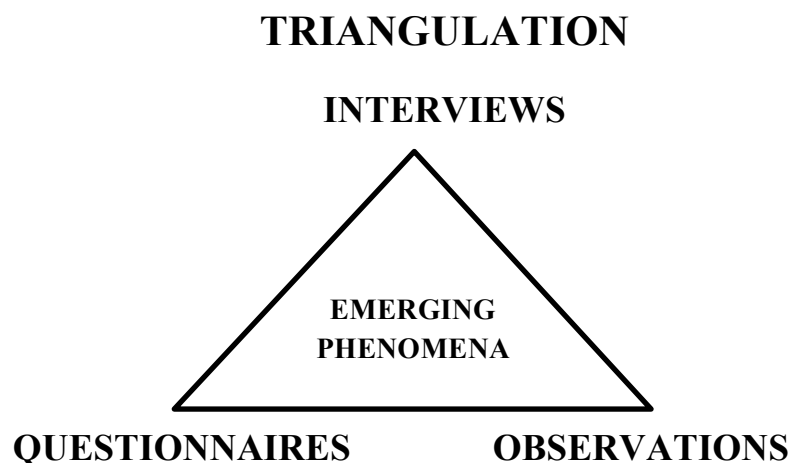


Figure 1. Three sides of triangulation for the development of emerging phenomena.

Table 1. *Four Potential Research Phenomena with Subcategories***FOUR PHENOMENA**

AVIATION	PROFESSIONALISM	MISSIONS	SERVICE
AIRCRAFT/DC-3 TP		MISSIONARIES	HISTORY
MAINTENANCE OPERATIONS		EVANGELIZATION/ PRAYER	CULTURE
FLIGHT OPERATIONS		FAITH/SUPPORT (GOD'S PROVISION)	PEOPLE (HUMAN ASSETS)
PART 125 OPERATIONS		SERVE	VOLUNTEERS

Table 2. *Two Final Research Phenomena with Subcategories***TWO PHENOMENA**

AVIATION PHENOMENON	MISSIONS/MISSIONARY PHENOMENON
AVIATION	SERVE/SERVICE
AIRCRAFT DC-3 TP	EVANGELIZATION/PRAYER
MAINTENANCE OPERATIONS	FAITH/SUPPORT (GOD'S PROVISION)
FLIGHT OPERATIONS	HISTORY & CULTURE
PART 125 OPERATIONS	PEOPLE (HUMAN ASSETS)
PROFESSIONALISM	VOLUNTEERS

The First Core Phenomenon: Aviation

As categorized in the review of research data, remarks about aviation consistently addressed the merits of aviation in overcoming geographic hurdles common to other forms of transportation. Prior to the use of aircraft, people, mail and cargo were traditionally transported from the United States to the West Indies and the Caribbean by ship often taking weeks to months for their arrival. The remark was commonly offered at MFI, if there was a highway to Haiti, we would be driving trucks! Likewise, the comment was often made about aviation being a remarkable tool in advancing the kingdom of God. Aviation is a great time savings device for missionaries in Haiti. A trips that would take a better part of daylight hours, can be done instead in a matter of minutes. Aviation is also a secure method of transporting personnel and cargo

otherwise vulnerable to hostile inhabitants and hazardous road conditions. MFI's service is reliable and dependable and constitutes a lifeline to the mainland for missionaries.

Those at MFI are aware of the costs and expenses associated with the operation of their aviation operation. They deliberately establish their charges at the lowest possible rates while meeting expenses. A roundtrip to any of their four destinations only Hispaniola has a recommended donation of \$450, or about half of a commercial fare. They are also sensitive to the quality and quantity of their flight and missionary services. Through the decades, MFI has established a unique niche that is unrivaled. This niche is primarily serving the island nation of Haiti. Although it shares the island of Hispaniola with the Dominican Republic, Haiti is a much different country culturally, socially and economically. It is much more impoverished and there is a much greater missionary presence in Haiti. The Dominican Republic also has reliable, frequent and dependable commercial airline service not present in Haiti (J. Karabensh, personal communication, March 3, 2013).

In the past year, the following statistics are offered by Missionary Flights International regarding their flight operations. In 2012, MFI flew 204 round trips, 1345.5 hours, carrying 4,693 passengers, 380,658 pounds of baggage and 385,116 pounds of cargo (J. Karabensh, personal communication, March 3, 2013).

Aircraft

MFI has utilized the DC-3 radial aircraft since 1973 until 2011. They started using the turboprop version, the DC-3 TP in 2003, which continues today. The professional pilot and maintenance staff at MFI consistently remarked about the dependability and versatility of the aircraft, especially the turboprop version. As a tail dragger aircraft with large, robust main gear, the DC-3 is well suited for primitive landing fields. Generally all of MFI's staff has welcomed

the arrival and conversion of their fleet to the DC-3 TP. It is largely maintenance free requiring only normally scheduled maintenance. There are only seven recurring airworthiness directives, AWD, or bulletins and advisories covering the DC-3 airframe. In essence, they are simple aircraft easily maintained. The DC-3 TP can be turned around and put back into flight service after checking the engine oil and cleaning the galley. Previously, with the radial powered aircraft many hours were spent chasing engine oil leaks, requiring a longer turnaround time. Typically, four to six hours were spent after each flight with the radials servicing the engines. Engine problems, engine failures and broken cylinders were common, complicating repairs and escalating maintenance costs. Of great significance the turbine aircraft uses universally available Jet A fuel. The radial powered aircraft utilization of avgas is problematic being significantly more expensive and much more difficult to find in the third world. In addition to being more dependable, the turboprops have a significantly greater payload, by 1,800 pounds; and a greater range by 200 miles. They are easier to fly and produce less crew and passenger fatigue and discomfort from noise and vibration. One pilot remarked the DC-3 TP has revolutionized their organization's operations (K. Gumpel, personal communication, January 9, 2013). In the week the researcher was at MFI in January, 2013, the operation had eight flights. This schedule would have been impossible with the older, radial powered aircraft. MFI is heavily invested in the operation of the DC-3. This aircraft has been part of their culture for forty years. They have extensive experience in their operations and maintenance, as well as an extensive Parts Store of spare parts. For most of the pilots, who also serve as mechanics, the sentimentality and nostalgia of flying radial powered DC-3's disappeared years ago and they welcome and embrace the DC-3 TP version (E. Hallquist, personal communication, January 9, 2013).

The organization has considered other more contemporary aircraft to include the F-27, Beech 1900, Saab 340 and DeHavallin Dash 8. Such used aircraft would cost three to four million dollars apiece to purchase, and would require a significant investment in retraining and parts procurement. A used DC-3 can be obtained for less than half the cost of these other models (E. Hallquist, personal communication, January 9, 2013).

Even the rehabilitated and updated DC-3's have issues with parts procurement. Quality tires are expensive and difficult to obtain. Goodyear brakes from the 1970's are constantly being overhauled for reuse as new parts are no longer available (K. Gumpel, personal communication, January 9, 2013).

Key to MFI's operations is keeping the cost of travel for missionaries as low as possible. Currently, no other aircraft option is viable when considering current economics. MFI is constantly looking for means to improve efficiency and reduce or maintain costs at their current level. Periodically, rates are reviewed with a goal of "breaking even" financially at the end of each year. Fuel contracts are negotiated to guarantee the lowest possible cost. Their greatest single annual expense is fuel. With each flight hour, the DC-3 consumes 1,000 pounds of fuel or approximately \$1,000 per hour in fuel at current rates. Each round trip to Haiti of seven hours costs approximately \$9,000, or approximately \$1,300 per flight hour (J. Karabensh, personal communication, January 7, 2013). With an operating budget of \$3.5 to \$4 million dollars annually, in 2011, fuel costs were \$1,065,006 (Missionary Flights International, 2011).

Part 125 Flight and Maintenance Operations

As an aviation operation MFI comes under stringent regulations by the FAA under Part 125 Operations requiring strict adherence to flight operations and maintenance procedures. In anticipation of this change in regulation and classification, MFI worked with the FAA in 2008 in

establishing policies regarding their operations. It was a new era for each organization. Safety is a paramount concern in aviation, in flight operations as well as in safe operations in MFI's facilities. Their safety committee meets monthly to discuss safety issues. Conversion to Part 125 Operations accelerated change within MFI, with the creation of additional staff positions and accountability. Required were the identification of a Director of Operations and a Chief Pilot, development of standard operating procedures (SOPs) and flight and maintenance manuals to standardize operations. There were more stringent requirements for record keeping. Training has been standardized as the organization has grown (L. Campbell, personal communication, January 8, 2013). Previously, training was done in a more informal fashion with the passage of "tribal knowledge" by which information and procedures were passed or handed down of how things were done. As the organization has grown and with the addition of new pilots and mechanics and as required by regulation to insure uniformity, manuals were developed covering MFI's flight and maintenance operations (E. Hallquist, personal communication, January 9, 2013).

Those at MFI feel it is essential to have good working relations with the FAA. MFI has a reputation for safe and clean operations and for self-monitoring. Years ago, they voluntarily stopped operations for several months due to recurrent radial engine problems until those problems were resolved. Multiple times it was remarked, "We want everything to be above board." Moreover, it is a biblical principle that they be in compliance with those in authority. More than once, it was mentioned, they as an organization are, by their own admission, "a strange duck flying rare DC-3s" (E. Hallquist, personal communication, January 9, 2013). In the world of government regulations, MFI does not fit any pre-prescribed holes being a square peg, as being neither a commercial or private operator. Trust and reputation have been essential to their successful international operation (E. Hallquist, personal communication, January 9, 2013).

In 2008 and 2012 MFI underwent voluntary safety audits for safe aviation practices under the auspices of Mission Safety International. They want to be aware of any organizational stagnation and their blind spots and not inadvertently fall into complacency. They are conscious of risk management and the importance of crew resource management (CRM) and safety management systems (SMS) programs. From a biblical perspective, they realize the importance of maintaining relationships with each other within the organization, and that they are all called to MFI to serve the Lord. They realize the hazards of staying within one's comfort zone. In their operations, they are also concerned about safe facilities for the sake of their personnel (L. Campbell, personal communication, January 8, 2013). In shipping freight and cargo, they must adhere to safe practices and not ship hazardous or contra banned cargo such as certain medical supplies, car batteries, bleach, ammunition, flammables or oxidizers. (W. Norton, personal communication, January 8, 2013). They do not take safety for granted, however, it was mentioned, God's grace and blessings are essential in all of their operations (B. Killian, personal communication, January 11, 2013). They also realize MFI is not a finished product as they continue to grow and mature. They have come a long way in fifty years of operations. In their own words, from a mom and pop operation to one with two large hangars and large multi-engine aircraft, they operate as a business with schedules and expectations, extensive recording keeping and compliance with federal regulations (L. Campbell, personal communication, January 8, 2013).

MFI supports over 300 missionary organizations with more than 750 permanent missionary families residing in Haiti and additional transient short-term missionaries. References were made multiple times to MFI's commitment to these missionaries' safety and welfare.

Emergency flights have been conducted on numerous occasions to evacuate missionaries for medical emergencies and accidents and because of political unrest in Haiti.

All those within MFI realize the great blessing of their move to Fort Pierce from West Palm Beach, FL. In a biblical context, several MFI staff members remarked for forty (actually forty-two) years, they wandered in the desert in West Palm Beach, while God was preparing a home for them in Fort Pierce (J. Karabensh, personal communication, January 7, 2013). This occurred in 2005 when they moved into a spacious headquarters with a 35,000 square foot hangar with offices, maintenance and storage facilities and warehouses. For those forty-two years in West Palm Beach, despite MFI's best efforts to obtain a permanent facility, their staff labored outside on the open tarmac servicing their aircraft from three smaller T hangars and service trucks. Their office operated from a two-car garage twelve miles away (R. Snook, personal communication, January 11, 2013). One might wonder how they were able to sustain their aviation operations all those years in those conditions. Today the aircraft are housed in their hangars, greatly reducing the adverse effects of environmental aircraft corrosion and greatly enhancing their maintenance and flight loading efforts. Most of the staff has lived through this transition and specifically praise God for this provision.

At MFI, they are acutely aware of the limitations in having only two functional aircraft for routine operations. While N 200 MF was in Ohio undergoing overhaul for several months and out of service, they had a loaner DC-3 TP to fill the gap. Otherwise, no backup aircraft is available. Their Cessna 310N, N 911 MF, is essentially a rescue aircraft for emergency medical evacuations and for ferrying parts for stranded aircraft, is currently out of service because of a gear failure. They also realize, given additional aircraft, they could expand their missionary aviation services throughout the Caribbean to Cuba, Jamaica, the Grand Caymans, and Puerto

Rico; in Central America to Mexico, Belize, Guatemala and Honduras and to South America, all within their 800 mile reach from Florida. With great anticipation, several staff members remarked, they look forward to that day (K. Gumpel, personal communication, January 9, 2013).

Under federal regulations, they are responsible for currency of their captain and first officer pilots. Unfortunately, no specific DC-3 flight training devices exist which complicates training procedures, especially those for emergencies. MFI contracts with Flight Safety International in Vero Beach, FL to use their Frasca simulator for flight training (E. Hallquist, persona communications, January 9, 2013).

MFI has an experienced cadre of pilots, each flying weekly and approximately 250 hours per year (K. Stratton, personal communications, January 9, 2013). MFI has eight qualified captains and three first officers. As per federal regulations, they are each required to take check rides annually (E. Hallquist, persona communications, January 9, 2013). Their pilots range from 5,000 to 25,000 hours of flight experience (R. Snook, personal communication, January 11, 2013). Each aircraft is flown seven to eight hundred hours annually, and are continuously undergoing required engine and airframe inspections (I. Hengst, personal communication, January 9, 2013).

Through their many years of aviation operations, they have seen a continuously changing environment, especially as an international operation to Haiti post 9/11. There are greater concerns about safety and compliance with American and Haitian government immigration and customs procedures and regulations affecting every flight and requiring days of advanced planning (E. Hallquist, personal communications, January 9, 2013).

Each of the DC-3's is equipped with two life rafts and each passenger with an inflatable life vest for over water emergencies. FAA regulations do not require these devices (FAA FAR

91.509) as routine flights are within 30 minutes flight time or 100 nautical miles of land as they fly over 400 Bahamian islands, many with landing strips. Along this flight path, MFI flights are conducted within ten miles of Cuban airspace, which may be entered with permission due to bad weather. Over flights of Cuba must be cleared in advance for flights to the Cayman Island and Jamaica for disaster relief. Permission for such flights through a Cuban airspace corridor for hurricane disaster relief cost several hundred dollars (J. Karabensh, personal communication, March 3, 2013).

Surprisingly, their operations are rarely halted for weather considerations. Rarely must they use an alternate airport in Florida south of Fort Pierce, such as West Palm Beach or Fort Lauderdale, in the case of ground fog or thunderstorms. Onboard weather radar allows them to navigate around menacing thunderstorms typical for their tropical latitudes of flight operations. In rare cases, their aircraft have been repositioned in Tampa or in the Florida Keys due to hurricanes in Fort Pierce (E. Hallquist, personal communications, January 9, 2013). Their new hangars are rated to winds of 130 mph. In 2012, flights were cancelled due to a persistent storm system in the Caribbean along their flight path. Most of their flights are conducted under VFR conditions in daylight hours. Flight plans are filed as required for each flight by flight crews. Their flights are guided by Miami Air Traffic Control for most of the flight to and from Haiti except when flying in Bahamian airspace or when approaching Haiti. Flights are usually conducted at an altitude of 10,000 to 12,000 feet at a cruise speed of 200 knots or 220 mph. If conducted at higher altitude flights would require supplemental oxygen in the unpressurized DC-3 (E. Hallquist, personal communications, January 9, 2013).

Flight Preparations

Missionary team leaders establish reservations months to a year in advance for their groups. Individuals may sometimes book a flight reservation within only one week's notice. Missionaries previously made return flight reservations via internal mail within the organization, but more recently, with the advent of the internet and cellular phones, are typically made electronically. As for flight planning, aircraft weight and balance is critical. An Excel spreadsheet and planning software helps coordinate these efforts merging reservation and cargo data with the number of passengers, onboard fuel requirements and the length of flight legs (W. Norton, personal communication, January 8, 2013). Extensive preparation is required for each flight. General declarations and cargo and passenger manifests are submitted electronically in advance to the United States and Haitian governments. Passport and visa information is submitted in advance for each flight electronically to US Customs and Homeland Security through the eAPIS or Electronic Advanced Passenger Information System. Prior permission must be granted for both the departure and arrival of all flights (S. Hengst, personal communication, January 11, 2013). Each flight's captain files their own aviation flight plans using Flightplan.com (W. Norton, personal communication, January 8, 2013).

Professionalism

Professionalism in their flight operations is a key goal and virtue of the organization. The director of operations remarked about the merits of clean, well appearing and functioning aircraft to instill an attitude of confidence especially with the turbine powered aircraft. MFI's president and CEO remarked:

We aren't an airline but we try to mimic one in what and how we do things with professionalism. All our captains and every first officer have an ATP certificate like the

airlines. We encourage them to advance their education, to take the next step, to keep going. We have a responsibility to portray professionalism. Missions often use old airplanes that are patched up. I have never wanted us to have that image. We fly over the open water. We need to be sure are planes are in good shape. Our pilots need to be the best and strive to be better. There is a lot of paper work that goes into this operation. We have to follow every rule, they don't cut us any slack, and they don't care if we are flying passengers or cargo. Our local FAA in Orlando has been very workable with us. We have a very good relationship with them. They have remarked how clean our operation is, one of the cleanest they've seen. The FAA knows we monitor ourselves. During the earthquake relief effort, we won a logistics award. We shipped 2 million pounds. The local secular community isn't always aware of us. This award came from them. (R. Snook, personal communication, January 11, 2013)

As sense of professionalism was especially confirmed from external sources to include all those aviation professionals interviewed on the airport premises, regular observers of MFI's operations but not affiliated with the company. Remarks included those from the manager of the Fort Pierce ATC Tower, stating his initial concerns:

I am not an expert on MFI and I can only talk really about our interaction with them as air traffic controllers and I must say when we got word that they were coming here in 2005 when they relocated here I was a little skeptical about an operation that was to be operating DC-3's. I had had some prior experience with another operation with DC-3's in northern Florida and every one of their flights it came back with an engine on fire, an emergency, no radio or landed on the wrong runway. One thing after another. But these guys came in and from day one they have been nothing short of the most professional

operation you can imagine. They are as good as any airline I've ever seen anywhere. I've never seen them have any kind of maintenance problem with the airplane, they call us on the radio, they say what they want to do, they do what we ask them to do, we can count on them doing it. They taxi out, they take off, they come back, it's just a pleasure to work them. We enjoy working them and we like watching the old airplanes. So they just come in and go without any problem at all. We deal with many student pilots here so it is always a pleasure dealing with professionals. I am speaking to working them as ATC. The people I know over there are all great people. (J. Groendyke, personal communication, January 8, 2013)

Two members of the Fort Pierce Airport administrative staff also confirmed MFI's professionalism and excellence as they remarked:

From an operational standpoint, they are a first class operation. Their aircraft are spotless. They are maintained phenomenally. I have inspected their hangar many times with our consultants, and we have never had any compliance issues at all. No storm water or environmental issues. They are in complete compliance with all fire codes. They are all first rate people. They provide a very good service for a very needy people. They are in compliance with US regulations. They are a great operation. They are a first class operation and a tribute to the community. It's really amazing to have an operation such as this that is willing to give, give, give. (A. Scott, personal communication, January 11, 2013)

Another airport representative echoed similar sentiments as she remarked:

They have been an awesome organization. In my dealings with them, they are very well liked, and well respected in the community. They provide a great service. After the

earthquake in Haiti, they did a magnificent job in organizing flights and relief efforts back and forth from Haiti. They were an integral part in getting aide to Haiti. They are absolutely extraordinary. (E. Powell, personal communication, January 11, 2013)

A third on-site interview with the manager of U.S. Customs and Border Protection confirmed MFI's professionalism and the quality of their working relationship especially in compliance with immigration and customs issues and procedures (S. Lovestrand, personal communications, January 10, 2013).

Each of the thirteen questionnaires responses from MFI customers also confirmed a higher degree of professionalism in flight and office operations. They also remarked about a contrasting lack of professionalism experienced in commercial airline flight operations to Haiti (Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor), Appendix F, February 27, 2013). This group spoke of the flight crews as being very capable and that the organization was incident and accident free since their inception in 1964 (Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor), Appendix F, January 26, 2013). They also consistently remarked about MFI's hardworking, caring, courteous, cheerful and friendly attitudes, being unflappable and innovative especially in the face of emergencies, and a willingness to "go the extra mile" (Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor), Appendix F, February 2, 2013). Several missionaries remarked: "Professional, they do not cut corners on the piles of paperwork needed; they do everything by the book. Excellence, right there at the top of the list in all they do" (Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor), Appendix F, February 22, 2013). Another missionary couple who have utilized MFI's flight services since 1983 remarked: "The personal touch of MFI and the care of the pilots for your

comfort and safety are much more evident than on any other airline we have flown” (Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor), Appendix F, February 22, 2013). A third missionary with ten years of experience flying with MFI stated: “Very professional while being compassionate to serve the Lord with excellence” (Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor), Appendix F, February 27, 2013). Yet another missionary who has served in Haiti for more than four decades remarked: “One time MFI flew out a team member in an emergency medical situation.” (Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor), Appendix F, February 27, 2013). Finally, a stateside missionary having used MFI fifteen times in recent years remarked about the professionalism of the office staff and the overall operation:

I have worked for years in a corporate environment, managing an office of a Fortune 200 Company, and there have been very few people that have been as efficient and professional as MFI’s reservations person. Commercial flights cost considerably more. They are a pain to work with...often flights are overbooked. They lack professionalism at every turn. The experience is COMPLETELY different. If I ever have the opportunity to direct teams I always try to direct them to MFI. (Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor), Appendix F, February 27, 2013)

External Confirmation

Several long time customers of MFI, some who have flown with the organizations for more than three decades have noted and appreciated their continuous improvement and challenges through the years. They are equally appreciative of the new headquarters and hangar facilities in 2005. Many missionaries actively participated in the 2010 Haiti earthquake relief efforts and noted MFI’s contribution. In some cases, they personally experience the radial DC-3

mechanical engine failures, even having an emergency landing in the Bahamas. In many additional cases, these frequent MFI customers appreciated the newer DC-3 TP for their greater speed and quieter noise levels. Many remarked about the novelty of flying in the DC-3 aircraft which allowed for cockpit visits in contrast to a more modern commercial jetliner operations. Attention to detail was noted by many passengers, and although these flight operations were conducted in older aircraft, no one expressed any concerns about safety or safe operations, noting absolute confidence in MFI's flight crews and aircraft. Consistently an awareness and appreciation of MFI's aviation service was noted, with the savings of time and money, with greater convenience and less hassle and with confidence in insuring the success of short term mission trips.

Participant Observation

The researcher spent five days observing and being involved in MFI's daily operations. This included participating as a flight attendant in a roundtrip twelve-hour flight operation from Fort Pierce to three airports in the Republic of Haiti. The researcher did not function in the role of an inspector or auditor seeking compliance with required procedures. However, to every detail listed, MFI gave the appearance of being a very businesslike and professional operation and organization.

Appearance and first appearances are important. MFI's parking lot was filled with older pickup trucks and cars, in contrast to their neighboring hangar's lot with Corvettes and BMWs. When walking in the front door, one first sees a large logo stating MFI's mission of "Standing in the Gap" (Ezekiel 22:30). Their headquarters and hangars were spotless, well organized and well kept. The offices were reasonably appointed, all computer equipped and obvious points of real work. Business casual dress was the order of the day for office and administrative personnel and clean and laundered navy blue pants or shorts and shirts was the attire of the maintenance

personnel. Flight crews, both male and female, were dressed in navy pants and short sleeve white pilot shirts with epilates worn with a navy necktie.

The warehouse and mailrooms were tidy, well organized and busy hives of activity. The mailroom was divided into four sections with hundreds of mailboxes, one for each of their missionary affiliates each with a numbered prefix of 1,000; 2,000; 3,000 or 4,000 for each of their two primary Haitian destinations of Cap-Haitien (MTCH) and Port-au-Prince (MTPP) and their two Dominican Republic destinations of Santiago (MDST) and Barahona (MDBH). The warehouse has a forklift with numerous pallets of incoming and outbound cargo. The outbound cargo was being built for each flight in the coming days. Cargo was tracked by a computerized system with a yellow label and barcode on each package. An upstairs storage facility was well organized with large sized spare flight control surface part ailerons, wing flaps and tail rudders. More impressively, this storage facility had dozens of pallets of boxes marked Samaritan's Purse containing emergency relief supplies of water purification kits, personal hygiene kits and blue polypropylene tarps, and still more pallets of packed emergency rations of food staples for Feed My Starving Children.

The predominant employee model at MFI is pilot/mechanic/missionary. Fourteen of twenty-one employees fit this classification. The organization by some appearances may seem to be pilot "heavy". However, in missionary and faith-based aviation, this is the typical model especially when flying single engine bush type aircraft in the third world. In the days of the radial DC-3, engine repairs were frequent. The crew would routinely carry a spare engine cylinder for replacement as needed. Two MFI clients remarked about their radial aircraft, N 400 MF having mechanical problems, and the pilot, coincidentally the CEO and President, standing on a step-ladder trouble shooting the engine. This employee model also gives the organization

greater flexibility. In addition to the pilot/mechanic/missionary classifications, they also serve in executive and administrative roles, flight planning, safety, loading, pilot training and specialized areas of maintenance.

They have two spacious hangars. Their primary hangar housed their two DC-3s currently in service. On the inside perimeter of this hangar there were maintenance work stations for hydraulics; wheels, tires and brakes; welding; sheet metal and electrical services. The hangar floors were spotless. Once again, a large sign posted reminds one of their purpose, “Standing in the Gap for Missionaries”. This sign is one of the first things arriving and departing missionaries sees at MFI, and a comforting reminder of MFI’s purpose and support. A second hangar contained their well organized and computerized Parts Room and Paint Booth. This hangar space housed an inoperative radial powered DC-3, N 400 MF undergoing renovation.

As a member of the flight crew, this observer could confirm a well prepared aircraft containing more than 4,000 pounds of cargo and configured for twenty passengers. One side of the aircraft was loaded with cargo restrained by floor to ceiling cargo nets, and on the other side, ten rows of twin seats. The cargo being shipped was diverse in nature, to include eight mail sacks, several bicycles, a disassembled wheel barrow, shovels and numerous Rubbermaid containers of all sizes and weights containing cargo as well as multiple pieces of personal luggage. The cargo was organized in a fashion keeping with the flight schedule and arrivals at three different Haitian locations.

As a member of the flight crew, a flight attendant was required for flights with more than nineteen passengers. They are required to have an orientation session, and to pass a written test about their duties and responsibilities, emergency procedures and the use and inflation of lifejackets and rafts. The captain preformed the passenger briefing. During the flight, the cockpit

cabin door was kept open and secured and passengers were welcomed to visit the cockpit and sit in the jump seat reserved for the flight attendant. Passengers remarked in their feedback that this was a particularly favorite opportunity on MFI flights.

One of the essential roles for the flight attendant was the insertion upon landing and removal prior to take off of a mechanical rudder lock at the tail of the aircraft. Despite the ruggedness of the DC-3, the rudder hinge is susceptible to damage. The captain and first officer traveled with a checkbook as well as American currency to cover anticipated expenses incurred with each flight to include thousands of dollars in fuel purchases and thousands of dollars of fees due upon arrival in Haiti. These fees included passenger, international, utilization and arrival fees and duties. Haitians assisting in the loading and unloading of the aircraft were each paid four dollars for their efforts.

One of the keenest times for observations was the thirteen hour day on Thursday, January 10th, 2013, starting with a 0515 arrival for a 0600 roundtrip flight from Fort Pierce to three Haitian airports and back aboard DC-3 TP, N 500 MF. There is little comparison to a modern contemporary jet commercial airliner. At rest when parked, one is either walking uphill or downhill because of the tail dragger configuration. At a height of six feet, one can barely standup straight. Once airborne, noisier than a B-737 or Beech King Air, one can only carry on brief conversations because of ambient noise. The aircraft was heavily and precisely loaded with baggage, freight, mail and cargo on one side of the cabin secured with cargo nets from floor to ceiling, and ten rows of passenger seats on the other side. From the cockpit, it would seem flight was largely over open oceans, however, there was a continuous chain of sandy, sea level islands with green vegetation and minimal elevation beneath. At an altitude of 10,000 feet, these islands appeared to be most vulnerable to tropical storms and hurricanes. Flight was conducted in

daylight hours on a cloudless day in VMC, visual meteorological conditions, under VFR, visual flight rules. In January, all three Haitian destinations, Cap-Haitien, Pignon and Port-au-Prince were 80 to 90 degrees in temperature. One can only imagine what the temperature must be in the summer months, especially when loading and unloading cargo and freight from an enclosed cabin. Passengers instinctively knew to seek shelter from the sun's heat beneath the aircraft's wings when awaiting the aircraft's preparation.

The aircraft's cockpit door was kept open, a far cry from today's commercial service, and passengers were allowed, even encouraged, to sit in its jump seat and converse with the flight crew with a headset. Like passengers being transported in any aircraft, many appeared to be in their own world, anticipating their arrival in Haiti or return to the United States. Those returning were appreciative of the simplest of comforts, donut holes, Debbie Cakes snacks, Cup of Soup, a cup of cold water or lemonade, warm tea or hot chocolate.

Departing from Fort Pierce were several couples of career missionaries returning to Haiti having been on leave in the United States and a four generation Haitian family with a newborn, mother, grandmother and great grand-father. One missionary family had more than two tons of personal cargo aboard to last until their next return to the United States in a year. Upon return, the aircraft was much more heavily laden with passengers, minimal baggage and with no cargo. The custom for short term missionaries is to leave the contents of their luggage as gifts to those in Haiti. The returning group of short term missionaries was from Pella, Iowa; four adults and fifteen high schoolers aged 15 to 18, mostly young women. The women were all sporting recently acquired cornrows hair styles, were listening to their iPods and were anticipating their arrival in Fort Pierce, the uses of their cellphones and a hot shower. Some played cards while sitting on the aircraft's floor. Others simply rested and slept.

The flight attendant's primary job was to secure the cabin and to serve the passengers. The attendant's job was to open and securely close the cabin door and passenger stairs and to secure the rudder lock upon arrival and remove prior to departure and. Next to this passenger door was a larger, six foot wide cargo door for loading and unloading of cargo and freight. The flight attendant's jump seat in the cockpit was shared with visiting passengers in-flight. Unloading of freight was laborious and was facilitated with a line of experienced Haitian workers accustomed to this process. Packages of nearly two hundred pounds required the efforts of three to four men to reach the cargo door that was manually lowered to the ground five feet below.

The tiring effects of prolonged flight, at altitude, in an unpressurized non air conditioned aircraft were experienced by both passengers and flight crew from temperature extremes, noise, vibration and low grade of hypoxia producing fatigue and dehydration. Although the DC-3 cockpit has tinted windows, it is called a greenhouse. It was essential for the flight crew to remain adequately hydrated and nourished during the course of the flight. Each crew member brought their own meals and liquids. Although a very stable aircraft, the DC-3 is manually flown without an autopilot. Even for such a large aircraft, the pilots would notice when crew or passengers walked about the aircraft in effecting the trim of the aircraft in flight.

On the day of flight, four arrivals were planned. During much of the flight, the aircraft was under Miami air traffic control until entering and leaving Bahamian airspace. The first arrival was at Exuma International Airport, Georgetown Bahamas, halfway to Haiti. As planned, only partial fuel was loaded in Fort Pierce to maximize the aircraft's payload to Haiti. At Exuma, an additional 300 gallons of fuel was purchased. In keeping with Bahamian and safety regulations, both crew and passengers disembarked the aircraft during refueling to wait in the

airport terminal until this process was completed. The flight continued over the Bahamian chain of islands under the control of that nation's air traffic control until south of Great Inagua. Once exiting Bahamian airspace, the flight again came under Miami air traffic control as an international flight. Only when within several miles of Haiti did the flight come under Haitian air traffic control. The first arrival in Haiti was at the northern most airport of Cap-Haitien. It is a sea-level airport with the recently extended runway ending at the edge of the ocean. At Cap-Haitien, the aircraft was partially unloaded of passengers and cargo; passenger and landing fees were paid. Pedestrians freely walked about the airport property as there were minimal physical barriers around its perimeter. The next leg was a VFR flight of only twenty minutes duration conducted at an altitude of 5,000 feet around lush green hills and mountains above a river valley inland to a 5,000 foot grass landing strip at Pignon with a field elevation of 1,175 feet. MFI flies to Pignon only once monthly. This short planned diversion of less than an hour, unknown to the missionaries, costs MFI an additional \$800 but is an incredible time saver. This short flight is equivalent to a precarious eight hour trip by car. It was every bit in keeping with MFI's goal to go the extra mile, to make missionaries' lives easier. The flight's arrival at Pignon was a noteworthy event. The aircraft was greeted by fifty people including missionaries awaiting their mail and cargo; twenty short-term missionaries returning to the United States and half dozen Haitian men to help unload the aircraft. The final leg in Haiti was from the mountains of Pignon to the sea level valley plain and airport of Port-au-Prince. This airport could be seen at a distance. Just a few years earlier, after the 2010 earthquake, the city and hillsides were reported to have been spotted with blue polypropylene traps serving as makeshift shelters. On this day, they were largely absent. From the air most streets or roads appeared to be unpaved. The tallest buildings in Port-au-Prince were only a few stories tall. After landing, the aircraft was taxied to

the terminal, and parked next to a United Airlines 767 headed from Port-au-Prince to LaGuardia in New York City. Seven members from that flight crew came to visit and tour MFI's DC-3. Here the remaining cargo was manually unloaded with the assistance of Haitians. While the aircraft was being refueled, the passengers rested outside in the shadow of the aircraft's wings. The captain paid the appropriate duties, landing and passenger fees to Haitian authorities and purchased 630 gallons of fuel for the return flight to Fort Pierce. This round trip cost MFI nearly \$9,000. Thousands of dollars were paid in fuel, airport and passenger fees. Upon arrival in Fort Pierce at the St. Lucie County International Airport, the aircraft taxied to the U.S. Customs and Immigrations facility, where it was scanned with a Geiger counter and all passengers and crew were screened for re-entry into the United States. The passengers claimed their baggage and the crew taxied the aircraft to the MFI hangar where it was secured and prepared for the next day. It was now nearly 8 PM, fourteen hours after departure earlier that morning. The hangar doors were closed, and the participant went home, grateful, after an exhausting day, wondering how this could be done, day after day.

In summary, three sides of triangulation in the aviation phenomenon were supported with collaborative evidence in interviews, questionnaires and observation establishing the value of aviation, the utility of the DC-3 aircraft, the enhancement of flight and maintenance operations with the DC-3 TP and the excellence and professionalism of MFI's aviation and customer services.

The Second Core Phenomenon: Missions and Missionaries

As categorized in the review of research data, remarks about missions and missionaries were consistently offered. This phenomenon and subcategories were mentioned in the research data at least two hundred twenty times. For definition, missions and missionaries were defined as

the act of proclaiming the Gospel message in service and in love. Those within MFI consider themselves to be stateside missionaries. Previously established has been MFI's professionalism and excellence in aviation services. However, under this second classification, serve and service have additional meaning of great significance striking at the core of the organization's values. Serve was defined as a calling or vocation and service defined as caring work with concern for others.

Service

Over the course of fifty years, MFI has continually developed and refined the services they offer missionaries and their missions. Their missionary services started in 1964 with the delivery of mail to missionaries in the Bahamas. All missionary organizations utilizing MFI's services must qualify as affiliate members. This is a formal application process with a \$180 annual fee per organization. MFI has over 300 such affiliates, many of which are announced on MFI's website. For the sake of clarification, there are essentially two categories of missionaries, those on short term mission trips from the United States of one week to one month duration, and long term career American missionaries permanently residing for years or even a lifetime in Haiti and the Dominican Republic. Affiliate membership is more than a cursory process. Each application is reviewed for consistency with MFI's own doctrinal statement.

MFI only serves or flies those who are working with missions that are affiliated with MFI. To qualify for affiliation each mission must be actively involved in sharing the Gospel of Jesus Christ. Other criteria include being a church or a registered non-profit organization with a mainstream Protestant statement of faith. (Missionary Flights International, 2013)

This process has worked well for MFI through the years. There has been one notable exception mentioned by several during the interview process at MFI. A formal discrimination complaint was lodged in the Summer of 2012 against MFI by a prospective customer wishing to utilize their aviation services for a purely humanitarian mission. Such requests by others in the past had been turned down without ramification. In this single case, with the filing of a complaint with the U.S. Department of Transportation, a formal legal hearing was held. As a private organization, the DOT legally upheld MFI's application procedure. However, as points of clarification, MFI could no longer in any way refer to itself as an airline with regular or scheduled airline services with fares. MFI could however refer to itself as an aviation operation with flight services to Haiti and the Dominican Republic with a recommended donation covering flight expenses (J. Karabensh, personal communication, January 7, 2013).

MFI's vision goes well beyond the provision of aviation services for transporting people and material. The diversification of their services is evident in the following listing. MFI has compiled an exhaustive listing of fifteen important services they provide for missions and missionaries in Haiti. These include: disaster relief, feeding programs, sea shipments, construction teams, youth groups, orphanages, agriculture, church building, education, evangelism, emergence evacuations, Christmas bags, well drilling, mail and package service and hospital and medical clinic support. One can see from this listing, MFI's services go well beyond those of a purely aviation organization to greatly facilitate other objectives. MFI realizes the necessity and value of humanitarian efforts. The physical needs of the people of Haiti must first be met. As stated by MFI's Executive Vice-President: "An empty stomach has no ears!" (J. Karabensh, personal communication, January 7, 2013).

MFI's support of missions and missionaries is primarily but not entirely aviation based. During the 2010 earthquake relief effort, MFI packed and shipped twenty-four large cargo containers for shipment by sea to Haiti. Likewise, since the earthquake, MFI has been actively involved in home construction in Haiti. They are also involved in the creation and packaging of food shipments to the needy. On January 15, 2013, over five hundred volunteers packaged more than one hundred thousand meals of soy and rice at MFI's headquarters for shipment to the hungry and starving with the Feed My Starving Children program. MFI is likewise known for its generosity and support of the Fort Pierce community. This will be discussed in greater detail later. MFI has in its facilities in Fort Pierce, pre-positioned emergency supplies ready for transport and distribution in the Caribbean and in Haiti for disaster relief in the event of tropical storms and flooding which are common in the region (J. Karabensh, personal communication, January 7, 2013).

However, the greatest service MFI provides is best defined as a concierge service for missionaries. The scope of these services has evolved and enlarged through the years. Twice weekly, MFI ships mail to each of its three hundred affiliates in Haiti at no cost. Packages and cargo are shipped at a rate of \$1.50 per pound representing MFI's costs. Freight and cargo is delivered to the missionaries within two weeks of reception at MFI. This is a safe, expeditious, secure and cost effective method not available by any other means. Shipments by other less secure means are much more costly, are often lost, stolen or delayed. MFI has experienced personnel on the ground in Haiti to facilitate this process through customs and immigrations for inspection and duties, or taxes paid on goods received in Haiti. These goods are subject to an 18% percent tariff (B. Ramsey, personal communication, January 8, 2013).

Time and time again, the value of this service was validated and confirmed externally by questionnaire data from missionaries in the field. Many went on to say, they could not accomplish their mission in Haiti without MFI. Two missionaries who have served in Haiti for three decades mentioned in particular the importance, significance and criticality of MFI's secure mail service especially of money, essential to their daily life. These monies otherwise would have be diverted in traditional mail service and not reached the recipients (Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor), Appendix F, February 24, 2013). Some said MFI's services were critical to work in medical missions and in a recent cholera epidemic (Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor), Appendix F, February 27, 2013). The services they provide are economical for an aviation operation. Shipment by a commercial carrier, when available is less reliable and may easily be ten or more times more expensive. A medium sized box or package may cost more than a hundred dollars to ship with the uncertainty of arrival (J. Long, personal communications, January 11, 2013). One missionary wrote of receiving an urgently need fresh water well pump in a matter of days (Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor), Appendix F, February 27, 2013). Traditional commercial shipments of large quantities, especially construction materials, are cost prohibitive. Missionaries also offered the example of shipping a turkey to Haiti for a Thanksgiving dinner (Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor), Appendix F, February 23, 2013). A more typical example offered by MFI spoke to the frequent daily needs of a missionary. One might need a printer cartridge for their computer or a part for a broken car. Usually, such a cartridge or car part would take many weeks for delivery. With MFI's dedicated purchasing department, a missionary could email such a need on Monday, and have it shipped

and received in one to three days, either on Tuesday or Thursday of the same week. MFI's purchasing and shipping department has overcome many logistical challenges for the missionaries with their shopping services done at no additional charge. The use of satellite phones, cellular phones and the internet in Haiti has enhanced the purchasing department's services to missionaries in country (A. Colson, personal communications, January 9, 2013).

Many short term missionaries noted the benefits of this shopping service when preparing for trips which were most often a week in duration, helping ensure the success of their trips. Supplies they need were purchased in advance in Fort Pierce and readied for transport with them upon their arrival. This staging service is especially valuable with educational materials and building materials not available in Haiti. Building and construction material up to twenty feet in length can be shipped on the DC-3 with their large cargo doors. All such materials are shipped at a charge of \$1.50 per pound, not inexpensive, but cheaper, more reliable and secure than by other means (A. Colson, personal communications, January 9, 2013).

Besides these more routine items, missionaries in Haiti will often order frozen food that is purchased in a big box store and shipped immediately (A. Colson, personal communications, January 9, 2013). Other missionaries remarked MFI is their link to America, often making life in Haiti more bearable with something as simple as Netflix movies (L.V.M., personal communications, February 23, 2013). Another outstanding example of MFI's extraordinary care, concern and commitment to the welfare of missionaries was conveyed as several MFI missionaries recalled special evacuation flights because of political unrest, riots, and a coup de ta in Haiti and for medical emergencies (Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor), Appendix F, February 22, 2013).

MFI is constantly considering how they can enhance their services to empower and facilitate missionaries and their missions. In the words of MFI's President:

We do things for them that would be difficult for them to do for themselves. It will give them peace of mind and allow them to focus on their mission. I tell them, if you have any concerns or issues, let us know because we can probably figure it out. We've done that many times. (R. Snook, personal communication, January 11, 2013)

They would like to grow their services and their sphere of influence. They are constantly seeking new and better ways of serving missionaries; however, this is not for commercial or financial reasons or to bolster their fiscal bottom line. It is in keeping with their desire of how they can better serve others. This has been very apparent to those within MFI's realms in Florida and Haiti. The fact that MFI constantly "gives, gives, gives" has been apparent in remarks offered by those outside of MFI, at the Fort Pierce Airport, of a university leader in Haiti, from missionaries in Haiti and by a leader at the Cap-Haitien Airport (Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor) Appendix C, February 22, 2013). This is particularly noteworthy of a non-profit organization that annually hopes to break even financially. By their very nature, those at MFI want to give, and to serve.

To Serve

That brings us to our next topic: to serve as a calling or vocation. This notion is an especially powerful motivator within this organization. To serve, in providing for the physical and spiritual needs of others, is a key agenda within MFI. MFI's president remarked, everyone, regardless of rank or responsibility has been called to MFI to serve. Almost to a person, for both paid staff and volunteers at MFI, those interviewed spoke, in one fashion or another, of having been called to the mission field and for having been specifically led to MFI. This calling extends

to their families. When asked, why they serve, a common response from the MFI missionaries was of having the spiritual gift of helps, of bringing relief and aid to others; and of having talents in aviation. When combined, MFI is the ideal platform from which to serve.

To serve is a powerful motivating force within the organization. However, MFI's efforts are targeted in providing food, fresh water, housing, medical and educational services. For someone never having personally encountered or experienced such conditions, the remarks of Dick Snook spoke to the common virtue of compassion manifested within the organization:

Missions are also very humanitarian. In the Bible, the Lord talks about reaching out to the least of these. He encouraged those around Him to do that. In our American society and country we have lots of programs to help people who are hurting with food stamps, welfare programs and scholarships. There is none of that in Haiti. A child grows up and he's 3 or 4 years old and his parents die, what happens? If his neighbors or family can't take him, they become malnourished. Little pot belly, red hair are signs, of malnutrition. I see missions pulling those kids in and within weeks, the kid is healthy, running and playing with the rest of the kids. So it gives these kids a chance, so at least when they've grown up to be 18 years old, they've grown up healthy. There still isn't a lot advantage of education, but at least they can read and write and have the basics of education. It gives them a leg up to carry on. And medical is the same way. Most babies in Haiti are born in the mud huts, delivered on the floor, but what if there are complications? There are several clinics and hospitals we fly for and they know they can go there and get some help, some service. The mothers know now there are some options, they can get some help, some health care for themselves and their babies. They can get inoculations, shots

and vaccinations. The child grows and gets some attention. (R. Snook, personal communication, January 11, 2013)

For those who see MFI serving other so diligently, they themselves want to serve. The Haiti earthquake relief response was a Herculean effort mobilizing thousands of people for the rescue of Haiti. In the first three months of 2010, MFI flew more people and cargo to Haiti than it usually does in a year. Hundreds of volunteers came to MFI's headquarters to assist in these efforts (J. Karabensh, personal communications, January 7, 2013). As extraordinary as these efforts were, many within the MFI organization remarked through the years, of the right person, a volunteer or new staff person, coming just at the right time, to serve, providing a special service and fulfilling a particular need. Also commonly mentioned was the human tendency to sometimes lose focus in the monotony of the routine. One pilot with thirty years' experience at MFI remarked:

In Christian culture there is the issue of spiritual gifts. I've always felt I have the gift of "helps". This is the perfect ministry for that. To help the missionaries, to help Haiti. You get so focused on the trees; you lose sight of the forest. This has been the struggle. You look at boxes, broken cylinders, airplanes, bad weather and I have to get reminded of the larger picture, and every now and then you get a glimpse of that. During the earthquake, you are focused and see it directly, but after that, the day to day reemerges. Every now and then I go down to Haiti and I see some of the ministries, and the orphanages, the hospitals, the churches, the Haitian Christians and believers, and I get it, the picture, for a while and then you get back. That has been one of the prevailing themes of my whole thirty years, but you have to deal with the details, the macroscopic and the microscopic. Ultimately I have to trust God for the macroscopic, I don't know what impact a particular

service may have to Haiti, I have to trust God (E. Hallquist, personal communication, January 9, 2013).

President Snook remarked he has had many commercial airline pilots tell them at MFI, their job must be the best in the world. Snook response is that it is not about flying the airplanes, but about reaching the lost and the least of these. Furthermore Snook remarks:

Paul in 1 Timothy talks about enabling people to be in ministry. My part is being faithful. God enabled me, I didn't have a college education, but God put me in the right place at the right time. I use His word and the common sense he gave me to help direct this organization (R. Snook, personal communication, January 11, 2013).

Evangelization and Prayer

For this discussion, evangelization was defined as preaching and good works for spiritual conversion. Prayer was defined as conversation with God. A common and unifying denominator for those at MFI and those missionaries they serve is a common spiritual belief and faith. One missionary pilot put it so well when he said:

I do this for one reason, so others can see Christ. That's it! I wouldn't do this if it wasn't for that. This is a hard job. It's a lot of work and not very much pay compared to the secular world. But I don't do it for that at all. I do it for one reason, so that others may come to know Jesus Christ as their personal savior (K. Gumpel, personal communication, January 9, 2013).

MFI President remarked of their ultimate motivation:

In our case, we require all the missions we fly for to actively be presenting the spiritual side of mankind, the Gospel. We believe man is two parts, he's physical, lives and breathes and eats and has to grow up and be educated but there's a spiritual side of man.

Someone has said there is a spiritual vacuum in everyone's heart. I believe that's true. You go to the most remote of the world and you will find people are worshipping something, an inanimate object, a tree, an animal, their ancestors, they are worshipping. We have this worship thought in our heart, so as Christians we have the answers through God's word in the Bible. We like to present that to the people in Haiti that we fly for. All the missions we fly for have to be actively presenting the Gospel. We have a burden for Haiti and the unreached. It's not about flying airplanes. Eternity is too important. That's what MFI is all about. It's not the cargo or the work teams, it's about the lost. It's about reaching people. These old DC-3's were once instruments of war. They are now instruments of peace. It's always great to be able to serve the Lord in work you enjoy (R. Snook, personal communication, January 11, 2013).

In this spiritual context, it is not surprising to discover that prayer, or conversation with God is a common entity. In particular, the remark was made of routinely seeking God's wisdom in their operations. At the beginning of each week, Monday mornings, those in the MFI community join together in prayer. In the interview data, several references were made, especially by the organization's veteran personnel and leadership, of seeking God's counsel in prayer especially in times of need. Perhaps not surprisingly, from external questionnaires, in eight of thirteen responses, nearly two-thirds of the missionaries traveling to and from Haiti specifically mentioned reassurance with the flight crews routine of prayer for God's protection before each flight.

Faith in God's Provision, Support and Fund Raising

Not surprisingly, in any non-profit organization, fund raising is an important factor to support and sustain their efforts. Humanitarian and faith-based aviation organizations are not

exempted. These not for profit organizations have consistently demonstrated a multiplication of value in the services they offer from their donations. Those at MFI depend upon charitable donations to sustain their organization and efforts. Moreover, in this context, faith, provision and support were defined in the context of trusting God for His faithful provision and providence. Those at MFI are called to be good stewards of God's provision and resources. In a technical, legal sense, MFI is the owner of the organization. In a biblical sense, they are merely stewards of the resources God has and continues to provide for them in serving others. Unique to faith-based organizations is the concept of support or fund raising. Each missionary is responsible for raising their own support or salary, from the community. These are individuals, families and churches, who in many cases, for years, or even decades have supported these missionaries individually, and the organization corporately with their consistent contributions (L. Campbell, personal communications, January 8, 2013). This is done because of their belief in a common purpose. For young missionaries, this is a source of understandable concern. Those entering MFI must first spend several years developing this financial support before becoming part of the organization (R. Snook, personal communications, January 11, 2013). Veteran missionaries have come to expect fund raising and support as a way of life. As one MFI missionary remarked:

Fund raising is a way of life. We are a faith-based mission. No matter how many letters I write or how many times I speak, the Lord is the one who provides. It's not my doing, my words or my effectiveness, it is Him. I have been amazed through the years how needs have been met. (W. Norton, personal communication, January 8, 2013)

This same principle is also applied to the organization. MFI must actively solicit support to sustain their operations. This year, with the overhaul and refurbishing of one of their DC-3 aircraft at an expense of well over one million dollars, a private foundation has financed the

engine overhaul of \$900,000 (J. Karabensh, personal communication, January 7, 2013). MFI's operating budget of nearly four million dollars is provided entirely through financial donations and fund raising (H. Martin, personal communication, January 7, 2013). One board member reported past gifts of over \$100,000 to MFI because of peoples' beliefs in what the organization does (G. DeCamba, personal communication, January 9, 2013).

The substantial expenses associated with MFI's operations are raised by the organization separately from those of the missionaries. They do not allocate or syphon off a portion, as much as 15%, as is common in many Christian organizations to support administration. In fact, each staff missionary at MFI costs the organization \$1,000 monthly in benefits and taxes (K. Stratton, personal communication, January 9, 2013). Another example was given by a volunteer:

During the earthquake relief, people would call and ask what percentage of my contribution goes to administration? I would tell them zero percent. People had a hard time understanding that. Dick Snook makes it clear, we raise administrative cost separately. A man gave \$200,000 to build houses in Haiti. It all went to that project, and none for MFI's expenses. That was raised separately. I was so impressed. (J. Long, personal communication, January 11, 2013)

Those at MFI speak of God's faithful provision through the decades. He has provided their daily sustenance, the roofs over their heads in a permanent home with two new hangars, their aircraft and their people, paid and volunteer. Even for long time staff members of MFI, God's daily provision is an essential confirmation.

For over two decades, I have seen how God has consistently sent the right person, staff member or volunteer, assembling this team, each member with their own unique gifts and skills, to build God's kingdom and to spread the Gospel. I firmly believe God has

orchestrated it all! We haven't gone out and solicited people; it's as if they were sent here. It's very exciting to see that happen. I've seen it with volunteers, in daily operations and in response to the earthquake (B. Killian, personal communication, January 11, 2013).

As an illustration, several mentioned God's provision through donations of time, talent and treasure in motorizing their hangar doors. The precise amount was given for the purchase of motors, and days later, a welder and then an electrician came along to offer their services for the motors' installation. With the 2010 earthquake, millions of extra dollars were provided, helping transport 1,400 relief workers and over 350 tons of aid to Haiti. This past year, after recently acquiring a second hangar, MFI became debt free. In keeping with responsible stewardship, God provides and new opportunities are given. God has and continues to open doors for MFI. In the context of God's faithful provision, as He provides additional people and additional aircraft, MFI will expand their services to Cuba, to Central and South America (L. Campbell, personal communication, January 8, 2013).

In this context of God's faithful provision, many stories, not tales, are told by those at MFI affirming this concept. This included Dick Snook remarked:

Our guys are sure every pound of cargo that can, goes into the plane. We keep extra cargo, food for Feed My Starving Children, if there is room. The plane will use as much fuel if it is empty as if it was absolutely full. Even that isn't coincidence. That food went to a starving family. It's only a big picture that God sees. We don't always see that. It's the same story about this hangar. We had no idea! For a year they had been rebuilding it after Hurricanes Francis and Jeanne. During all our struggles in Palm Beach, God was preparing this building for us. It was a turnkey operation. We never missed a flight in

moving up here. The service was never interrupted. God works these things out. We don't always see his hands in the frustrations. We could never have had a hanger like this in West Palm Beach! As you look back, you see God's hand. (R. Snook, personal communication, January 11, 2013)

A career airline pilot, now a valued volunteer and board member at MFI tells of a time in 2010 with the Haiti earthquake. President Snook was headed to the bank to borrow \$75,000 to help fund MFI's emergency response for the lease a C-130 aircraft to ship critical cargo into Haiti.

By the time Dick got back from the bank, Rick Hendricks's had called to donate the services of his fleet as well as \$200,000. Dick never had to use any of the money he borrowed. There were several C-130 flights covered by that donation. Dick was stepping out in faith, and never had to use the money. (J. Long, personal communication, January 11, 2013)

Somehow, it all works. Those at MFI have learned to be good stewards and to trust in God's faithful provision. With greater provisions and blessings, as in scripture, God has provided greater expectations and opportunities.

History and Culture

For the sake of this discussion, culture and history were defined as past and present events, values and beliefs shared by a common community, extended family or group of people. In this context, MFI has a rich culture in its fifty year history. As previously mentioned, codification of its aviation culture was required under Part 125 Operations. The passage of standard operating procedures needed to become more than the passage of "tribal knowledge". However, well beyond procedures, comes a corporate culture at MFI shaped by common values, traditions and purpose. The missionary calling is common to all within the organization. MFI's

staff members in many cases were exposed to missionaries in their youth. They share a common desire to fulfill the Lord's command to reach out "to the least of these".

The aura of MFI's culture is pervasive, filtering throughout the organization. It is apparent with the senior leaderships with decades of experience at MFI. Although there is a hierarchy of organizational leadership, if for no other reason than FAA stipulation, accountability and efficiency, these roles are downplayed. As the CEO remarked:

It's a combined community, responsibility and call. I just happen to be the leader in my position, in making decisions and working on the board. Their positions are just as important as a pilot or mechanic. The board expects us to figure out our problems. Many times I will call a staff meeting, and say, we need some input here. This is what we have to do, give me your thoughts. What do you think we have to do? We pray about it and everyone goes back to work. I've found that works very effectively. In any organization, Christian or not, you talk to your people, you let them have their input, we are in this together, to serve the Lord. That makes my job easy. They know as leadership we have to make the final decision. (R. Snook, personal communication, January 11, 2013)

There are unique qualities in MFI's culture which aren't likely prevalent or even present in a conventional aviation operation. Sometimes one's personal interests must be set aside for the sake and needs of the organization. The Director of Flight Operations remarked about their corporate culture when he said:

As Christians, there are pressures that we all get along together. Aside from the issues of safety, there is also a spiritual issue of maintaining good relationships. Sometimes we need to put our ego aside and that is difficult. Scripture presents the principle of humbling ourselves. This element helps us, as we are all committed to our faith and that has an

impact on the organization. We have a common commitment; we all have to raise support. All these common factors have an impact on how we do it. When there is a need here, you need to do this, and you need to set aside your own desires, and do this. I haven't enjoyed every job I've had to take on. There is that element, where we have to do some things that aren't our favorite, such as loading, to get the job done. I hope the younger guys see that you have to do some things you don't necessarily enjoy. Flying doesn't have the attraction it once had. Now it's pretty much about the ministry. (E. Hallquist, personal communication, January 9, 2013)

MFI is no different than any other organization, be it faith-based or secular in nature. Each has its own unique demands, expectations, chemistry and compatibility. Staff turnover at MFI is minimal. Most members have been with the organization between ten and thirty or more years. Although perhaps difficult to understand in a traditional corporate aviation structure, in the words of MFI's senior leadership, having a common motivation beyond an aviation focus is essential. It isn't about the pursuit of flight hours in a vintage, legacy aircraft. To remain focused and refreshed in their service, each MFI missionary staff member and family is encouraged to spend time in Haiti, living and serving with a missionary family.

As a policy, every other year, a staff member gets a week off to go to Haiti with their family to work with our missions and the 700 families we fly for. Our staff gets to know these families. This has been a real plus for MFI. You sometimes wonder after sorting and loading all the boxes, you can feel like you're in a rut. When you go down there, and you see the MFI packages at the receiving end, with the yellow MFI labels on them, and see how excited the missionaries are to get them, how it may change their life, you realize, it's worth it. Our people come back with renewed vigor. Someone is being

blessed because of what we do. My experience going to Haiti, the missionaries will fight over us staying with them. They can't wait to show you what they are doing in their clinic or orphanage. They are so proud. This encourages us. (R. Snook, personal communication, January 11, 2013)

Those within the organization realize the essential humanitarian and spiritual sides to their efforts. They are inseparable when it was said:

Missions are also very humanitarian. They have to have clinics. You can just go down and see a sick child and preach to them, that's not going to do it. You get their bodies functioning and work with their families and do whatever you can to educate them, then you begin to witness to them and talk about the spiritual side, they will listen to you.

They see your concern, you've come all the way down here, you've lived your life amongst us for the past four or five years, and we are willing to listen to what you have to say, because you've saved the life of my child. That's the impact we like to make in Haiti. (R. Snook, personal communication, January 11, 2013)

Both short and long time staff members know they are constantly sowing seeds, even in the setting of the drudgery and repetition of their aviation jobs. Their work is an act of spiritual service.

It's like aircraft maintenance. A small thing can have huge consequences. I trust the impact of all these small things will have a greater impact in Haiti. This is something I share with the younger pilots many times. I can sometimes do the right thing for the wrong reasons. In recent years, I've come to realize God judges me for what I do. I have to be concerned about people, but not necessarily about what they think. Humility is the most elusive of Christian virtues. I think of humility not as being lowly, but as not

thinking of myself at all as was said by C. S. Lewis. I try to mentor, to talk with the guys. The expectation is of trying to do things well. The Puritans believed, what they did was a manifestation of their worship. We do things well, even in the details because it's an act of worship. It pleases God to do things well. Everything we do has a spiritual component. How I do things, how I treat people, how I do my work, all have spiritual components. (E. Hallquist, personal communication, January 9, 2013)

Within the aviation community, aspiring pilots typically follow a career in military or commercial aviation. A younger pilot remarked about MFI's culture and his original desire to become an airline pilot:

I looked into the airline industry. It became less desirable. My calling was to serve the Lord with my life. My preference was for larger aircraft with two pilots. It's more than flying boxes. It's neat to have the Church connection and to realize the whole body of Christ is working together for the sake of the Gospel. This is where I would like to be until God opens or closes another door. There is very little attrition here. It's a small organization with more person to person relationships. We are a family; we work together as a team. (R. Oostdyk, personal communication, January 11, 2013)

An important cultural element at MFI is charity and generosity at home and abroad. They are known for their service and commitment to the Fort Pierce Airport and community and for being responsible corporate citizens. This notion was consistently and uniformly voiced by those outside of the MFI organization. At the time of the researcher's visit to MFI, the local Fort Pierce newspaper had published a front page article noting the passage of the third anniversary of the 2010 Haiti earthquake and the subsequent relief effort as well as the upcoming Save Our Starving Children food packing event. Shortly after arriving at Fort Pierce in 2005, MFI realized

the airport's need for a spacious hangar for the airport's annual open house and volunteered their facility. The story was shared of MFI loaning one of their two aircraft tugs with a neighbor when theirs broke down. MFI's facilities are used by the Fort Pierce ATC for safety seminars, as no other appropriately sized facility exists. Older teenage males have the opportunity to volunteer at MFI's facilities in the summer months. Their facility was used as a critical staging area for the 2010 Haiti relief effort, and Florida State Highway signs remain posted directing Haitian relief efforts to MFI's facilities. In the words of a MFI's leader, a sense of community awareness, impact and influence is essential:

If someone has a need in the community, we want to help them. We had an auction to help pay for summer school meals. The airport has an open house that's here. We use our facility as a tool to reach the community. It's had a good community impact. We have a retired judge and county commissioner who volunteer here. We want to reach out to people. They may do this because they are interested in Haiti, but they may be unchurched non-Christians, they see something different here. (R. Snook, personal communication, January 11, 2013)

People and Human Assets

People or human assets were defined as human capital, are an essential and valued component at MFI and a key to the success of their daily mission. Those at MFI share a common belief and motivation. As their operations have changed and grown, so have their needs. Once again, they have seen how God has provided the right people at the right time, in the short and long term. One long term missionary offered the following reflection:

I have been here for 21 years. I have watched how God has sent the right person at the right time, be it volunteers or staff. We all work together to accomplish the same end

goal. That is to build God's kingdom and to spread the Gospel. God has orchestrated the whole thing through the years, the team he has assembled here. It's the best we ever have had. Each person on staff has unique gifts that they bring to the organization with their own skills. (B. Killian, personal communication, January 11, 2013)

As an aviation operation involved in charitable operations, MFI is not exempt from governmental regulation. Even a qualified ATP, airline transportation pilot, outside of their organization is not allowed to operate one of their aircraft:

We use volunteers but not as pilots, it's too critical. We need to know who is flying the airplane. These guys have been here for years. I know their training, their background, their character and I trust them. Someone who spends a couple of years to raise support isn't likely to be doing that to get fifty hours in a DC-3. When I interview someone, I try to search out their heart. As you know, these are long flights. When you come back, you're beat. You do that two or three times a week, and pretty soon you say, I can't do that anymore, I'm going to find a job flying that not's so strenuous. These guys do this because, not to build hours. Our guys have between 5000 and 25,000 hours. They do it because they have a heart for the people in Haiti, missions and this organization. I try to find out their heart. Why do they want to do this? The flying gets old after a while, as does working on engines and checking in boxes. What keeps you doing this? You know what you are doing helps someone in Haiti. It's a part for a car, a medication, something for an educational program. (R. Snook, personal communication, January 11, 2013)

Multiple times the remark was given about the personal concerns the organization's leadership has for the welfare of each staff member. This is completely consistent with their mission as a faith-based aviation organization. It is also noted in the organization's financial

commitment to each staff member, as well as their policy for short term mission trips to Haiti for each staff member, regular leave for support raising and compensatory time off following extended duty time. The Board of Directors has mandated two members of the senior leadership and executive committee have extended time off later in 2013 utilizing months of accrued vacation and time off (H. Martin, personal communication, January 11, 2013). MFI's human assets, their people are cherished as a God given resource. Multiple times short and long term missionaries commonly remarked about the caring, committed and kind nature of those at MFI as well as their shared cultural bonds.

Volunteers

Volunteers were defined as people who work without being financially compensated. These people are essential and critical to the daily efforts of MFI. As an acknowledgement of the importance of volunteers at MFI, a full time staff person has the responsibility for coordinating volunteer services. Tens of thousands of volunteer hours are served each year (J. Karabensh, personal communication, March 3, 2013). During the 2010 Haiti earthquake relief efforts, volunteers routinely served ten to twelve hours per day for months greatly facilitating and multiplying MFI's effective response (T. Long, personal communication, January 8, 2013). Although traditional definitions of employment exist, at MFI, in some ways these boundaries are blurred as volunteers have served full or part-time daily for decades sorting missionaries' mail and cargo. Fulltime seasonal volunteers assist annually during MFI's busiest seasons. These ranks include retired missionaries from Haiti, retired businessmen and airline professionals and many others. It is a great opportunity, and an unpaid day job. In Dick Snook's words:

We use volunteers in every aspect except the flying part. The volunteers are unique here.

It's a wholesome environment here. The volunteers see how we use our money.

Volunteers may work as hard as we do for the winter months while they are here. Often

retired, before they go back home, they may come in with a financial donation. They have seen the insides of our operation and our integrity, and they choose to support us financially. That's why we are so open with tours. Once people get to know and trust us, they will pray and give to the ministry. Our fulltime volunteers will give tours, and it's as if the operation belongs to them! That's what I like, because it belongs to them. It's not about what MFI does; it's about what we do. We are a family. We are all parts of the body as in God's word, all the parts working together to get the job done. We have good camaraderie here. (R. Snook, personal communication, January 11, 2013)

Perhaps there is a lack of critical distinction as in other business models because of a sense of common ownership and empowerment and an acknowledgement and recognition these volunteers are God given. The people at MFI serve a common purpose. They are all servants and stewards of what God has provided to be abundantly and generously shared with others. Time and time again, in their fifty year history, this sharing with an open hand has produced fruits which continue to be multiplied.

External Confirmation

From external interviews and questionnaires, descriptions and adjectives commonly used by others to describe MFI include: accommodating, always there, awesome, caring, cheerful, Christ-like, compassionate, competent, courteous, dependable, efficient, essential, ethical, excellent, first rate, friendly, friendships, godly, great faith based organization, great people, hard-working, helpful always in all ways, honest, hospitable, kind, like family, loving, nice, organized, professional, relationships, safe, servant's heart, tribute to the community, upright and wonderful. Some of the customers and missionaries interviewed have been flying with MFI

and been dependent upon their services for three decades or more. They consider MFI to be an integral part of their family.

I'm afraid we are very biased where MFI is concerned. They have become an important part of our FAMILY in many ways. We've stayed with the pilots and their families. We housed MFI personnel when they come to Haiti. We are friends with them and their families. We've watched their children grow. MFI's service to so many is an inspiration to people everywhere. The seeds MFI have planted, not only in Haiti, but in the Dominican, the Caribbean, and all of Central America will grow and last for generations. They not only care about people, they put feet to those cares and DO what the Lord tells them, they REACH OUT! They are WALKING their faith, not just talking it. We work closely with the director of the airport here in Cap-Haitien, and they have said that MFI is a unique and very respected organization throughout Haiti. They never ask, they always GIVE. Those were the words of the director. When rebuilding the airport after some political situations, MFI sent in things the airport needed to improve the "international airport". They ASKED what the airport needed, and helped out when possible.

(Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor), Appendix F, February 22, 2013)

Participant Observation

In anthropology and sociology, the term fictive kinship is used to describe a family bound together by common ties of affection, concern, obligation and responsibility and not by bonds of either blood or marriage (The Free Dictionary, 2013). Such is an effective definition of those at MFI. A compelling case may be made in examining the research data about Missionary Flights International of the effects of common motivational factors from shared spiritual identify and

purpose in achieving common goals. This has created a powerful synergy in which the sum is greater than the collective parts. The parts, in this case, MFI's people have subjugated their personal interests in fulfilling individual areas of responsibility while acknowledging authority and accountability. In short, everyone is on the same page. There is recognition of experience, responsibility and authority without a militaristic sense of rank and seniority. There appears to be a cultural consistency and pervasiveness, established from the top down throughout the organization. This was best illustrated by one of the senior and oldest members of the organization. Following a lengthy day of tiring flying ending in the evening, MFI's CEO was at the organization's front doors less than ten hours later the next morning at 0530 to welcome their incoming missionary passengers and to be sure everything was in order for that day. In two hours, he would also be present to welcome the staff for the day upon their arrival. In many organizations such responsibilities would be delegated to junior members. When a remark was given, Dick Snook mentioned, as an Iowa farm boy, one wasn't expected to sleep beyond sunrise. It likely goes well beyond Iowa to personal and professional motivation. It was also manifested in his and other senior member's concerns for assuring junior staff has time with their spouses and children. This is an unlikely cultural norm in the business world. After nearly thirty years at MFI, his thoughts were summarized: "It's a great work and I can't imagine doing anything else." (R. Snook, personal Interview, January 11, 2013). There is also a sense of mutual kinship, loyalty and relationships between those at MFI and the missionaries they serve, linked by a common purpose and commitment over decades.

At MFI's headquarters office doors are kept open. Staff members, especially the senior leadership, readily wander into each other's offices as needed with questions, soliciting answers,

seeking input and collaboration, developing consensus with obvious trust, mutual respect and consideration. As stated by one senior pilot:

It's very much a team effort and process. This is readily seen by volunteers. The team is everyone from volunteer to the president. They are all valuable and valued as team members. It is critical to what we do and the secret to getting the job done. (B. Killian, personal communication, January 11, 2013)

In observation, it is apparent that Missionary Flights International is a trust, a trust in a spiritual sense, in that God has entrusted them with resources and opportunities. It is also a multi-generational time honored trust with fifty years of traditions being passed from one generation to the next. In the next few years, most of the senior leadership will be retiring. Through years of mentoring and internal promotion, a new generation of leaders will emerge tempered in the ways and values of MFI.

As American missionaries, both short and long term, are immersed into Haitian culture, MFI constitutes a lifeline to the rest of the world. Time and time again this has been confirmed in the research data. Although somewhat routine, even to MFI's most remote outpost of Pignon which is served only monthly, the aircraft's arrival is a special occasion. We were swarmed by awaiting Haitians and Americans. It is a distant outpost only hours away from the American mainland, but without MFI, could have been in another galaxy.

As in any airline or aviation operation, attention to a myriad of details is essential to safe operations and customer satisfaction. This is done routinely at MFI and is evident in their safe operations and in their patrons' accolades. President Snook remarked, with some frequency he is asked by retired airline pilots who would like to purchase an old DC-3 and mimic MFI's

operations. His advice, do not do it! It is very complex and expensive. They can routinely do it with professional excellence only because of their vast experience and storehouse of spare parts.

These people at MFI, both paid staff and volunteers, are deeply committed to their service at MFI. In several interviews, tears were apparent as people told their stories, joyful stories. Time and time again, it became apparent MFI is a very special aviation operation with a very special purpose, of standing in the gap, for God's people. It was also apparent MFI has a broad base of support and supporters for its operations and its missionary pilot/mechanics. In a purely commercial operation, such support would not likely exist.

In summary, three sides of triangulation in the missionary phenomenon were supported with collaborative evidence in interviews, questionnaires and observation establishing the value MFI's dedicated, concierge service, to their missionary customers beyond the customary scope of aviation services. This service supports the extra-ordinary needs of missionaries and establishes a reliable lifeline to Haiti. Data triangulation also supports the importance of serving as a vocational or ministry calling within the organization and of the spiritual elements of evangelization, prayer, provision and faith in the history and culture of MFI and demonstrated by its staff and volunteers.

Summary of Results

In summary, the research data composed of internal and external interviews, external questionnaires, field notes and observations illustrated two distinct phenomena, aviation and missions, each with six distinctive subcategories related to each phenomenon. Aviation and its subcategories of aircraft, operations and professionalism were mentioned in the research data at least 148 times. Missions and missionaries and its subcategories of serve/service, evangelization/prayer, faith (in God's provision)/ support (fund raising), culture/history, people

(human assets) and volunteers were mentioned at least 221 times in the research data. The data strongly supports and confirms Missionary Flights International goal of providing professional aviation services in support of missionaries in the Caribbean, especially in the Republic of Haiti. The organization is deeply committed to excellence in its aviation and ministerial operations. This excellence has been recognized by others, outside of the organization in the United States and in Haiti. Moreover, their broad spectrum of support services has been deemed as essential and critical in the support of missionaries in Haiti.

CHAPTER IV – DISCUSSION

The aviation phenomenon of faith-based mission aviation is largely a post-World War Two development. However, there is some evidence of limited application of aviation for missionary activities starting in the late 1910's after World War One. This application was most limited because of the technological limitations of the aircraft of this era. Only a handful of scientific or scholarly treatises have been written on the subject of faith-based mission aviation since the late 1940's.

Today, there are more than one hundred faith-based organizations involved in missionary aviation globally, flying aircraft from small Cessna 172s to jumbo jet Boeing 747s. These organizations typically have a combined humanitarian and spiritual purpose.

Missionary Flight International of Fort Pierce, FL is part of the post-World War Two expansion of mission aviation into the third world globally. In 1964, they began their flight services in support of missionaries in the Commonwealth of the Bahamas, off the eastern coast of Florida hauling mail. In the past fifty years, they have broadly increased the scope of these missionary services. They have established a unique aviation niche in serving missionaries primarily in the island nation of Haiti in the Caribbean seven hundred miles from their headquarters in Fort Pierce.

The research question of determining the purpose, scope, and value of MFI's faith-based mission aviation services, guided the conduct of this study. A qualitative, ethnographic study through cultural emersion into this organization was undertaken to gain an understanding of this little known aspect of civilian aviation to document the activities of one faith-based aviation organization. The ultimate goal of this study was to answer the research questions by documenting the value of the faith-based aviation services of MFI; to highlight the organization;

and “to discover what makes them tick!” In so doing, this study hoped to convey to the reader a greater understanding, and to create a picture, through an in-depth ethnographic study, of mission aviation.

MFI is a unique mission aviation organization. Most mission aviation organizations are located and operated solely in foreign countries utilizing single engine aircraft with much smaller capacities and shorter ranges, not typically flying over open oceans. For example, in a recent year, Mission Aviation Fellowship (MAF), with their fleet of 140 aircraft flew over 33,000 flights, carrying 98,000 passengers and eight million pounds of cargo in a “bush” setting. In contrast, in 2012, MFI’s two DC-3’s flew over four hundred flights, each of 3.5 hours average duration, with more than 4,600 passengers and nearly 800,000 pounds of cargo. There is no contest or competition; it is a comparison of apples and oranges. There are likely dozens, if not hundreds of organizations utilizing smaller aircraft in the third world for faith-based mission aviation. There are very few, such as MFI, utilizing larger aircraft in their application. Consistently, MFI has delivered tons of cargo and thousands of passengers annually for decades.

Beyond the obvious question of statistically documenting MFI’s effectiveness in providing air transportation services, a consistent theme emerged of providing a lifeline in numerous ways from the United States to Haiti. Twelve open ended questionnaires completed by both long and short term clients of MFI, saturated with data, provided a consistent picture of professional, dependable, cost-effective aviation services. Short term missionaries routinely mentioned MFI empowering their faith-based humanitarian and spiritual efforts in ways no civilian airline could, or would. Long term missionaries who have utilized MFI’s aviation services for decades are particularly grateful for them, “standing in the gap”, especially at times of natural disasters, such as flooding, tropical storms and the 2010 earthquake, civil unrest and

medical emergencies. MFI's services were declared as being essential and critical by these missionaries. A common theme echoed by the Haitian missionaries was a sense of gratitude and appreciation and in asking God to bless MFI. As stated by one Haitian missionary, the seeds MFI have planted will grow and last for generations, caring for people and in following the Lord's direction. Those at MFI see themselves as serving heroes, when in practice, they are also heroes.

In examining MFI, what first stands out is their use of aircraft. Before long, one discovers, this is not a typical aviation organization. Indeed, they daily effectively use aircraft to overcome geographic barriers. However, looking beyond, into the cultural values of the organization, one discovers many other critical and essential elements. As an organization, they have an effective fictive kinship compelling them to serve for a common spiritual purpose. They have a common work ethic. They have established a family community that extends beyond their organization to thousands of missionaries. Many at MFI mentioned they could not imagine being any place else.

However, as central as aviation is to MFI, without faith, there would be no flight. This element strikes to the core of the organization and its people. It is in the belief of a higher calling that these aviation professions labor so intensively for a lifetime. Their wages are paid beyond a monetary sum. Faith, beyond God's provision and protection, goes to proclaiming the good news of the Gospel of Jesus Christ and with worship in their work, no matter how routine or mundane.

As an organization, they are not blind to fiscal stewardship in providing their services. They must be competitive with other carriers and distinguish themselves with superior services. There is an underlying notion of providing and caring for missionaries. They are most mindful of expenses and are constantly seeking ways to minimize their costs. Their patrons recognize they

are a unique organization and not a typical, for profit money making business. They partner with a network of likeminded organizations for aviation services they themselves cannot provide.

As a business practice, they follow the biblical principle of not acquiring debt. They see God showing up each day, most recently in funding their aircraft overhaul and in providing a spare aircraft. In recent years, those at MFI see Him as overseeing pivotal events in their history with the acquisition of new aircraft, a headquarters with new hangars and in the 2010 earthquake relief effort. At the heart of the organization is a shared culture of values. They commonly admitted, each in their own way, it is sometimes easy to get lost in a mountain of cargo or a passenger manifest. For this reason, each MFI missionary is encouraged to spend time in Haiti to reconnect with those they serve. They share a common, pervasive culture initiated at the top of the organization which infiltrates throughout. They are frequently acknowledged by others for having a servant's heart. This unique corporate culture is in contradistinction to a commercial aviation operation.

The organization's leadership is not blind to the challenges they will face in the future. One leader remarked it is difficult to see into the future to develop a five or ten year business plan. They are assured, in keeping with the biblical principle, as God has provided opportunity, He will also provide provision. As an earthly creation, MFI is not free from flaws. Two most commonly mentioned were a tendency for a disconnection from the Haitian people as the opportunity for cultural immersion in Haiti is limited. The other is the limited capacity of their aircraft which, especially in busy seasons, book up quickly. As an organization they face daily challenges, but are absolutely confident God's guiding hand. Every concern is shrouded in prayer. In the coming years, they will face the challenges of replacing senior leadership and aging aircraft. Three of their most senior leaders will be retiring. It is their practice to promote

from within, and there are capable leaders, tried and tempered in the organization to fill these roles. They are all highly educated with nearly seven years of college for preparation into the field of mission aviation. One might wonder about cultural inbreeding, the potential benefit of external input and the need for formal training in management expertise. The initial acquisition of the DC-3s began a quarter of a century ago and the more recent conversion to the DC-3 TP was completed this decade. These aircraft have inherent limitations being of an aged design. These aircraft are older than any of MFI's people. Mindful of this, with God's provision, they are open to the use of other aircraft.

MFI is the benefactor of the deliberate, conscious charitable support of hundreds of individuals who contribute their time, talent and treasure. This is an important affirmation which empowers MFI and its people. With this trust, they are mindful of being wise stewards of God's provision and of their reputation, one of integrity and generosity.

Not only has MFI consistently demonstrated the value and utility of aviation in overcoming geographic barriers, they have also demonstrated the value of a shared culture with everyone working together with compatible and not competitive goals. This often requires the forgetting of self for a higher purpose. Ironically, they do not see this as a sacrifice but as a scriptural directive. Even with a ministerial Kingdom perspective, they are constantly seeking new ways of serving missionaries and the people of Haiti with humanitarian and spiritual works for food, clean water, education, agricultural, health programs, evangelization and church growing. Clearly, those within MFI have a heart and a burden for Haiti, one of the most destitute nations in the world and her people and their desperate situation especially following the catastrophic earthquake of 2010. MFI occupies a unique niche not duplicated by any other organization in the region. In Haiti, they make a huge difference. With God's provision, they

look forward to expanding their missionary flight services throughout the Caribbean basin in keeping with their biblical directive of standing in the gap (Ezekiel 22:30) for missionaries.

Limitations of this Study

This was a qualitative study of a single faith-based mission aviation organization. Its intent was to document and illustrate the value of aviation in alleviating human suffering and in the advancement of Christian ministry. It is impossible to extrapolate from this study or from the MFI experience the complete value of faith-based mission aviation in the world nor of its potential global impact. MFI is a unique organization, flying older, multiengine, higher capacity aircraft from an American base into and out of the third world multiple times each week. This identical solution might not be applicable in other areas of the world due to different geopolitical factors. No doubt, Haiti is a unique setting which MFI has carefully nurtured and cultivated over the past half century. Very few aviation organizations in the world routinely utilizes the DC-3 TP for passenger service today. It has been used in Africa. Potentially, the DC-3 might have application in Asia.

Theoretically, even with a large global fleet of heavy but nimble aircraft and crews, one would need to drastically expand the number of missionaries performing their spiritual and humanitarian works. The need likely exists, but the workers are relatively few. Most of MFI's flights are for short and long term missionaries originating from North America. A four hour flight for a one week mission trip to Haiti is much different than a mission trip to Indonesia requiring many days of travel merely to reach the field. Christian aviators are serving throughout the world today utilizing short range single engine aircraft. The need and utility for a routine use of a larger aircraft such as the DC-3 has not been documented.

The world is becoming increasingly hostile to Christian missionaries in foreign countries. Missionaries are being recalled back to their home countries because of worsening violence in the field. Aviation services have been curtailed as a consequence. Aviation assets can be likely targets. Organizations will unlikely expand into these areas of risk. As mentioned in an interview with an air traffic controller, the DC-3 is a large, slow moving aircraft easy to see at a distance. General aviation aircraft are potentially easy target. Missionaries are no less likely to venture into harms ways today than David Livingstone in the 19th, or Nate Saint in the 20th century. As documented in this report, aviation has made missionaries lives easier and more bearable. The question remains, will aviation remain a viable option in this changing environment?

In the global spectrum of faith-based mission aviation, the 2003-2007 FlightPlan Project was likely the best, most recent and comprehensive study on the subject. As mentioned in Chapter I, it had a primary business focus in positioning missionary aviation for the future. This was a privately funded multi-year study of more than one hundred faith-based mission aviation organizations worldwide. It noted a possible trend of global aviation missions moving away from their traditional focus in overcoming physical geographic barriers with a new emphasis on overcoming political, cultural and religious barriers. The FlightPlan report documented the continued growth of isolated rural populations in underdeveloped areas worldwide making aviation a most viable option. The question is unanswered about the expanded use of aviation in faith-based missions. Missionaries will continue to have obstacles of accessibility, isolation, cost, cargo transportation, and safety and security. Whether they will have a powerful advocate advancing their work such as MFI is uncertain?

Recommendations and Future Research

A pilot shortage in missionary aviation has been noted. Those involved in the very specialized training of missionary aviators are aware of the short coming, in part caused by mounting student debt. Future studies could document trends in this area and remedies to correct this problem. Faith-based mission aviation is largely beneath the radar, overshadowed by commercial aviation. It is a unique niche. With electronic resources, such as the internet, Facebook and YouTube, this underpublicized aspect of aviation will be more broadly announced in the future with greater public awareness and support.

On a larger but most relevant scale, the question was raised more than a decade ago about the effectiveness of missions, especially short-term missions. Steve Saint, in his 2001 book, *The Great Omission: Fulfilling Christ's Commission Completely* (Saint, 2001) and a companion 2008 work *The Missions Dilemma* (ITEC-USA, 2013), asks if there is a better way of doing missions? Do short term missions have long term results or do they create dependency? More of the same may not be the answer. Annually in North America, 1.5 million missionaries spend \$2.4 billion performing short-term missions. With the North American feel good approach of wanting to fix the world's problems, missionaries inadvertently have done harm in suppressing the development of the indigenous church, "keeping millions of believers from fulfilling their role in God's Kingdom and millions of others from hearing the Good News" (Saint, 2001). Saint states, missions are not about building buildings. The North American church and their missionaries must see things from the people's perspective. "If you could see and feel what it is like to have current North American missions done to you, you would want to reevaluate how you do missions to others" (Saint, 2001). This issue is beyond the scope of this study, however it is relevant to all missionary efforts in foreign lands.

Those at Missionary Flights International are aware of the coming succession in their leadership. New leaders are being groomed. As documented, the world at MFI has changed greatly in the past decade. No telling where the next decade will lead, but the organization must continue to be purposefully lead into the future. New paradigms in leadership must be entertained just as in the previous succession from Don Beldin to Dick Snook, to take MFI to the next level. As retirement nears for these leaders, a plan of succession should be developed. The DC-3 will remain economically viable until their operating costs become prohibitive. With their turboprop conversion, this generation aircraft has received a new lease on life. It is unknown whether such a transformation can again occur. Non-profit organizations struggle in these stressful times in the American economy. MFI must try to develop resources to acquire a third DC-3 TP, not to expand, but to maintain its current service and prolong the longevity of their current aircraft. They must try to develop the means to accumulate resources to acquire the next generation of aircraft. It likely will be a decade's long succession just as the case with the conversion from the radial to the turbo propped DC-3. As the aircraft evolve, so too will the organization, the aviators and their training. Will it continue to be necessary for all missionary pilots to also be certified aircraft mechanics? As aircraft grow in complexity and modernity, this requirement may become obsolete.

Provision will be necessary for a newer generation of aircraft and leaders and the next generation of young missionary aviators. Those at MFI firmly believe, in their fifty years, God has consistently shown He is their provider and that He will continue to do so in the future.

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Appendix A

IRB APPROVAL

December 11, 2012
Joseph Cooper, Paul Craig
Department of Aerospace

jhc3k@mtmail.mtsu.edu, Paul.Craig@mtsu.edu

Protocol Title: "Faith Based Aviation: An Ethnographic Case Study of Missionary Flights International"

Protocol Number: 13-148

Dear Investigator(s),

The exemption is pursuant to 45 CFR 46.101(b) (2). This is because the research being conducted involves the use of educational tests, survey procedures, interview procedures or public behavior.

You will need to submit an end-of-project report to the Office of Compliance upon completion of your research. Complete research means that you have finished collecting data and you are ready to submit your thesis and/or publish your findings. Should you not finish your research within the three (3) year period, you must submit a Progress Report and request a continuation prior to the expiration date. Please allow time for review and requested revisions. Your study expires on **December 11, 2015**.

Any change to the protocol must be submitted to the IRB before implementing this change. According to MTSU Policy, a researcher is defined as anyone who works with data or has contact with participants. Anyone meeting this definition needs to be listed on the protocol and needs to provide a certificate of training to the Office of Compliance. **If you add researchers to an approved project, please forward an updated list of researchers and their certificates of training to the Office of Compliance before they begin to work on the project.** Once your research is completed, please send us a copy of the final report questionnaire to the Office of Compliance. This form can be located at www.mtsu.edu/irb on the forms page.

Also, all research materials must be retained by the PI or **faculty advisor (if the PI is a student)** for at least three (3) years after study completion. Should you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,

Andrew W. Jones

Andrew W. Jones
Graduate Assistant
Compliance Office
615-494-8918
Compliance@mtsu.edu

Appendix B

Middle Tennessee State University Institutional Review Board Informed Consent Document for Interviews

Principal Investigator: Joseph H. Cooper
Study Title: Faith Based Aviation: An Ethnographic Study of Missionary Flights International
Institution: Missionary Flights International, Fort Pierce, FL

Name of participant: _____ Age: _____

The following information is provided to inform you about the interview and your participation in it. Please read this form carefully and feel free to ask any questions you may have about this interview and the information given below. You will be given an opportunity to ask questions, and your questions will be answered. Also, you will be given a copy of this consent form. Your participation is voluntary and you are also free to withdraw at any time.

You are being asked to participate in this interview because you are an important member of Missionary Flights International. Your responses will be recorded and may be audio taped and/or videotaped.

You may get emotional when sharing your experiences. We can pause to rest at any time during the interview or stop if you choose to do so. However, this is an opportunity to share your story helping to preserve the past and hopefully enjoy yourself as well.

The data gathered in this study is not confidential with respect to your personal identity unless you specify otherwise. When this material becomes available, it may be read, quoted, or cited from and disseminated for educational and scholarly purposes.

All efforts, within reason, will be made to keep the personal information in your research record private but total privacy cannot be promised. Your information may be shared with the MTSU Institutional Review Board, the Office of Human Research Protections, if you or someone else is in danger or if we are required to do so by law.

If you should have any questions about this interview please feel free to contact Joseph Cooper at 715-577-0821; jhc3k@mtmail.mtsu.edu or my Faculty Advisor, Dr. Paul Craig, Professor of Aerospace at 615-898-2788; pcraig@mtsu.edu.

For additional information about giving consent or your rights as a participant in this interview, please feel free to contact the Office of Compliance at (615) 494-8918.

STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS INTERVIEW

I have read this informed consent document and the material contained in it has been explained to me verbally. I understand each part of the document, all my questions have been answered, and I freely and voluntarily choose to participate in this interview.

Date

Signature of Interviewee

Consent obtained by:

Date

Signature of Interviewer(s)

Printed Name and Title

Appendix C**Middle Tennessee State University Department of Aerospace Consent of Research Proposal****Principal Investigator: Joseph H. Cooper****Study Title: Faith Based Aviation: An Ethnographic Case Study of
Missionary Flights International****Thesis Advisor: Dr. Paul Craig****Reader: Dr. Wendy Beckman****Consent for above research proposal.**

Thesis Advisor: Dr. Paul Craig**Date**

Reader: Dr. Wendy Beckman**Date**

Researcher: Joseph Cooper**Date**

Appendix D

Middle Tennessee State University Institutional Review Board Consent for Participation by Researchers

Principal Investigator: Joseph H. Cooper

Study Title: Faith Based Aviation: An Ethnographic Study of Missionary Flights International

Institution: Missionary Flights International, Fort Pierce, FL

Missionary Flights International, MFI, gives Joseph H. Cooper, principle investigator, and Professor Paul Craig, faculty advisor, permission to conduct an ethnographic case study of Missionary Flights International and for an onsite visit of MFI's operations in Ft. Pierce, FL for the purpose of observation and interview of personnel and where appropriate, participation in the organization's aviation operations. Ethnography is a qualitative observational research method to explore the culture of an organization and its people. This is being requested for a proposed graduate thesis research study in aerospace education, an ethnographic case study of Missionary Flights International for the purpose of documenting the value of faith based aviation. MFI will also give permission for the researcher to conduct interviews with MFI clients, patrons, sponsors and benefactors.

MFI	Name	Title	Signature	Date
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Joseph H. Cooper, Principle Investigator

MTSU	Name	Title	Signature	Date
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Paul Craig, Faculty Advisor

MTSU	Name	Title	Signature	Date
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Appendix E

Interview Questionnaire (MFI Personnel)

Name

Title

Department

Years at MFI?

Are you a paid employee or non-paid volunteer?

Background and experience

Aviation Background

Description of Routine Daily Activities & Tasks

Description of Out of the Ordinary Activities & Tasks

Why do you work at MFI?

What are your greatest personal challenges and opportunities at MFI?

What are MFI's greatest challenges and opportunities?

What are your thoughts about the future of MFI?

Is there anything that distinguishes MFI from other like or similar organizations?

What makes MFI unique?

Do you have interactions with other faith-based aviation organizations?

What are these interactions?

Do you have interactions with other faith-based organizations and individuals?

What are these interactions?

Does the Ft. Pierce community know of and support your organization?

Do you believe your clients and patrons value your services?

Any other thoughts you would like to mention?

Appendix F

Interview Questionnaire (Non MFI-Personnel: Clients, Patrons, Sponsors & Benefactor)

Name

Title

Organization

Description of Your Involvement with MFI

How have you and your organization utilized MFI's flight services?

How have you and your organization benefitted from these services?

Background and experience

What does MFI make possible for you and your organization that would otherwise be impossible?

What are your thoughts about MFI?

Is there anything that distinguishes MFI from other like or similar organizations?

What makes MFI unique?

Do you have interactions with other faith-based aviation organizations?

What are these interactions?

Do you have interactions with other faith-based organizations and individuals?

What are these interactions?

Do you believe your clients and patrons perceive, understand, recognize or value your services and those of MFI?

Any other thoughts you would like to mention?

Appendix G

Figures 2-5.

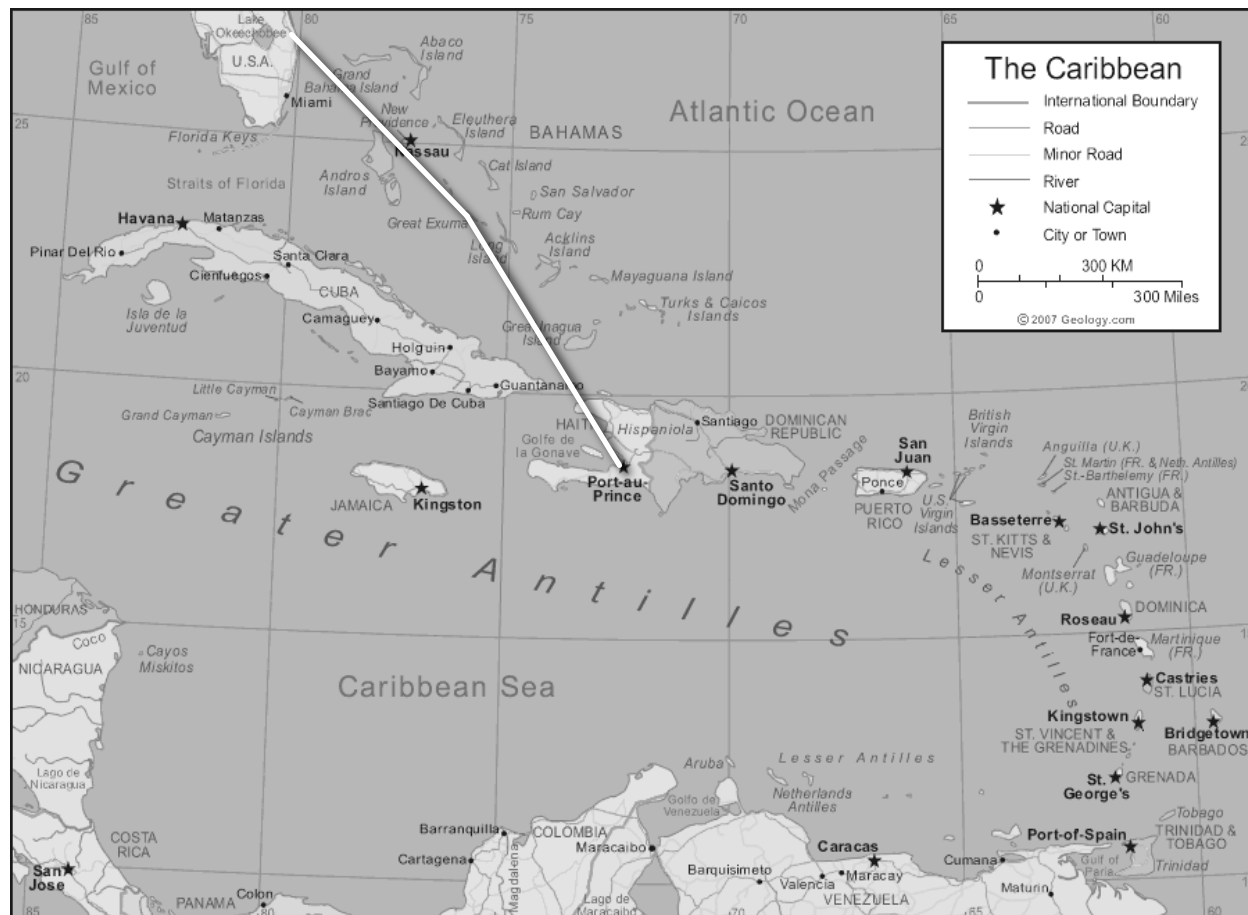


Figure 2. Typical MFI flight path to Haiti over the Bahamas with refueling in Great Exuma. Illustration of the Caribbean basin with Central and South America (Geology.com, 2013).



Figure 3. Map of Haiti and course of January 10, 2013 flight to Cap-Haitien, Pignon and Port-au-Prince (Ezlon.com, 2013).



Figure 4. MFI hangar, interior and exterior of DC-3 TP with passengers and cargo.



Figure 5. Cap-Haitien, Pignon, Port-au-Prince and mountains of Haiti.