

PIONEERS WITH INTENT
MEMOIRS OF AN AIR FORCE FIRE FIGHTER

Douglas E. Courchene



History Office

Air Force Civil Engineer Support Agency
Tyndall AFB, Florida

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by

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Published in cooperation with the
History Office
Air Force Civil Engineer Support Agency
Tyndall AFB, Florida

July 2003
Electronic Edition Published June 2006

INTRODUCTION

For as long as military aircraft have flown, fire fighters have done their part to respond to mishaps, rescue aircrews, and protect the air bases from which airmen operate. Despite the importance of their mission, very little has been written about Air Force fire fighters and their profession. This book, long overdue and written by one of their own, helps begin to fill that void.

Doug Courchene, who served 42 years as an Air Force military and civilian fire fighter, has spent many years compiling information on the machines, clothing, vehicles, and equipment used by Air Force fire fighters. Along the way, he has also gathered stories about individual fire fighters, specific fire incidents, and the heroic deeds that have saved Air Force lives and property over the years.

Among the ranks of early Air Force fire fighters are some whom Mr. Courchene has singled out and designated as Pioneers. These men, most of whom he knew personally, helped lay the foundation of what is today the most modern and best trained fire fighting force in the world. They designed and established criteria for early military fire fighting equipment for the Army Air Corps, the Army Air Forces during World War II, and the Air Force after its establishment as a separate service in 1947. They set the standards and developed the guidelines that govern the career field. They created training programs and established schools. They brought their own integrity to bear in building fire departments that they and the Air Force could be proud of. Many of their stories are told here.

Although this book does not purport to be a comprehensive history of Air Force fire protection, it does gather together in one place an amazing amount of information and numerous stories that might otherwise be lost with the passage of time. We are indebted to Mr. Courchene for his dedication in collecting this information and hope that the publication of this book will inspire others to research and capture other aspects of the proud history of Air Force fire protection.

Mr. Courchene's original manuscript has been edited for style and format. The content has been left intact, with only minor rearrangement. Facts and events have been corroborated when documentary evidence was readily available.

Lois E. Walker
Historian
Air Force Civil Engineer Support Agency

Permission was granted to me to publish this electronic edition in June 2006 and make the document publicly available. Mr. Douglas E. Courchene. Except for this paragraph and the last line of text on page iii, no changes have occurred to the July 2003 version which was only produced in paper copy. *This document is protected by copyright by the undersigned. It may be freely used, printed, copied and distributed without further permission so long as the document is not altered or changed in any way.*

Donald W. Warner
Chief, Air Force Fire Emergency Services
Air Force Civil Engineer Support Agency

FOREWORD AND ACKNOWLEDGMENTS

In the lives of most people, they find that a yearning for historical understanding swells up inside them. For years they coast along, vaguely aware that people such as our fire pioneers did not drop out of outer space onto the Arizona desert floor. As the years penetrate time, our values solidify. That is why so many fire fighters, especially older fire fighters, begin to research the pioneers of our profession. They search, research, and look for storytellers to get a better grip on who they are and why they turned out as they did. The lights of the inner person always seem to glow, then these stories begin to be unearthed. Even those who are ahead of their time, or of another generation, don't escape the influence of historical context.

Looking at the past can both humble and make proud. A sense of humility arises as today's fire fighters come face to face with giants of the past, upon whose broad shoulders we stand. They enable us to see that which had not been seen before. Without the giants of yesterday, visions would be shortsighted and nearby shrubs would be mistaken for giant redwoods.

A book such as this is always a collaborative effort. Behind every writer or writing team there are others whose names seldom appear in print but whose support is absolutely essential for a book's success.

As authors, we know that it is impossible to thank all of our many collaborators by name. But we do want to say that we have felt support of the entire Air Force Fire Protection Family, and we want you to know that your support has been important to us in a thousand ways, large and small. I am also grateful to the History Office and the Fire Protection staff at the Air Force Civil Engineer Support Agency for undertaking to edit and publish this book. Without them, it might never have become a reality.

It has been a great joy to work with all of you.

ABOUT THE AUTHOR

Chief Douglas E. Courchene is a self-taught writer with 42 years of experience in Air Force Fire Fighting. He enlisted in the Army Air Corps on April 17, 1946, and retired as a chief master sergeant in June 1966. His last military assignment was in HQ Strategic Air Command Fire Protection.

Among Chief Courchene's many assignments were: Lowry Fire School; Alamogordo Army Air Field; Fort Worth Army Air Field; Fire Chief, Fort Hood Army Air Field; Noncommissioned Officer in Charge (NCOIC), Dow Air Force Base (AFB); Fire Chief, RAF Station Sturgate, England; NCOIC, Dyess AFB; NCOIC, March AFB; and Fire Chief, Moron Air Base (AB), Spain. After his military retirement, he served in civilian capacity as a fire inspector at Vandenberg AFB, as fire chief at Elmendorf and Seymour Johnson AFBs, and as a fire protection specialist in HQ Tactical Air Command (TAC).

Chief Courchene graduated from the Writer's Digest School, Cincinnati, Ohio, writing to sell non-fiction, in September 1986. He was editor and publisher for almost 12 years of the Retired Air Force Fire Chiefs' Quarterly Newsletter (now called *Quarterly Network Newsletter*), from which many of the accounts and stories in this book were drawn.

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CHAPTER 1

IN THE BEGINNING . . . THE PIONEERS

The first airplane flew at Kitty Hawk, North Carolina, in 1903. That was the beginning of heavier-than-air powered flight. Thirty-four years later, **Pioneer Fire Chief J. K. Schmidt**, at Eglin AFB (AFB), Florida, demonstrated the first U. S. Army Air Corps crash fire-fighting truck using high-pressure water fog to fight airplane fires. The Wright brothers' first airplane could be described as a frail contraption, made of wood, wire, and cloth. Almost the same could be said for that first crash truck, a modified contraption that sprayed high-pressure water.

Chief J. K. Schmidt, never a *braggadocio*, is the first to give credit to other pioneers who searched and experimented with the earliest fire trucks, fire-extinguishing agents, and tactics to fight airplane fires. "No one person could be stuck on oneself," he said. This book has been written to honor a handful of determined pioneers who achieved what could be described as an impossible dream. It involves unheralded figures who lived and worked during a relatively unexplored period of historical significance. These pioneers preceded the Greatest American Generation, referred to by Tom Brokaw, only to become a part of it. They started with ideas and hardly anything else.

In a literary sense, the Retired Air Force Fire Chiefs' *Quarterly Network Newsletter* is the embryo from which this book evolved. The reaction from readers helped gauge the appeal that the book might have. This book is the first to document the joys and pains of Air Force Fire Protection, and it describes some of our early pioneers in all their glory.

In 1937, Fire Chief Schmidt modified a 750-gallon per minute (gpm) Peter Pirsch Pumper as the first crash truck under the auspices of the U. S. Army Corps of Engineers. Instead of the usual space for the fire hose, it had a 250-gallon water tank and rigged plumbing that produced water at the nozzle. The high-pressure Bean nozzle used by Florida citrus growers to spray their trees became the standard nozzle for Air Force crash trucks. The Bean nozzle was also the first adjustable nozzle to produce high-pressure water fog.

Chief Schmidt recalled how fire fighters practiced by forming a "V" and attacking two burning 55-gallon oil drums on the aircraft flight line. The lead fire fighter wore an asbestos suit and acted as rescue man. "Asbestos suits came in two sizes those days, big and too big," Chief Schmidt said.

The Army Air Corps, to be sure, was poorly equipped to fight airplane fires. The Air Corps desperately needed better crash trucks, fire fighter protective clothing, fire-extinguishing agents, training, and fire tactics. New airplane designs dictated that crash trucks and trained fire fighters stay abreast of accelerated military flying operations. Chief Schmidt, Chief Paul Odell, Chief Glifford Cook, and engineer Ray Smith were among the first to combine their knowledge and design newer crash fire trucks for the Army Air Corps.

The U. S. Army, in step with Holabird Quartermaster Motor Base, designed and built the Standard Class 100 crash truck. The Class 100 produced foam at the nozzle and was equipped with carbon dioxide extinguishing agent. The earlier Class 100 crash trucks had a special foam generator that chemically produced foam by introducing powdered chemicals into the water stream, in place of the liquid foam solution.

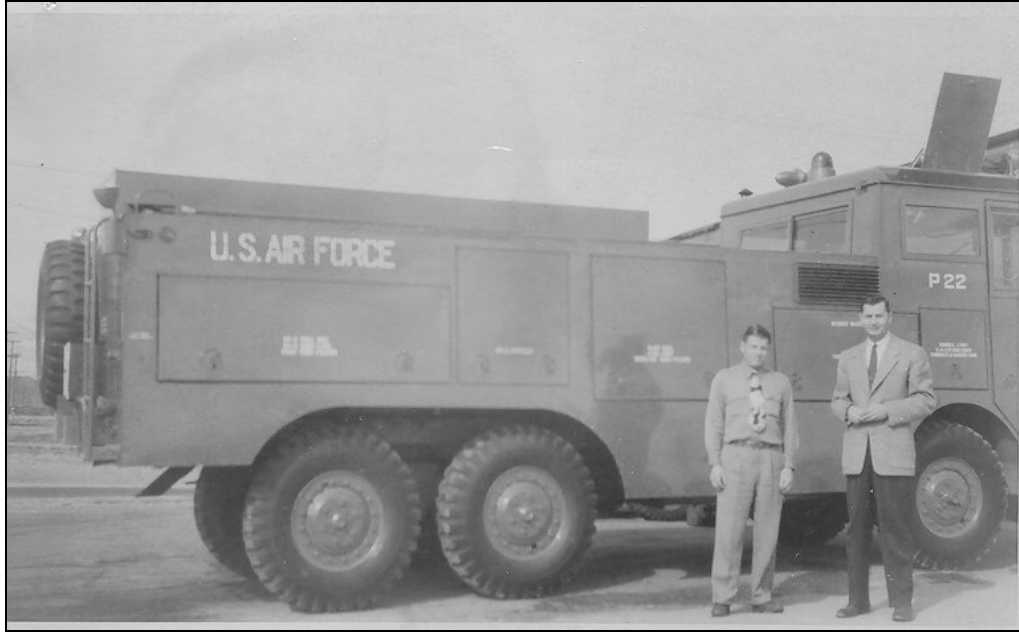


Fire Chief J.K. Schmidt (left), Eglin AFB, Florida, receives a commendation for exceptional performance of duty when, on March 31, 1958, an explosion and fire occurred in the pumping compartment of the alcohol trailer being used to fuel a Redstone missile.

As new equipment was developed, Chief Schmidt conducted tests at the proving grounds at Auxiliary Field #8, Eglin Field. In 1947 he conducted fire tests on eight B-17 bombers with 25,000 gallons of fuel. The premixed water and foam solution they used meant pouring protein foam from 25 five-gallon cans into the 1,000-gallon booster tank of a Class 155 crash truck. That series of tests proved that crash trucks lacked foam-metering devices for exact mixtures of foam and water and that fire fighters needed better nozzles to deliver the desired foam solution.

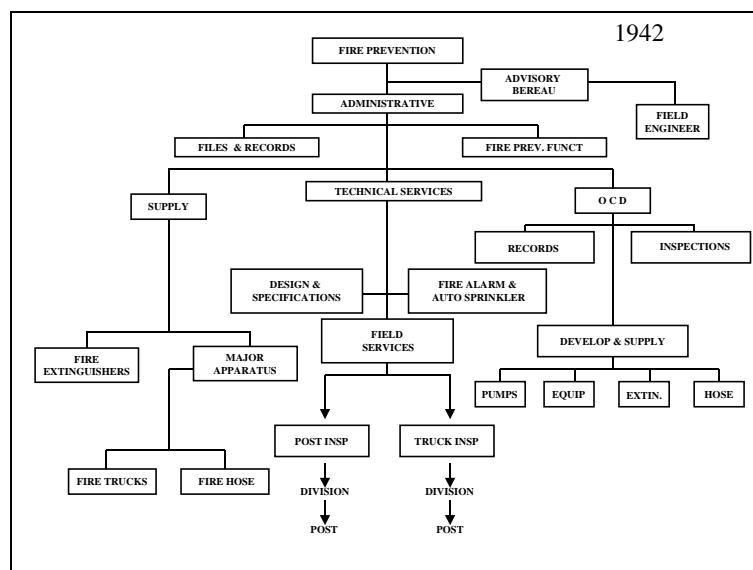
Pioneers focused on developing crash trucks with powerful turrets that had the capability to approach and attack burning airplanes without endangering the turret operators. In short, they wanted a crash truck that could attack and extinguish fires at close range.

The 0-10 Crash Truck Goes To Washington, D.C.—the Congressmen and Senators are all wet. Chief J. K. Schmidt, Roscoe Bell, and Ray Smith demonstrated the new 0-10 crash truck before a gathering of distinguished lawmakers in 1950. Unfortunately, the 0-10 turret operator froze at the controls and sprayed the observing lawmakers. Despite the drenching, the decision makers were impressed and appropriated funds for American La France to mass produce the 0-10 for the Air Force. It was first delivered in 1951. Marmon-Herrington also manufactured the 0-10.



Fire Chief Ross Stephens (left), with Chief Paul Odell, inspecting the new Air Force 0-10 crash truck.

Fire Protection Organization and Administration in the Early 1940s. The organization and operation of Post Fire Departments was a matter of local administration. Advisory service on fire protection was provided by the Fire Prevention Section through an Advisory Bureau of Fire Protection organized and maintained by the National Board of Fire Underwriters. That organization made available to the War Department numbers of experienced fire protection and fire prevention engineers. The fire departments came under the command of Division Engineers and Executive Assistants in charge of repairs and utilities. The Executive Assistants coordinated the fire protection programs. They ensured an equitable distribution of fire fighting equipment and facilities and supervised the training of fire department personnel. They performed inspections and took such steps as were necessary to improve the condition of equipment in service and the state of training and operating effectiveness of fire department personnel at all posts under their jurisdiction. In addition, the Executive Assistants maintained a pool of fire trucks and other equipment, providing temporary replacements for fire trucks and equipment that required extensive repair or replacement. An early organizational chart is provided below.



The fire protection program of the War Department encompassed four basic responsibilities:

1. Design of structural buildings and projects tending to decrease the fire hazard to life and property
2. Construction intended to incorporate fire protection features
3. Place emphasis on good housekeeping, including safeguards for storing and handling flammable materials, checking and correcting defects in structures, and reducing or eliminating potential fire hazards
4. Control and extinguishment of fire and providing methods to control and extinguish fires with a minimum of damage to life, property, and the military program

The armed service or bureau (formerly a responsibility of the Chief of Engineers before July 1, 1942) funded and maintained fire protection equipment for posts under their jurisdiction. This was the beginning of organized fire protection.

Post Commanders designated commissioned officers as Post Fire Marshals. Fire marshals enforced regulations and issued orders aimed at reducing and eliminating fire hazards throughout their posts. They organized, instructed and trained fire fighters in maintenance and operation of fire apparatus, appliances, and fire protection systems. They investigated and determined the causes of fires and rendered reports, collected and preserved evidence, and presented evidence to investigating Boards of Officers.

Post Fire Chiefs were responsible for the technical efficiency of fire fighting personnel assigned to their organizations and the mechanical operating efficiency of all fire apparatus and equipment entrusted to their care. They conducted fire drills and instructed personnel in the use and handling of all fire apparatus and equipment. They maintained a logbook of fire department activities. They had full authority over all fire fighting units at fires.

Local conditions determined whether civilian or enlisted personnel, or a combination of civilian and military, would be employed to provide fire protection. Where enlisted personnel were used, they came from the station complement until an Engineer Service Detachment was available. The use of enlisted personnel detailed to fire department duty from the troop organization wasn't desired unless absolutely necessary.

Post Fire Departments were divided into two equal groups, each being assigned to alternate twelve or twenty-four hour tours of duty.

Salaries were typical of the period. In 1941 Fire chiefs were an upgraded position, with a salary of \$2,000 to \$3,500 per annum. Assistant Chiefs received \$2,000 to \$3,200, Fire Fighter Drivers \$1,800 to \$1,920, and Fire Fighters \$1,620 to \$1,740.

The Air Force Becomes a Separate Service Branch, September 1947. The Air Force grew in its first two years as a separate service, but not without pain. The newly formed fire protection branch made a serious mistake by discarding existing Army Air Corps directives and methods of operating a fire department before establishing its own directives.

Fire Department manpower was problematic, and there were no answers. At first, the Air Force didn't screen airmen for fire fighter duty. Young airmen had little incentive to become fire fighters. Within a year, they were often shipped overseas, unskilled. Most fire chiefs seemed to have no suggestions on the career program or how to make it more effective.

Strategic Air Command (SAC) had 3,446 fire fighters in 1950: 1,007 were 57010 trainee level (29 percent), 32 percent were apprentice basic level, 34 percent senior level, and 5 percent supervisory level. 65 percent were below the rank of staff sergeant. Staff sergeants and airmen first class represented 66 percent of the force; 95 percent had 57170-level slots. SAC was 200 percent in the supervisor category.

Fire chiefs suggested that airmen fresh from basic training be sent directly to the Lowry AFB Fire School, Denver, Colorado. Upon graduation as basic fire fighters, they would then be assigned to Air Force bases for continued on-the-job training (OJT) and upgrade.

Chief Ed Kautz, Biggs AFB, El Paso, Texas, gave this account, November 14, 1952. The purpose of the report was to be more selective of military entering the fire fighting career field. Concerning IQ (intelligence quotient) scores, Chief Kautz reported these figures: 53 fire fighters had an IQ of 0-89, 16 had an IQ of 90-99, and 54 fire fighters had a score of 100 or higher. Eleven fire fighters did not meet physical profile. The military could have asked, "Chief Kautz what's your IQ?"

Reenlistment statistics were also too low to be effective. Strategic Air Command fire fighter reenlistment statistics in 1952 averaged 11.7 percent. The master sergeant grade was 45 percent, and the lower grades were 4 percent.

Captain Musgrove, stationed in Korea in 1953, wrote, "The trouble is that our military 57170 supervisors are unqualified to manage 500 fire fighters in Korea. These are overseas Fire Chiefs. They have skills of a 57130 level fire fighter. They have no experience training others and no respect for department administration. They can't develop fire tactics that work. The training throughout Korea is very poor."

Lieutenant Colonel L. A. Cadwell, Commander, Japanese Air Defense Command, wrote, "Civilian positions being the higher positions, keep the airmen sitting on the fire fighter level. And, the airmen know they're assigned to a base fire department and will never become a fire chief because that position is taken by a civilian."

Chief Paul Odell at Headquarters (HQ) Air Defense Command (ADC), observed, "Military fire fighters don't have the chance to advance to fire chief position. When the military supervisors return to the United States, civilians supervise them. In ADC, it's necessary because the 57170 supervisors, through no fault of their own, lack experience and qualifications at the top. Civilians wear the white helmets, not the military 57170 supervisors."

Chief Tommy Heffernan at HQ Tactical Air Command (TAC), pointed out, "Civilian fire fighters work 60 hours; the military fire fighters work 72 hours weekly. The disparity causes morale problems. Apprentice 57010 fire fighters are untrained, yet they fight fires. Chief Heffernan agreed with Chief Bob Vreeland's position that fire fighters needed basic fire training before their assignments to Air Force base fire departments.



Fire Chief Paul Odell, center, flanked by the Fire Chief and his Assistant Chief, McChord AFB, Washington.

Development and Delivery of New Equipment. In 1946, the Air Force had established a need for a rescue jeep. By 1948, however, the study ended, and by 1950 the project was abandoned. Two years later, a new R-2 rescue truck was delivered to the Air Force. Chief Roscoe Bell at HQ USAF at the Pentagon wasn't too impressed with the bulky and lumbering rescue truck. The grapple cable to the winch was weak and snapped under minimum pull. The unit had poor acceleration, the opposite of the speed needed to reach a burning aircraft. Chief Bell insisted the rescue truck be equipped with tools necessary for rescuers to perform rescue. Meantime, Chief Frank Joseph at MacDill AFB, Florida, had previously designed a rescue truck that proved superior to the first article R-2 rescue truck. Chief Roscoe Bell remarked, "The 0-10 and 0-11A crash trucks can't be maintained at Air Force bases. The Air Force simply has no spare parts."

Lieutenant Colonel M. F. Gregg, Western Air Defense Force, reported, "The Strategic Air Command opposed the development of the Type 0-12 crash truck. I don't think the Air Force will ever see an 0-12." Chief Glifford Cook agreed. Wright-Patterson AFB had responsibility for research and development of crash fire fighting vehicles, and the research was minute. The Army Air Corps had accepted the task from the Corps of Engineers in 1945. Wright-Patterson designed the Type 0-7 Hurst Industries Tanker and the Type 0-8 Hurst Industries crash truck with foam as the prime extinguishing agent, all of which were tested by the Air Proving Ground, September 8, 1950. Low priority killed the program between development and production.

Aircraft Crash Fire Report, AF Form 282. The form the Air Force developed for crash fire reporting was AF Form 282. Base fire chiefs prepared the reports and submitted them with photographs to the major air command (MAJCOM) headquarters. MAJCOM fire protection staff reviewed the reports, endorsed them, and forwarded copies to the Air Force Fire School, the Air Force Inspector General (IG), and the Pentagon. The Air Force Fire School, in particular, was interested in manpower, fire tactics, extinguishing agents and their application, and crash fire truck performance at the crash site. Data from crash reports enhanced classroom and practical training at the formal school.

The "282s" that reached SAC and TAC Headquarters often lacked a detailed description of the overall fire fighting operation and were less helpful to the Air Force Fire School. The author apologizes for having neither the knowledge nor the facts about the greater number of "282s" channeled to the MAJCOMs, but discussion with Chief Warrant Officer (CWO) Lou Garland at the Chanute Fire School confirmed that "282s" were deficient in substance. Sometimes the crash reports did describe a professional response and operation. At the same time, the 0-10 crash truck in-commission rate was a disappointing 50 percent. The Aircraft Accident Investigation Board had every reason to scrutinize fire department operations as part of its findings and recommendations.

Investigation boards were convened after major aircraft accidents. Their final reports identified fire protection deficiencies not part of the "282." For example, the observation that crash crews were too slow reaching the crash site was one of the most common statements in investigative reports. The fire chief's only defense was to listen to recorded tapes at the control tower to prove otherwise.

Early Leadership and Organization. Pioneer, Chief Glifford T. Cook was an erudite man of absolute distinction at the Pentagon, Washington, D.C. He preceded all others in aircraft crash fire fighting. Research revealed more than expected about this man who led Air Force Fire Protection for many years.

The minutes of special conferences and studies show an assertive leader at the helm. Excerpts from those meetings acknowledge a person committed and dedicated to the profession and to making it better.

Chief Cook presided at a Fire Fighting & Crash Rescue Conference at Lowry AFB, Denver, Colorado, October 19-23, 1953. Thirty-five fire protection experts represented all Air Force commands, along with the Inspector General, HQ Air Force, the 3415th Technical Training Wing from Lowry AFB, and E. J. C. Williams, Principal Fire Service Officer from the British Air Ministry in London, England.

One topic raised at the conference was that the Air Force wasn't in the position of the man who, when told that his store was burning, said, "So what! It's insured." The Air Force had no insurance!

Chief Cook was very concerned about design standards and construction criteria. He led a discussion of problems, situations, obstacles, effects, equipment, standards, deficiencies, and improvements in all phases of activity, including logistical support, with regard to overall Fire Protection and Aircraft Crash Rescue services within the Air Force. Chief Paul Odell from HQ ADC noted that he favored adherence to definitive drawings concerning fire station design. The design, however, should allow more stall space for fire vehicles.

Chief Cook showed that he had a firm grasp on the requirement. He stated, "Fire protection facilities should be given number 1 priority." He advocated that fire chiefs "must have an understanding of the Military Construction Program (MCP) and the Operations and Maintenance (O&M) program. They must know how those programs are evaluated and screened by the United States Congress. But first, the project must be 'sold' at base level. Justification is of paramount importance to every reviewer of the project. The description of a project must be concise and portray a clear picture so it will mean something to the person on the other end of the line. It's nothing more than just a piece of paper until it translates what the originator is trying to accomplish."

Participants discussed the fact that, as far as most people knew, there was no standard fire fighting organization plan for the various MAJCOMs. The Military Air Transport Service (MATS) spent 20 days during base visits. United States Air Forces in Europe (USAFE) visits lasted five days. Command people were inspectors, rather than technical advisors.

Fire Chiefs at the October 1953 conference reported they were unhappy with the 0-10 and 0-11A crash trucks. Spare parts were the issue. SAC alone spent \$42 million to maintain its fleet. Glifford Cook reported that he tried to give the Type 0-10 to the U. S. Army. The Army balked!

Chief Bob Vreeland wanted his fire chiefs included in the crash fire truck development process. "The bomber people are in on it," Chief Cook replied.

Chief Jasper Patterson, HQ CTAF (Crew Training Air Force), elaborated on people being reluctant to ask questions outside fire protection concerning ejection seats in jet aircraft. He argued that fire fighters were exposed to danger, and that training should be afforded to those who were tasked to perform rescue.

Chief J. K. Schmidt had concerns about aircraft familiarization. Base fire departments were familiar with the aircraft on their own bases but not transient aircraft.

Chief Cook encouraged conferees to work statistics concerning aircraft fires, which was considered by most as intangible. The Air Force was interested in better tabulations and summaries of fire fighting activities. Mr. Gallahan, HQ CTAF, shared a study of command aircraft crashes. He said the Inspector General, however, refused command-wide distribution of the study for fear that news of fatalities would reach the media and affect recruitment for the Air Force.

CHAPTER 2

SELECTED PIONEER BIOGRAPHIES

Pioneer, Chief Roscoe Lewis Bell was born December 11, 1903, in Port Huron, St. Clair County, Michigan. From October 1931 to May 1941, he was the fire chief at Stuart, Florida. In 1941, he applied and tested for two U.S. civil service positions, Assistant Chief and Fire Chief. Two job offers came at once from Camp Blanding in northern Florida and Morrison Field at West Palm Beach, Florida. He accepted the Fire Chief position at Morrison Field and tenured there from May 17, 1941, until June 1943.

From June 11, 1943, to July 16, 1944, he was assigned to HQ Fourth Service Command in Atlanta, Georgia.

From there he went overseas and was assigned to HQ North African Foreign Wing, Air Transport Command, U.S. Army Air Forces. He worked at Fire Station Number 1. While in North Africa, he accepted a position in Washington, D.C. to work with Glifford Cook in 1944. He remained in the Pentagon until his retirement in the 1970s. While in Washington, he met with representatives from Air Force agencies and industry to structure the development of fire vehicles and extinguishing agents. At the same time, he saw that needed directives were published to guide Air Force fire departments. He personally monitored the crash fire truck program. "I don't know of any one who influenced the program more," Chief Paul Odell said.



Roscoe L. Bell, Chief, Air Force Fire Protection, Washington, D.C.

Chief Bell served with James O'Regan and George Tryon III on the National Fire Protection Association (NFPA) Committee on Aircraft Crash Rescue. Roscoe Bell, Ray Smith, Fire Chief J. K. Schmidt, and Chief Paul Odell played a key role in development of the American La France Type 0-10 crash truck in 1950. The 0-10 later led to the newer, larger American La France Type 0-11A crash truck.

Chief Bell was privy to nuclear weapon tests under fire conditions. The results were published later under "classification" for all Air Force fire departments.

When the new generation P-2 crash truck wasn't delivering foam as designed, Chief Bell and Colonel Delbert J. (Jack) Salmon visited Air Force bases, tested the P-2 fleet, collected data, and solved the nagging problem. When a serious problem occurred in the field, Chief Bell went directly to the source and corrected it. Problem solving over the phone wasn't his *modus operandi*.

In 1950, Chief Bell planned the first annual Air Force Fire Protection Conference and Air Force Chiefs' Banquet at the Peabody Hotel in Memphis, Tennessee. He came to Memphis with empty pockets to plan a conference and banquet. The Air Force didn't fund the banquet. He had faith in his fire chiefs, and they trusted him. At registration, the fire chiefs contributed enough money to have a banquet. The speakers and fellowship were first rate.

After Chief Bell retired, Chief Ben Partin and Chief Paul Durham, HQ TAC, Langley AFB, Virginia, invited Roscoe to the annual fire conferences, workshops, and banquets at Memphis. He was an honored and respected guest. He loved it!

Chief Bell was proud to receive “The Chris Award” at the 16th Annual Columbus Film Council in October 1968. Upon his retirement, he returned to his beloved Stuart, Florida, where he lived in his home while building another home near the water at Rocky Point. He moved there in 1976. Stuart, Florida, was his hometown, and he enjoyed being with his childhood friend Judge Harry Dyer, hunting and fishing again. Other friends from pioneer families were there for him, as well as his wife Bridget and his son and grandson. Because most of his adult life had been spent with Air Force fire chiefs, he had great ties and very close friends among them. Chief Paul Odell and his wife Grace often visited Stuart.

Chief Roscoe Lewis Bell died April 14, 1988. Chief Paul Odell was one of the pallbearers. In 1998, Chief Bell was featured in the popular *Florida Sportsman* magazine for helping establish the Sailfish Club in Stuart. Stuart is considered the Sailfish Capital of the world, and Roscoe promoted the club. The Elliot Museum on Hutchinson Island has interesting pictures in its section about Stuart Pioneers. Chief Bell appears in a number of pictures as their fire chief. Roscoe’s grandsons and great-grandson had their pictures taken in front of the exhibit. The occasion was the Stuart Flower Show.

“As I grow older and I think of going to heaven some day, I hope that Roscoe (Pop) will have a chair next to His,” Betty Stauffer Bell said. Betty is Roscoe’s daughter-in law who shared mutual love and respect for him. Chief Bell was a gentleman who possessed all the fine qualities of an aristocratic southern gentleman. He loved his wife, his family, this country, and his work.

Pioneer, Chief Otis E. Tinkle. Beside Majors Field, Texas, Chief Tinkle was the Fire Chief at Ft. Worth Army Air Field (later named Carswell AFB) for his entire career. He was considered the premiere fire chief in SAC and was the only GS-12 at base level at one point. Someone once described him as having X-ray eyes, a photographic mind, and radar ears. He had the unique ability to communicate and to quote Air Force regulations and technical orders with regularity. He knew department administration as well as department operations. When civilian fire fighters faced a reduction-in-force, he accepted military fire fighters and instilled in them a sense of belonging to the most important fire department in the Air Force. Many military fire fighters under his leadership later became fire chiefs. The author is one of them.

He came to work in his waxed black Model “A” Ford. It chugged down the road with a distinct sound of its own. The chief’s white hat and shirt and gold badge sparkled in the sunlight. Everyone on base knew him. Chief Tinkle was a people leader, and fire fighters followed that leadership.

Carswell had B-29 aircraft and was home of the 7th Bomb Wing, then both the 7th and 11th Bomb Wings that flew B-36s. Some of the worse B-36 crashes occurred at Carswell. In fact, the maiden flight of the B-36 left from Carswell and crash-landed because of a broken landing gear strut on takeoff. Despite many crashes, not a single fire fighter was seriously injured fighting those massive fires.

At a building fire on the flight line in 1947, Chief Tinkle lost his balance and fell off the roof, fracturing his back. He had climbed there to get his fire fighters off the roof. That injury pained him and seriously tapped his energy. Before long, he had more back surgeries, wore a back brace, and later retired.

Pioneer, Chief Paul Odell. Chief Odell was working with Chief Glifford T. Cook and engineer Ray Smith to test fire equipment at Wright Field, Ohio, when Japan attacked Pearl Harbor, December 7, 1941. Army Air Corps fire departments at the time lacked organization, engineers, instructors, and fire truck mechanics. Chief Odell reported for work at once, however, as a fire department instructor. He joined another instructor and engineer John Townsend, from the National Board of Fire Underwriters. They went to the Air Corps Second Lieutenant in charge and asked, “What are we to do?” He replied, “How the hell should I know. Get yourselves travel orders and do what you were hired to do.”

They tried their best to do what they were hired to do for the next 30 years. In 1940-1941, America built many airfields and organized aircraft crash fire fighting departments nationwide. At the same time, the government purchased many 500-gpm structural pumpers manufactured by Ford, Chevrolet, and International for \$2,600 each. Along with fire trucks, wooden fire stations were built and fire fighters, who came mostly from volunteer fire departments, needed accelerated training on the new fire trucks as they were delivered to the Army Air Corps. The volunteers seemed more knowledgeable than big city fire fighters.

One of Chief Odell's first assignments was to board a train and investigate sabotage to a Class 110 crash truck at Topeka Army Air Field, Kansas. They actually delayed the train for Chief Odell to board. Holes were reportedly drilled into the booster tank and filled with putty. Chief Odell recognized the problem at first glance. It was not sabotage, but weak copper baffle plates that had sloshed inside the water tank, snapping the rivets and allowing water to leak from rivet holes.

Chief Odell organized fire and rescue departments at Army Air Corps bases in seven states in 1941. He led a convoy of Class 125 crash trucks from Chicago, Illinois, to New Orleans, Louisiana, and started a fire school at Camp Pontchartrain. In 1943, Chief Odell became Chief of Fire Protection, Northwest Service Command, and delivered more fire trucks to Alaska. Chief Odell headed Fire Protection at HQ TAC from 1946 to 1949.



Chief Paul Odell, center, shaking hands with Chief Mcarltny, McChord AFB, Washington. At far right is Fire Chief William Howard Taft, Hamilton AFB, California,

In 1950, he became the Chief of Fire Protection for Air Defense Command and served there for 23 years, ending his distinguished 32-year career in 1973. For over three decades he tested fire-extinguishing agents and fire protective clothing, including the asbestos suit and hood.

Pioneer, Chief Ross Stephens. Chief Stephens, who penned a chapter in Air Force Fire Protection, is worth writing about. Born in 1910, he was a quiet and gentle man, a friend to many in the profession, a professional fire officer, a master instructor, and a mechanic who inspired trainees in the classroom, as well as on the training grounds where they became fire fighters in two weeks.

Ross started as a volunteer fire fighter in Gering, Nebraska, in 1937. In July 1942, he became Assistant Fire Chief at Alliance Army Air Field, Nebraska, then served as the Fire Chief for Second Air Force at Deming, New Mexico, from March 1942 to March 1946. The next year he taught crash fire fighting for the 201st Army Air Corps under HQ Fifteenth Air Force. From 1947-1951, he worked as Fire

Prevention Engineer, HQ SAC, Omaha, Nebraska. His final assignment was as Fire Prevention Engineer, GS-12, HQ ADC. He retired after a 24-year career with the federal government, November 17, 1965

Stacked letters of commendation made his performance believable. On November 14, 1944, General Crawford, Army Service Forces, wrote, “The untiring efforts of Chief Stephens and the unusual skill he displayed in instructing the trainees resulted in the course being a decided success.”

Chief Stephens and other fire department instructors conducted the Fifteenth Air Force Fire School at Davis-Monthan AFB, Tucson, Arizona, February 11, 1947. For two weeks fire fighters used six burn pits and fought 318 fires in 84 hours.

When SAC faced an acute shortage of military fire fighters for its global mission, it picked Ross to train them. He developed the command’s fire tactics for aircraft fire fighting. He later set fire truck maintenance standards to improve in-commission rates. In 1947, SAC abolished most civilian fire fighter positions except fire officers and replaced them with trained military fire fighters.

After four years at ten crash fire fighting schools (Seventh Service Command, Second Air Force, Air Training Command, and Fifteenth Air Force), the Air Force recognized Ross for incredible achievement at home, in Europe, and in French Morocco.

Ross was also a master mechanic who kept the command fire truck fleet serviceable, according to Chief Bert Kwist and Chief Hurley Bryant, HQ SAC. On the first day of a Staff Assistance Visit, Ross entered the fire station with a toolbox. He wore coveralls, not the usual coat and tie attire for staff members. Not only did he tote tools, he taught fire fighters how to use them. To be sure, he committed himself to improved fire truck reliability. About Ross Stephens, Chief Otis E. Tinkle, Fort Worth Army Air Field, said, “His fingers were like pages in a book of mechanical knowledge.”

“Ross was the best in the business,” Chief Odell said.

Ross dedicated his life to quality training. For that reason alone, a classroom at the Louis F. Garland Fire Training Academy, Goodfellow AFB, San Angelo, Texas, should honor his name. He developed tactics that worked. Fire fighters listened to him. For over four decades, fire fighters used Stephens’ tactics without a single fire fighter fatality. Ross said, “Don’t tell trainees what to do—show them.”

A change of pace and hobby for Ross occurred on November 17, 1965. “Growing hybrid roses—Peace and Chrysler Imperial were his favorites,” Mrs. Aline Stephens said. He cared for roses like he cared for people. He passed away in 1978.

Pioneer, Chief Jasper W. Patterson. His renowned Texas faculty organized the second Army Air Corps Fire Fighting School at Buckley Field, then the Fire School at Lowry Army Air Field, Denver, Colorado. Neither DoD nor its predecessor, the War Department, conducted formal training before 1943. Chief “Pat” Patterson earned the distinction of being the first Dean of the Army and Air Force Fire Schools. Chief Patterson, Bill York, Odell Damerall, Golden Simmons, Glenn Mullins, Melton Speck, Marvin Roe, and Capps instructed students by example.

The instructors challenged students; they admired self-motivated students. The school graduated 40 students every eight weeks.

Of course, Chief Patterson demanded students conserve fire-extinguishing agents on training fires. The aircraft fuel capacities far exceeded fire truck water and foam application. He reminded students not to let their fire-extinguishing agent commit suicide.

ATC formally trained Air Force fire fighters. At times, the fire school couldn't satisfy demand, so select air bases organized temporary schools and trained a flood of trainees.

Chief Patterson's career started in San Antonio, Texas in 1929. Three years later, he organized the city fire and police civil service board. He served as chief clerk from 1933 to 1937. While he was a San Antonio fire fighter, Texas A&M College asked him to teach a short course in firemanship. In 1939, he updated the Fire Prevention Bureau and Fire Academy for captains and battalion chiefs in the San Antonio, Texas Fire Department. In 1940, the War Department appointed him as an instructor and coordinator. He taught fire tactics to War Department employees at Duncan Field, the San Antonio Air Depot, the General Quartermaster Depot, and Fort Sam Houston, San Antonio, Texas.



Fire Chief Jasper W. Patterson, Principal Instructor,
Lowry Air Force Base, Denver, Colorado, Fire School

Later, as Fire Chief at Sheppard Field, Wichita Falls, Texas, he taught an accelerated course for fire chiefs sponsored by the Army Corps of Engineers to prepare them for assignments to Army Air Corps bases. In 1943, he developed an Aircraft Crash Fire Fighting and Emergency Rescue Course for all Eighth Service Command, Dallas, Texas, and Majors Army Air Field, Greenville, Texas. Among the instructors were Chief Otis E. Tinkle and Chief G. W. Fulbright. That same year, HQ Air Proving Grounds sent him to Eglin AFB, Florida, to test fire-extinguishing agents for aircraft crash rescue and fire fighting equipment. The Army Corps of Engineers project number was 3-46-26.

For his role in establishing the first and second Air Force fire training schools, Chief Patterson should also have a classroom named in his honor at the Lou Garland Fire Training Academy, San Angelo, Texas. Texans should honor their own!

Pioneer, Fire Chief Frank Joseph VI – A Great Family of Fire Fighters, as written by Iris Joseph McWhirter and Retired Fire Chief Lloyd W. Garner. Chief Joseph came from a long line of fire fighters dating from the Revolutionary War. Chief Joseph was the sixth Frank Joseph. Among the generations were one Chief of Department, one Battalion Chief, one captain, four lieutenants, and six fire fighters.

Frank Joseph I, his wife, and seven children arrived in New York City from England in 1770. They migrated to the wilds of Staten Island. When British troops landed on Staten Island for training during the Revolutionary War, he moved the family to New York City. He then settled on the Upper West Side of the city and was elected to membership in the Volunteer Fire Service. In 1806, Fire Lieutenant Frank Joseph I led his company amid crackling walls and became the first New York City fire fighter to lose his life in the line of duty at a fire on Broadway at Maiden Lane.



Fire Chief Frank Joseph VI, MacDill AFB, Florida, the pioneer who developed the first Air Force aircraft crash rescue truck.

War with England was declared on June 18, 1812. When the *USS Constitution* crippled the *Guarrier*, several New York fire fighters manned her guns. One of them was Frank Joseph II.

In March 1846, Mexican troops crossed the Rio Grande, leading to Declaration of War. President James A. Polk called for volunteers. Some 300 men enlisted with the New York Volunteers, among them Fireman Frank Joseph III.

When the Civil War erupted in 1861, among the 2,000 enlisted stood Frank Joseph III. Every fire house recruited people. All of the men and officers from the Eleventh New York Volunteers were fire fighters. No class of citizens responded more readily to President Lincoln's call for volunteers at the outbreak of the Civil War than the fire fighters. The Federal Army mustered them into service.

In 1862, the Secretary of War requested the Mayor of New York City to send a fire chief to Fort Monroe, Virginia, to organize a military fire department. As a result of this request, replacements from the New York Fire Department filled the ranks under Chief Raulch. He followed the advancing

troops and took charge of all fire fighting apparatus in southern communities occupied by federal troops. Young Frank Joseph IV marched away with this group.

After Appomattox, the band of fire fighters was reduced to less than 200 men. They were given their Honorable Discharges and returned to the Big City. Jake Langwasser was the sole survivor of his regiment, and he later became Chief Joseph's grandfather. In 1885, the New York Fire Brigade was organized as a Paid Fire Department. Jake Langwasser was appointed and assigned to Engine 17 on the lower East Side. He retired in 1890 and died at the family home on Staten Island in 1896. Frank Joseph V was the father of Chief Joseph. As a fire fighter, he was responding to a fire when his company became covered with ice. They returned to the firehouse. After the company returned to service, he walked out of the firehouse to return home when a second alarm sounded. He turned around, and as he started to walk back into the firehouse an apparatus came out of the door. He slipped on the ice, and the apparatus rolled over his chest, placing him out of duty for fire service. He died in 1907. He was married to Catherine Langwasser.

On November 1, 1913, the New York Fire Department appointed Frank Joseph VI. He served on every piece of apparatus, including the fireboats and rescue company. In 1931, however, he was severely injured on a bitter-cold night during a third alarm fire in a plaster mill. He fell through bales of excelsior and landed across a railroad track on the bottom floor of the building. When he arrived in the hospital emergency room, doctors thought he was mortally injured with five fractures of the spine, a fractured skull, two fractured ribs, and both bones shattered in his left arm. The Medical Board of the New York Fire Department told him he would be bedridden. To prove their case, two of the Board Members came to his home and explained to him how lucky he was just to be alive. They gave up, but Chief Joseph didn't! He designed a brace that the Uniformed Firemen's Association bought him and started on his own

to get better. He figured the only way he could get better was by swimming. The cold New York winters pained him, so he moved to St. Petersburg, Florida, where he swam every day. He did just that for two and one-half years. He succeeded and recovered so well that he returned to New York City and faced the Medical Board with his X-rays. They were completely and utterly amazed at his remarkable recovery.

In and around New York City and Staten Island, Chief Joseph had earlier played professional football, boxed professionally, and coached athletics at Port Richmond High School on Staten Island. Every student on his football squad received football scholarships, including Bill Shakespeare, an All-American at Notre Dame. Now, in St. Petersburg, he returned to athletics. In 1935, he signed a five-year contract with Florida Military Academy as Director of Athletics. During those five years, his teams in all sports were consistently successful. In track, they finished fourth in a field of 64 schools in the state track meet. In baseball, they were undefeated. In boxing, they won 15 Golden Glove championships and three AAU team championships. During that five-year span, in 11 sports, he never had a student miss a game because of injury.

On March 1, 1937, for the first time in the history of the New York Fire Department, three brothers, the sons of Charles Joseph (Chief Joseph's brother who was a sergeant in the New York City Police Department), were appointed the same day - Frank Joseph VII, Harold Joseph, and Edward Joseph. Chief Joseph's sister, Lillian Nugent, had one son in the Fire Department, Lieutenant Joseph Nugent, and her two daughters were married to fire lieutenants.

In 1940, President Franklin Delano Roosevelt's Secretary of Defense called Frank Joseph to fire duty in the Army Air Corps and asked him to organize all the military fire departments from Waycross, Georgia, to Avon Park, Florida. He established his headquarters at Drew Field in Tampa; it was there that he pioneered and blazed a trail in fire fighting in the Army Air Corps and later in the U.S. Air Force.

Chief Joseph was President of the Retired Firemen's and Police Association, and it was from that organization he hired retirees from all over the United States to man the fire apparatus and serve their country again. The senior fire fighters responded, and Chief Joseph achieved what seemed overwhelming success against almost impossible odds.

Chief Joseph convinced his base commander that the base needed a fast truck specifically equipped with a skilled rescue crew. The base unveiled the first Engine 10, Rescue Company, on June 2, 1942. Rescue 10 quickly gained popularity at Drew Field and in the Tampa Bay area. Chief Joseph's resolve, despite frustration and red tape, produced the first rescue truck in the United States Air Force. A high-performance V-8 engine powered the half-ton rescue truck. The truck bed had two folding seats. Special hangers cradled two folding ladders on the side of the truck. The "crash box" had the latest forcible entry tools, lights, first aid kits, and ropes. Rescue 10 had four 50-pound carbon dioxide (CO²) cylinders rack mounted in the truck bed. A manifold connected them to a reel and CO² hose and nozzle. Additionally, the tailboard had portable fire extinguishers. Four rescuemen rode the truck. The little red rescue truck appealed to fire fighters. Fire fighters competed to earn a seat on that elite four-man crew. Both written examination and demonstrated performance qualified fire fighters.

Lloyd W. Garner joined the MacDill AFB fire department in 1947. He had never been on a fire truck. And, of course, he was uneasy being cross-trained from being a U. S. Army Infantry soldier to being a fire fighter. He reported to Chief Joseph. "Come in and sit down!" Chief Joseph said. Chief Joseph explained department policy and goals and then placed Lloyd on "Probation." Lloyd's fire assignment was as a hydrant man on a 750-gpm Mack Pumper. Every department position had to be mastered before fire fighters advanced. Chief Joseph was always there, instructing and demonstrating the fundamentals of fire fighting and rescue.

Finally, Lloyd qualified for one of the Engine 10 rescue positions. He couldn't believe a "jump seat" belonged to him. Later, Lloyd became crew chief of Rescue 10. When any situation threatened life or property, Rescue 10 responded. On many 24-hour shifts, the Rescue 10 crew never turned back the neat bed covers. Then, too, fire fighters missing regular meals and brown-bagging became routine.

Rescue 10 was the prototype of the Air Force R-2 Rescue Truck. It was one of several notable achievements by Chief Joseph. Aside from opposition at first, his concept set the example for the Air Force to accept and expand upon.

Chief Lloyd Garner met and worked with fire chiefs worldwide, including military, civilians, and industry. Among all of them were some of the most impressive and dedicated professionals he ever knew, and they all deserve a salute. But Chief Frank Joseph VI was his favorite, his role model, and above all his friend. Anyone can have a dream, but the idealist will fulfill that dream.

A young lady named Iris went to work for Chief Joseph in 1943. The Base Engineer told Iris the fire chief needed a secretary, so she applied and was hired. She had just lost her husband in a plane crash as an aviation cadet in basic training. Her daughter Becky was three weeks old. Her parents very graciously agreed to take care of both of them during those difficult times. She needed to get on with her life, and there was no better way than to go to work.

Fire Chief Frank Joseph was a totally committed Fire Chief who dedicated his entire being to protecting his fellow man and property from fire. Chief Joseph impressed Iris with his professionalism and great charisma. He was a secure man. His every move demonstrated security. He was of tall stature and had beautiful blue eyes! One would never guess that he had been told he would never walk again earlier in his life. He was impressive in body and soul. He commanded attention and deserved it. Working for him gave Iris inspiration and the desire to do her best and carry on with her life. His interest and concern for Iris's situation helped her overcome many problems. Working for him was a challenge, in that nothing but the best would be tolerated. Many times Iris remarked to herself how very well-kept he always looked. He had a very loving and caring wife. Iris had been working for Chief Joseph only a few years when adversity struck him. His wife died from a tumor on the spine. She was sick for only a few weeks. It was a very difficult time for him, but he had a wonderful daughter, Eleanor Gruss, and son, William Joseph, to share his sorrow and great loss. Iris, too, felt his pain and realized that she might return some of the empathy and courage to carry on that he had shared with her.

His job was very demanding, too. Drew Field was a transitional base, where air cadets fresh out of flight schools were trained to navigate and fly P-38s, P-39s, P-40s, P-51s, B-17s, and B-29s, to mention a few. The available fire fighting apparatus and equipment were scarce and woefully outdated and couldn't support the demanding needs of a forced, accelerated fire training schedule. Nevertheless, pilots and crews in trouble heard many times on the emergency radio, "If at all possible, get to Chief Joseph's Fire Department at Drew Field. They'll get you out alive!" Much of this proud reputation was earned by the first-class fire fighters who were superbly trained to man Chief Joseph's own invention and creation, "Rescue Company 10." This unauthorized, often criticized, but outstanding and necessary piece of fire equipment born on Drew Field in the early 1940s would later become standard equipment at all fire departments throughout the Air Force. But for the time being, Chief Joseph's Rescue 10 continued to perform highly successful rescues. On March 18, 1948, four fire fighters were awarded the Soldier's Medal for removing an entrapped crew from a B-29 bomber that crashed off the runway at MacDill AFB. That simply added to the many citations and awards that fire fighters assigned to the little "home-made rescue truck" and its personnel received. It's well noted that during Chief Joseph's tenure, both at Drew and MacDill, he never lost a pilot from fire.

World War II ended, and Chief Joseph transferred from Drew Field to MacDill. Drew later became Tampa International Airport. Iris didn't go to MacDill. By this time, she was very much in love with her boss and he with her. Even though he was 56 years of age and Iris was 26, the years between them made their relationship more enduring. In 1947, on their way to visit relatives on Staten Island, they were married in Savannah, Georgia. They later purchased a home in St. Petersburg, Florida, and settled down to enjoy life. To make their family complete, Frank adopted Iris' little girl, Becky. After seven years of marriage, they



Fire Chief Frank Joseph VI, leading his fire fighters on parade, MacDill AFB, Tampa, Florida, 1948. Everyone in step! The author has no knowledge of any other Air Force fire chief ever leading fire fighters in a parade. (Photo courtesy of Iris Joseph McWhirter)

had a bouncing baby boy and named him Frank Joseph. What else? He was number VIII. Frank received his AS Degree in Emergency Medical Technology and was appointed to the Pinellas Park Fire Department in 1978. That made his mother feel good. After many years of service Frank Joseph VIII died of a heart attack while on duty 1998. His untimely death shocked and saddened everyone.

Chief Joseph died of a heart attack April 5, 1966. No matter where he lived, he served his community well. He had a passive contempt for heroics, because he thought his duty was to perform to the best of his knowledge and dexterity no matter what the situation required. He experienced his inner satisfaction from believing and living that belief.

This is a memorial to a great family of fire fighters, one of whom Iris married and bore a son. Living with "The Legend" enriched their lives. Chief Joseph, throughout their marriage, gave love, security, and respect and always allowed Iris to "just be herself." Iris was always there for him, and he knew that.

A fire fighter's job is always fraught with great danger. Chief Joseph believed that fire fighters are fire fighters, and the reader of this book can substitute the names of any City, Town, Village, or Air Base. The basic facts are the same. Fire fighting, with the preservation of life and property as its primary purpose, is a scientific pursuit, and an efficient fire fighting force takes its place alongside other professional forces in importance.

Pioneer, Chief Robert Vreeland. Bob started as a volunteer fire fighter with the New Jersey Forest Service while a high school student in Dover, New Jersey, in 1930. While on call, he received 50 cents an hour. The Vreeland family spanned four generations in the fire service. His great grandfather, a selectman, bought the first hand pumper in 1844. His grandfather, Jacob J. Vreeland, Sr., organized the



*Fire Chief Bob Vreeland,
MacDill AFB, Florida*

first Volunteer Fire Department in Dover, N.J., and his father Jacob J. Vreeland, Jr. was an officer who helped purchase the first steamer in 1874. In 1936, Bob became Section Chief of Section 5, covering 80 percent of Morris County, N. J., having 13 district wardens, Picatinny Arsenal, and the U. S. Navy Ammunition Depot at Dover, N. J.

Bob's military service began in 1941. He married E. Barbara Pierson, of Newark, N. J., on June 29, 1941. They honeymooned in Cuba. In September 1941, seven weeks after basic training at Ft. Belvoir, Virginia, he shipped to Schofield Barracks, Hawaii, and became a fire fighter. He watched with horror the Japanese sneak attack on Pearl Harbor on December 7, 1941.

Eight months later, he was directing a fire crew when 13,000 land mines exploded. The commendation by Lieutenant General Delos C. Emmons, Commander, Hawaiian Department, Fort Shafter, T. H., read: "Such performance of duty is the result of a well-trained and well-organized unit. The fire department

promptly extinguished the fire and saved valuable government property."

Major Wesley C. Wilson, Infantry, Assistant Fire Marshal, Schofield Barracks, promoted Bob to sergeant, then to staff sergeant, in eleven months. Upon his recommendation Bob entered Officers' Candidate School and graduated as a second lieutenant at Fort Benning, Georgia, December 18, 1942. While on maneuvers with Company C, 318th Infantry Battalion, 80th Division, Camp Forest, Tennessee, he was injured and hospitalized for three months at Kennedy General Hospital, Memphis, Tennessee.

He then trained and commanded the 2067th Engineer Aviation Fire Fighting Platoon at Camp Pontchartrain, Louisiana. He boarded a troop ship and sailed to England, November 20, 1943, and was attached to the 42nd Depot Group and 2067th Engineer Aviation Fire Fighting Platoon at Bath, England. His unit quickly relocated to Airfield Kingston Bagpuize, Oxford, England, December 10, 1943. He landed with a new unit designation, the 2010th Engineer Aviation Fire Fighting Platoon at Normandy, France, D+6. And he set up the first forward base near Cherbourg, France. Bob arrived at Airfield A-93, Liege, Belgium, October 29, 1944. By November 22, 1944, over 100 German Buzz bombs had struck Liege and had caused 340 fires in over two months. One buzz bomb destroyed the 15th General Hospital. Debris covered patients as fire fighters frantically controlled the fires and cared for the wounded.



Chief Vreeland

Bob and six fire fighters received the Soldier's Medal for heroism in Belgium, December 31, 1944, after the Germans attacked fully loaded ammunition rail cars. Vital to the war effort, fire fighters saved the ammunition. Another attack by Germans destroyed the fire station and fire trucks. Five days later, replacement fire trucks arrived. Bob reached Airfield R-4, Detmold, Germany, May 12, 1945, and then Airfield R-45, Ansbach, Germany, June 24, 1945. After Victory in Europe (V-E Day), U. S. Army Captain Bob Vreeland came home by boat and was honorably discharged in March 1946.

That same month, Bob and his wife Barbara bought their first home at 58 Academy Street, Dover, N.J. Once again, he returned to the New Jersey Forest Service as Chief Section 5, Division A, and resumed working in the real estate and insurance business. He continued membership in the Dover Volunteer Fire Department and Rescue. On March 24, 1946, the rescue squad answered a call for a boy who had fallen and was trapped in a 40-foot well. In a harness, Bob was lowered to the dark muddy bottom. He placed his harness on the boy, who was raised from the well shaken, but unhurt. The harness was then lowered to Bob for his exit.

Then in August 1946, an unexpected telegram arrived. "Be in San Francisco for shipment to Alaska." Shocked and in disbelief, Bob packed, donned his captain's uniform, and commanded the 537th Engineer Service Battalion with 360 troops at Ladd AFB, Fairbanks, Alaska. He also directed a huge camp for 600 civilians, both men and women. As the Ladd Fire Marshal, he represented the Yukon Section Command with bases at Nenana Radar Station, 26 Mile Air Base (Eielson AFB), Big Delta, Northway, Tamacross, Galena, Point Barrow Radar Station, Barter Island Radar Station, Skull Cliff Radar Station, and Nome Air Base.

At that time, he teamed up with W. R. Smith from Wright-Patterson AFB, Ohio, on project "Task Force Frigid." They tested fire vehicles and developed Arctic fire fighting tactics.

When Bob left Alaska, Brig General D. V. Gaffney, Commander, Ladd AFB wrote: "He is always on the job, efficient, aggressive, and dependable to a marked degree. Where others have let obstacles hamper their performance, he has invariably found an immediate solution."

The *Fairbanks Daily News-Miner*, June 11, 1949 published: "In one instance, he participated in fighting a city fire, extended to subjecting himself to personal peril by entering a burning structure to rescue a man trapped there."

On June 7, 1949, Bob transferred to HQ Strategic Air Command, Omaha, Nebraska. As an Air Force Captain and Chief of Fire Protection, he oversaw 66 base fire departments in the United States, England, Spain, Morocco, and Guam with sub-commands (Second Air Force, Barksdale AFB, Shreveport, Louisiana; Eighth Air Force, Carswell AFB, Ft. Worth, Texas; and Fifteenth Air Force, March AFB, Riverside, California). Jasper Gilkison, Bert Kwist, and Ross Stephens served on Bob's staff. Hurley Bryant, Justin Patrick, Joe Clancy, and Major Vandenboom also served during Bob's tenure at SAC. The fire protection staff developed desperately needed command regulations, pamphlets, and supplements to Air Force Regulations; incorporated fire engineering standards; updated training; conducted fire investigations; recommended manpower changes; standardized fire equipment; and inspected base fire departments.

On August 5, 1950, a B-29 crashed on takeoff at Fairfield Suisun, California. The Super Fortress carried the "Fat Boy" atomic bomb, similar to the one dropped on Nagasaki, Japan. The explosion caused 19 fatalities, including seven fire fighters. Bob had persisted earlier to develop fire fighting tactics before a tragic B-29 crash, but atomic bomb "classification" delayed published guidance for fire fighters.

Captain Robert W. Vreeland retired January 26, 1951. Three days later, he was back as Mr. Bob Vreeland, head of SAC Fire Protection. Between 1949 and July 1956, the command placed enormous stress on fire fighters. The unprecedented buildup of bombers and refueling tankers dispersed worldwide tested performance beyond expectation, like the limb that couldn't bear up under the stress of heavy snow.

Because of health concerns, Bob transferred to MacDill AFB, Tampa, Florida, July 10, 1956. He became fire chief one year later when Chief Frank Joseph retired. Five years later, Bob transferred to HQ

Fifteenth Air Force, Riverside, California. There he worked with CMSgt Walt Howland and CMSgt Lloyd W. Garner. After 30 years of combined military and civilian fire service, he retired on June 30, 1972.

Chief Lloyd Garner wrote to Albert, son of Bob and Barbara Vreeland on their 50th Wedding Anniversary, June 18, 1991. "I do have something to say to reflect our love and respect for your Mom and Dad. Your Dad brought order and administration to the Strategic Air Command fire service. I first met him at MacDill AFB, Tampa, Florida. At that time, he was a captain at HQ SAC. He was the first one who really knew what an Air Force Fire Department was supposed to do. Many of the command fire chiefs opposed him from all quarters. He saw beyond this opposition. But, he remained steadfast. Once he established himself at MacDill, all of us finally realized that he was real, knew what he was doing, and knew how to get us operationally ready. We became a professional department.

"He was one of the pioneers who blazed the trail for Air Force Fire Protection. Later, he came to MacDill as a civilian fire chief. He came to our home in Tampa late in the afternoon. He had driven a little Nash from Omaha to Tampa. It was a very small car and had the appearance of a car crushed between two 18-wheelers. The kidding he received from that little compact was nothing less than humorous. Once the base fire chief, many fire fighters thought the department would never be the same, our image tarnished. Not so! He carefully evaluated the department and managed it in a professional manner, just like Chief Joseph had previously done. Bob was always tough, but fair. He knew the mission and supported it with a positive can-do attitude. Your mother always supported him and played the role of mother and dad when Bob was on the road or extended duty at the fire station."

According to Chief Garner, Bob was Mr. Fire Protection at HQ Fifteenth Air Force. Chief Garner felt privileged and honored to have worked for Bob as his deputy. Fifteenth Air Force had the best command fire protection program any proud commander could embrace. These retired Chief and Senior Master Sergeants served with Bob: Hank Patrick, Herman Trent, John C. Chatham, Hampton Cayson, and Ralph Ross. "They accomplished equally as much as civilians in the Command," Bob said.

In short, Bob Vreeland started as a volunteer fire fighter in 1930 and retired three decades later. He continued outstanding volunteer service with the American Red Cross, Riverside, California, and as a Service Officer for the Veterans of Foreign Wars (VFW) 65 years later. In other words, he's legendary to fire protection, the American Red Cross, and American veterans. This is a man who made a noble effort and succeeded in improving Air Force Fire Protection at every level. He served with honor and distinction at air base as well as MAJCOM headquarters.

Pioneer, MSgt Joseph Gerrity. An *Air Force Times* article from Korea in 1951, entitled "Sabre Base Fire Chief is Old Timer," paid tribute to TSgt Joseph Gerrity. "The Fire Chief of the 4th Fighter Interceptor Wing Base Fire Department and crash rescue crew is probably the most experienced 'fire eater' in the U.S. Air Force. He entered the fire fighting business back in 1915. The grizzled 52-year-old veteran, holder of three medals for heroism, has used everything from horse-drawn water wagons to 85-foot aerial extension ladders. At Sabre-jet Base in Korea, he goes out on every call with 'his boys,' whether the emergency is actual or only pending. During a recent month, the fire and crash crew responded to more than 260 calls, many of them from F-86 pilots returning from air-to-air combat with Russian-made MIGs."



MSgt Joseph Gerrity

Chief Fred Elkins had the privilege of working with Joe Gerrity twice, once during the 1949 Berlin Airlift and again at Myrtle Beach AFB, South Carolina. By then, Joe was a master sergeant. Also at Myrtle Beach was Warrant Officer Lou Garland as Deputy Fire Marshal.

Thule Air Base Greenland was Joe's last assignment. Reportedly, he lost one of his legs and passed on in the 1960s. In a way, it's sad that one of the oldest pioneers can't have more written about his career in fire protection. Perhaps readers will recall this pioneer and reflect on more history deserving this fire fighter. "A moving story of a man of representation and courage," Chief Fred Elkins said.

Pioneer, Chief Robert M. Malin. Chief Malin often reminisces, so the past is very clear to him, especially concerning what could have been. He pondered where we would have been had some colleagues been more astute and aggressive in the management of program elements.

Chief Malin's fire protection career started in 1946 at Tachikawa Air Base, Japan. All rated officers accepted ground jobs so base activities could function. He was given the added Military Occupational Specialty (MOS) of 9401, Unit Fire Fighting Commander, most likely because he was on the high school swimming team for four years and a lifeguard during the summer. He returned to the United States and continued his career involving flying and some ground jobs. In 1952, he transferred to Erding, Germany. His ground job was Air Force Specialty Code (AFSC) 5524, Deputy Fire Marshal.

In 1954, he left active duty and became a DAF (Department of the Air Force) civilian. He kept an "M" Day assignment, enabling him to fly as well. He had the best of both worlds. He was assigned to HQ SAC, Offutt AFB, Omaha, Nebraska, and then to HQ Military Airlift Command (MAC), Scott AFB, Illinois, where he presided until his retirement in 1982. This totaled 27 years at different major air commands, making it a record of sorts, but he's sure he learned the nuances of networking.

Bob reached one notable objective while in Europe. The United States Congress gave special authority to purchase German fire apparatus under the "Off Shore Procurement Program." The German 78-foot ladder truck, TLF-15 pumper, and Metz crash truck were superior to the American-made Class 155 crash truck.

"I consider myself lucky to have attended many meetings with Bob Malin and considered him a good friend. In conference, nothing slipped by him or fell through the crack. He was a true innovator and expressed himself both verbally and with pen and paper. Air Force Fire Protection owes him a debt of gratitude for the things he accomplished," Chief Ben Partin said.

Pioneer, Golden "Goldie" Simmons. Goldie, or "GW" as his friends knew him, was born in 1911. He began his fire fighting career with the Fire Department for the City of Wichita Falls, Texas. In 1941, he started work at the Sheppard Field Fire Department in Wichita Falls, where he trained under Chief Jasper W. Patterson.

By 1944, he had completed fire training at Buckley Field, Denver, Colorado. The instructors were military as well as civilian, with Chief Patterson as principal instructor. In 1946, the Buckley Fire School moved a few miles to Lowry Army Air Field outside Denver, Colorado, and became the Army Air Forces Crash Fire Fighting and Rescue School. In addition to being an instructor, Goldie published training manuals for Air Force fire departments. In 1947, he saved four students in a training fire and was himself badly burned.



Major General Robert Warren and Fire Chief Golden Simmons pinning badges on a Junior Fire Fighter

command inspector. Despite a reduction in grade, he accepted the job so he could work with Paul Odell and Hurley Bryant. Goldie inspected all early warning radar sites and bases from Bangor, Maine, and Homestead, Florida, on the East Coast to Laredo, Texas, and Blaine, Washington.

Goldie retired in 1973 after 31 years of federal service. After retirement he stayed active in community affairs. He organized the Cragmore Volunteer Fire Department, was chairman of Cragmore's neighborhood association, and served as deacon of the Air Force Academy Baptist Church, as well as a member of the Colorado Springs Planning Committee. He passed away in 1991.

This chapter closes by pointing out these pioneers' ultimate success stories, achieving beyond expectation their vision of crash fire truck design to rescue flight crews and protect aircraft. In short, they advanced technology despite meager resources and a modicum of support.

As Chief J. K. Schmidt once said, "The historical sketch of early fire pioneers and motorized fire equipment may sound strange to some and be understood by a few. I've seen it all! I feel proud. I was at the beginning of it all. I surely hope readers will enjoy and appreciate this great and honored profession."

When Chief Patterson transferred to HQ Air Training Command, San Antonio, Texas, Goldie became the principal instructor at the Lowry Fire School for the next twelve years. He then accepted the Fire Prevention Engineer position at the Air Force Academy, Colorado Springs, Colorado. There he planned and directed the Academy fire department, acquired fire trucks, monitored fire station construction, and interviewed and hired fire fighters. In short, he organized the Academy's first fire department.

While at the Academy, he acquired a classic 1928 REO Speed Wagon Fire Truck and organized a Junior Fire Department of young boys of military families who lived at the Academy. Upon completing their training, they received badges and white helmets.

In 1965, Goldie transferred to Robins AFB, Georgia, and managed fire protection for Continental Air Command. He inspected twelve command bases and took a personal interest in every fire chief and fire fighter.

In 1971, Chief Paul Odell at HQ ADC, Colorado Springs, Colorado, hired Goldie as

CHAPTER 3

OPERATIONS

It should be noted that today, as then, U. S. Government property, valued in the billions of dollars, is uninsured. The Air Force Fire Department is the insurance company.

In the beginning, Army Air Corps fire protection pioneers developed simple procedures for military and civilian fire departments, imparting their knowledge and sharing their experiences to advance a weak and desperate profession in need of direction. By 1944, pioneers defined fire vehicles and operational procedures. All military fire fighters owe a huge debt of gratitude to these pioneers.

President Harry S. Truman, who integrated the Armed Forces, put an end to the status quo. “Integration granted equal opportunity for both black and white in the fire service,” Chief Art Hill said.

All races defended America in the Second World War. After the war, stateside fire departments added their first black fire fighters. The desegregation order came when both military and civilian fire chiefs were unprepared to face a major psychological change in their departments. The adjustment tested their leadership ability. It was not without adversity at first, but they grew from the experience. They had to figure it out for themselves, how to treat one another as equal and fair. “Color has many shades of artistry,” as one fire fighter put it.

Preceding desegregation, the north and south issue prevailed in the military. What made the South the South and Southerners, Southerners? What made the North the North and Northerners, Northerners? In time, it became less of an issue, for fire fighters decided to improve personal relationships. It was the moral thing to do. Fire fighters faced up to their responsibilities. After all, fire fighters spent half their lives in the fire station. Over the years, a cadre of memoirists used their pens to illustrate the moral dimensions of North and South and desegregation.

In two decades, minority fire fighters became Air Force military and civilian fire chiefs at key Air Force bases: Chief Arthur Hill, Vandenberg AFB, CA; Chief Willie Bell, Edwards AFB, CA; Chief Willie B. Bell, Pope AFB, NC; Chief Haskell Jenkins, Westover AFB, MA; Chief Daughtry, Beale AFB CA; and Chief Larry Taylor, Kelly AFB TX. All were recognized for honorable and faithful federal service.

Then, a few females entered the Air Force fire service. They too caused fire department leadership to adjust to special needs and accommodation. While the minority fire fighters prospered, the female fire fighters faced attrition.

When asked, “How many blacks do you have?” None.

“How many whites do you have?” None.

“How many females in your department?” Not any.

“All are just fire fighters,” I replied.

The Profession of a Fire Fighter. People chose fire fighting without regret. It became a lifetime commitment to one profession. Of course, they worked and worried, but they were never bored; they erred along their journey, but tried not to make the same mistake twice. They protected life and property

the best way they knew how. They learned self-discipline as young fire fighters and became self-confident as they observed others, more competent in the profession. They coat-tailed smart people; they didn't rely too heavily on self-rugged individualism. They did not surround themselves with people who did not have a dream. They were the achievers.

An example was Chief Bert Kwist, who dressed casually at work, eyeglasses propped on his forehead like a college professor as he coordinated staff papers at HQ SAC. Bert had noted perception and expression. In short, he had wit.

To work with Bert was enjoyable. What an unforgettable learning experience for anyone who shared the office, whether at HQ SAC, at 7th Air Division in the United Kingdom, HQ Fifteenth Air Force at March AFB, California, or HQ USAFE in Germany.

The military and civilian dress code at HQ SAC was to wear a coat outside the office. One day, Bert wore a bright sweater. His trench coat sagged on the coat rack. Colonel Bruce Moore, Director of Maintenance, buzzed Bert to his office and confronted him about the dress code. At once, Bert returned to his office, donned his trench coat, collar turned up like Inspector Colombo and returned to Colonel Moore's office. Bert had wit. Colonel Moore had no sense of humor.

Supporting the B-29 Mission at Wendover Field, Utah. In early 1947, Fort Worth Army Air Field fire fighters boarded a C-47 destined for desolate Wendover Field, Utah, where they were to support the B-29 mission. Other military fire fighters from Davis-Monthan Army Air Field, Tucson, Arizona, arrived earlier, and they split two 24-hour shifts. The fire fighters from Arizona arrived first and occupied an abandoned World War II photo laboratory. The Fort Worth fire fighters lived in the aircraft hangar, with metal cots and a few belongings among the crash trucks parked inside the hangar. The Wendover civilian fire fighters ignored the military fire fighters for the entire two weeks they were there.

The morning of the third day, a military fire fighter refused to get out of bed. With a rope tied to his cot and the other end tied to a jeep, he was towed across the hangar floor. The iron bed struck the rails for the hangar doors; it folded at one end as the jeep sped 200 yards down the flight line, where the startled fire fighter was abandoned in his shorts. That ended "sleep in."

The Fort Worth fire fighters included Floyd Metoxen, an Oklahoma Indian known for his no-nonsense attitude and toughness. The Texas fire fighters knew they had been wronged, so the Indian gave the Arizona fire fighters an ultimatum: Move out of the photo lab, or be thrown out! The barrel-chested Metoxen scared Arizona's best out of their suites.

The Wendover crash trucks didn't have mobile radios. To communicate, the control tower alerted crash crews by the runway, using red or green "biscuit gun" signals. The two-week B-29 mission ended without a single aircraft mishap.

The Life of a Military Fire Fighter, Alamogordo Army Air Field, New Mexico. Here, the big one blasted the night out of the sky. The first atomic bomb was tested at nearby White Sands. Besides Fire Chief Huff and Assistant Chief Ben Virden, the rest of the civilian fire fighters were Mexican Americans. One was a better barber than fire fighter. At that time, fire fighters made their own carbon dioxide by converting dry ice for the Class 150 Cardox crash truck. On-duty fire fighters patrolled nightly in a jeep and checked portable space heaters for flaming stacks. Space heaters accounted for most building fires.

Fire fighters also had other duties. They had kitchen police (KP) at the mess hall where everyone ate, including families. The base didn't have a cafeteria. Fire fighters drove kerosene trucks and delivered fuel to most base buildings having M-41 space heaters. Few World War II buildings had central

heating. On occasion, fire fighters drove the commissary tractor-trailer to Ft. Bliss, El Paso, Texas. Lastly, fire fighters stood guard duty while coyotes howled in the distance.

Eventually, military fire fighters had had enough. They complained to the Base Air Inspector. That was poor judgment and a terrible mistake. The word reached the squadron first sergeant who came to the fire station at all shift changes and ordered more work for off-duty fire fighters. Fire Chief Huff did nothing to improve the plight of his military fire fighters.

Three months later, Alamogordo Army Air Field transferred to Air Materiel Command. All military fire fighters, now unauthorized, transferred to SAC. Everyone rejoiced. They left White Sands, jackrabbits, P-39 Aero Cobra and P-63 King Cobra aircraft, life in tar-papered buildings, and all those obnoxious details. Adios.

The historic blast of the atomic bomb and a chimpanzee shot 118 miles atop a German V-2 rocket were profound historical events at Alamogordo. Ironically, the “chimp” parachuted safely to earth and didn’t eject or pull the ripcord. The ground technicians automatically pulled the ripcord for him.

Dow AFB, Bangor, Maine. Dow AFB closed after World War II but was reopened to support the SAC F-84G mission in 1952. Base buildings were mostly heated by coal-fire furnaces and fire trucks were World War II vintage. The base had an ADC mission flying the F-80, changed to the F-86 and finally to the F-94C. Northeast Airlines also had its airport terminal at Dow and shared the Air Force runways. Stories emerged from Dow, one of which was humiliating for one military fire fighter. The Bangor City Police arrested a 4’2” fire fighter and charged him for being a “Peeping Tom.” Two days later, the military supervisor brought a chair to the fire department shift change formation. “The next time, use a chair,” the supervisor said.

The Ever-Present Fire Fighter Manpower Dilemma. HQ Air Force determined fire department manning. They devised various equations to determine or confuse manning for structural and crash fire fighting vehicles. One thing for certain, whatever the manning, it was never 100 percent. Fire chiefs managed their departments with less than 90 percent manning most of the time. Fire chiefs had a greater portion of their military fire fighters in OJT. In comparison to stateside bases, overseas bases had almost 100 percent manning.

Manpower issues perplexed base fire chiefs, who raised the question of manpower shortages at their bases, informed their headquarters, and expressed their concerns at the annual Air Force Fire Protection Conferences. Having heard enough, the Air Force introduced the cross-manning concept. A fire crew responded and operated a structural pumper or a crash truck, depending on which emergency occurred first. Actually, that fire crew was responsible for two, not one, fire vehicles for operational checks and upkeep. The Air Force theory was that a structural fire and an aircraft fire were unlikely to occur at one time. That theory was later disproved.

At times fire fighter manpower increased overnight. When an airplane crashed and burned and lives were lost, other squadrons then supplied young airmen to become trained as fire fighters.

Project 100,000 was proposed in 1966 by then Secretary of Defense Robert McNamara to increase America's military manpower by lowering military mental and physical requirements thus decreasing the number of Draft rejects. Many lacked ability to be trained. After enough complaints reached General Curtis E. LeMay, the Air Force published two regulations, AFR 39-16 and 39-17, to deal with the problem. One directive addressed “unsuitable” and the other “undesirable” airmen. In short, a great many of these airmen couldn’t be trained. The decision was finally made to discharge unproductive airmen under honorable conditions. The method was simple—a letter from the supervisor, another letter

from the base chaplain, and a cover letter from the squadron commander. The 39-16 or 39-17 package proceeded to higher headquarters for approval or disapproval. The majority were approved, and airmen were honorably discharged from the Air Force.

At one air base two chairs faced the first sergeant's desk. One chair was labeled 39-16, the other 39-17. After the supervisor had counseled an unproductive airman until the situation was fruitless, the supervisor consulted the first sergeant with documentation, and in turn the squadron commander. Then, the troubled airman reported to the squadron first sergeant. "Young man you have two choices, but one seat." The Air Force quickly rid itself of undesirables, a credit to General LeMay and his subordinate commanders. Like the Ford Edsel, Project 100,00 also backfired on McNamara.

The Era of Warrant Officers in Air Force Fire Protection. The Air Force Warrant Officer program had a bright beginning, but it ended dismally after ten years.

The United States Congress approved warrant officers in the armed forces, but the Air Force, in its infinite wisdom, eliminated them in 1958. Candidates for warrant officer were expert in their work because they had earlier served as master sergeants in the fire protection career field.

The warrant officer had an unusual insignia, some gold bars and others silver bars with colored dots embedded to denote their grade. They were often mistaken for foreign service officers. Another oddity was that it was appropriate to call them Mister. A young airman once approached Warrant Officer Bob Barrow, unsure about saluting and didn't. The airman eased by, only to be called back. "Why didn't you salute?" Bob asked.

"My basic training instructor told me there were no more warrant officers in the Air Force," the airman replied. Here the old adage applied: When in doubt, salute.

Warrant officers had dual club privileges. They could have membership at the officers' club or the noncommissioned officers' club. "The NCO Club had the best parties," Chief Barrow said.

The warrant officer had options when using temporary on-base billeting. He could use officer or very important person (VIP) suites.

Before 1959, warrant officers were either crash rescue officers, assistant base fire marshals or fire protection engineers at higher headquarters. The introduction of senior master sergeants and chief master sergeants in fire protection ushered warrant officers into the mainstream officer corps, to positions occupied by lieutenants, captains, and majors, until the warrant officer rank was phased completely out of fire protection.

The warrant officer left a legacy in fire protection. CWO Lou Garland is such an example. He left a legacy of leadership at the Air Force Fire School at Chanute AFB, Rantoul, Illinois, from 1965 to 1975.

Warrant officers had the candid ability to cut through red tape by working harmoniously with civilians, other military, and contractors. When offered, Bob Barrow declined the rank of captain. If he had accepted, he would have been separated from fire protection. Bob spent his last eight years as Fire Research Project Officer at the Air Force Civil Engineering Laboratory, Tyndall AFB, Florida. He also served 14 years as Fire Chief at Eglin AFB, Florida, managing one of the largest fire departments in the Air Force. "I look back with absolute pride and a sense of accomplishment, not to mention hard work. As the last Air Force Warrant Officer, I salute them all," Chief Barrow said.

Val Allen Jr. made warrant officer in 1948 and was one of the first in fire protection. Joseph Akins, Carl Barker, Tony Bamer, Bob Barrow, "Catfish" Brown, Smokey Burgess, Glen Cloud, Claude J. Courtier, James Daley, James Dixon, Larry Dunn, Lou Garland, Carl Levins, Paul Postle, and Wallace Wilson were others well known in Air Force Fire Protection circles.

With the abolishment of warrant officers, Val Allen crossed-trained into the Officers' Club as the Club Officer, Bergstrom AFB, Austin, Texas. He retired January 7, 1972. Immediately upon retirement, Chief Leslie L. Heine hired Val as Deputy Fire Chief, GS-10, at Bergstrom.

Colonel Brayton, Texas A&M College, appointed Val, who taught the Aircraft Crash Rescue Training Course at College Station, Texas. Because of his dedicated 15 years to the university, he later received a Certificate of Excellent Service as an instructor at the Texas Firemen's Training School.

Val holds lifetime membership in the American Legion of the United States, Disabled American Veterans of the United States, and Veterans of Foreign Wars of the United States. For 17 years, he worked thousands of claims for veterans, their widows and dependents. In 1989, Val helped raise almost \$50,000.00 for the poor and oppressed widows and dependents of disabled veterans.

Of Chief Allen, Lieutenant General John Cannon said, "I desire to express my sincere appreciation for valuable efforts contributing to the success of the USAFE Fire Protection and Aircraft Rescue School at Fürstenfeldbruck Air Base, Germany, November 1948."

There is a great humanity in all of Val's work.

B-17 Flying Fortress Crash, Fort Worth Army Air Field, 1946. Unannounced, the bomber crashed at night on runway 17L. At first fire wasn't visible as crash trucks sped to the runway. As the fire trucks neared the aircraft, the driver of the Class 150 Cardox truck almost struck the pilot as he ran from the bomber. The rest of the bomber crew had escaped injury as the bomber laid on its belly. Fire fighters snuffed out an electrical fire in the bomb bay using carbon tetrachloride (CTC), causing two fire fighters to be overcome by CTC vapors.

Colonel John D. Ryan, HQ Eighth Air Force, appeared on the scene in minutes. "Did any one touch switches," he asked.

"No," Assistant Chief Walter Sherrill replied.

The landing gear switch was up and locked. Colonel Ryan thanked the fire fighters. A crash recovery crew raised the airplane, lowered the landing gear, and towed the damaged bomber to the parking apron.

F-100 Super Sabre Crash, RAF Mildenhall, England, September 1971. Captain Richard C. Ames veered out of control, hit the ground, careened off a farmhouse, plowed through a sugar beet field, penetrated the perimeter fence, and stopped on a 200,000-gallon underground fuel hydrant system. The pilot escaped the burning jet. For the first time, the Base Fire Chief, Clarence T. Flannagan, had a P-2 crash truck spray aqueous film forming foam (AFFF) and extinguished the fire in minutes.

The unexpected crash preempted a planned fire training demonstration for several British Fire Brigades using AFFF. "You Yanks really know how to put on a demonstration," a British fire officer remarked.

Colonel John D. McChung, Jr., Base Commander, later awarded the Air Force Commendation Medal to nine fire fighters.

C-141 Aeromedical Aircraft, Elmendorf AFB, Anchorage, Alaska. During the Vietnam War, at least two C-141s stopped at Elmendorf AFB between 0200 and 0400 on their way to the Lower 48. These medical aircraft transported in excess of 38 litter and ambulatory patients. The refueling stop meant the wounded were on U.S. soil again. The base fire department protected what most fire fighters called “mercy flights.” A P-2 crash truck crew accompanied each aircraft during ground operation and observed taxi and takeoff. The jets were refueled with litter patients on board, while the ambulatory patients stretched and relaxed at the base terminal.

On one occasion, a P-2 crew observed a fragmented tire on the right main gear of the C-141, radioed the control tower, and turned on flashing red lights and alerted the pilot. The aircraft stopped before taking the runway. “Most likely other tires would have blown on take-off roll,” the aircraft commander said. Quick action by the P-2 crew may have prevented a serious accident involving patients unable to get out or be rescued in time. The P-2 crew received the Air Force Commendation Medal.

At times an Elmendorf fire fighter complained about long fire truck standbys. When that happened, the fire chief took the complainer on board a C-141 to observe the most critically wounded.

The Alaska winters are harsh, and daylight hours shortened, which made flight line operations more hazardous. To ensure fire fighter crews were alert, they rested in the afternoons before early 0200-0400 standbys the next morning.

Routine B-47 Takeoff, Later Engine Explosion. Three hours after takeoff from Dyess AFB, Abilene, Texas, the crash alarm sounded. The #6 engine exploded at altitude, and the crew ejected in the panhandle of Texas. From Delhart, Texas, to Abilene was a great distance.

Followup information added to the confusion. It turned out that everyone had ejected except the co-pilot, Lieutenant Obenauf, who decided to return the disabled jet to Dyess after his ejection seat failed to activate. With the canopy and the navigator hatch gone, turbulent cold air blasted the pilot’s face. As the jet neared Abilene, the base sent a chase plane to help guide the jet to the runway. The chase plane flew alongside and coached Obenauf to the runway as light rain fell. Lieutenant Obenauf, almost blinded, landed the damaged aircraft. Fire fighters helped him out of the jet. He was declared an immediate hero. This incident marked the first time anyone had landed a B-47 from the back seat, with no canopy.

The next day, SAC Commander General Thomas S. Power decorated Lieutenant Obenauf at the base theater, which was filled to capacity. Both his eyes were bandaged at the award presentation.

F-105 Crash, Seymour Johnson AFB, North Carolina. Friday, October 27, 1961, heroic action by two fire fighters saved the life of an F-105 pilot when his jet crashed and burned. Captain Charles D. Hollingsworth escaped serious injury in the crash.

The pilot felt engine vibration, had control problems, observed low oil pressure, and declared an in-flight emergency. Three O-11A crash trucks, an R-2 rescue truck, an O-6 Cardox truck, Assistant Chief William T. O’Connor, and SSgt Marvin S. DeBerry responded and positioned parallel to the runway. During a hard landing on runway 26, the nose section and cockpit separated from the main part of the fuselage. The pieces rolled in balls of fire 4,000 feet down the runway. The burning nose and cockpit came to rest on the right side of the runway; the second section, on the left side of the runway. Two O-11As sprayed protein foam on the cockpit, while the third O-11A attacked the other burning piece of the jet. “I’m burned up! I’m burned up!” the pilot screamed. An HH-43B helicopter crew pulled the

stunned pilot from the cockpit. An ambulance quickly transported the pilot to the base hospital; the hospital released him the same day.

The Only F-104 Dead Stick Landing, Moron AB, Spain. The pilot of an F-104 declared an emergency when his jet engine flamed out at very high altitude and engine restart failed. Colonel Chuck Yeager was visiting Moron AB at the time and joined the fire chief on the flight line. “If he lands that jet, it will be the first successful dead stick landing,” Colonel Yeager said. With that alarming statement, the fire chief positioned an O-11A at touchdown and other crash trucks at the departure end of the runway. The jet fell out of the sky, smacked the runway at an incredible ground speed, blew all tires, snapped the wheel struts, penetrated the MAIA barrier webbing, and stopped inches short of the runway overrun. The damaged jet smoked, but there was no fire. Fire fighters and rescue men assisted the pilot out of the jet. Colonel Yeager congratulated the young Lieutenant. Lady Luck embraced the pilot that day.

P-2 Crash Truck Air Conditioner Adaptation. The second, third, and fourth generation crash trucks didn’t have air conditioners for fire fighter comfort. The idea was discussed with an independent trucker, Ray Buchanan, who knew of a compact air conditioner manufactured in Grand Prairie, Texas, that would fit between the driver and crew chief seats. The fire chief consulted an off-base expert, a mechanic at Edward’s Truck Repair Shop, Goldsboro, North Carolina. The P-2 crash trucks at Seymour Johnson were equipped with “air” for \$4,800.

An Air Force Suggestion was submitted, but TAC Headquarters approved it only for local adoption. The fire chief received a whopping \$25.00 for the idea. The concept had Air Force-wide application. Someone wrongly evaluated this one!

The Noncommissioned Officer in Charge (NCOIC). This military position, whether or not it was intended to exist in the organizational structure, represented a liaison between the civilian fire chief, the squadron commander, and the squadron first sergeant. The fire department organizational or functional chart didn’t have a place for the NCOIC. The senior noncommissioned officer was automatically the NCOIC. The fire department was the largest branch or section within the Civil Engineering Squadron. The NCOIC managed the welfare of all military fire fighters in the department. He monitored the OJT program and skill-level upgrades of military fire fighters. It wasn’t uncommon to have 60 percent military in training. He decided on reprimands and suggested disciplinary action when warranted. He recommended airmen for promotion and awards. At daily shift change, he disseminated vital information relevant to department operations.

The civilian fire chief, on the other hand, managed the department and supervised two or three subordinate civilians. At least that was the *modus operandi* in SAC. The NCOIC was responsible for the military fire fighters that made up a greater part of the manpower. The civilian fire chief had no role in the discipline of military fire fighters. The NCOIC managed all military fire fighter affairs.

Whenever disagreement occurred among civilian and military, the NCOIC played a discrete role in problem solving. In a way, the NCOIC was like the warrant officer caught betwixt. Everyone in the fire department, except the NCOIC, had a distinct title like fire chief, deputy fire chief, assistant fire chief, station chief, and crew chief.

At an overseas base, the NCOIC was the fire chief. When he returned to the United States, he reverted to NCOIC. In short, he qualified as fire chief overseas but not stateside. A few years later, senior master sergeants and chief master sergeants became fire chiefs in the United States for the first time.

Air Force Fire Fighters and the Atomic Bomb. The Manhattan Project started in April 1943. Two years and three months later, the bomb was tested at White Sands, New Mexico. General Nathan Twining signed field order #13 for the 509th Bomb Group, which prepared the B-29 unit for its sole mission to drop A-bombs on two Japanese cities. Twenty-two days later the *Enola Gay* dropped the bomb on Hiroshima, Japan, August 6, 1945. Three days later, the B-29 *Bock's Car* dropped another bomb on Nagasaki, Japan.

After the second World War, nuclear bomb production continued. SAC was designated as the command with the nuclear mission. Except for a very few fire chiefs, most fire departments in SAC didn't know what to expect if the bomb (designated "special weapon") became involved in fire or impacted. The B-29 was either pit or ramp loaded. During pit loading, the bomber gingerly taxied to the open pit, the ground crew chocked the wheels, and the engines were shut down. The Joyce hydraulic lift placed the special weapon into the bomb bay. During ramp loading, the bomber parked on the apron, with its nose jacked until the tailskid touched the pavement. At that point, one of two bomb bay doors was removed and the weapon was positioned under the open bay. The aircraft was refueled after weapon upload. A crash crew provided surveillance from landing to takeoff. For one fire chief these operational procedures were repeated but never routine.

A B-29 with special weapon on board crashed on takeoff in California, August 5, 1950. After the California crash, the Air Force conducted a series of nuclear weapon tests under fire conditions. For the first time, fire fighters had guidelines.

SAC crash fire fighting crews stood alert at all B-29, B-50, B-36, and C-124 special weapon uploads and downloads. Fire crews feared the bomb as much as the enemy. SAC wasn't the only command with nuclear weapons. Chief Paul Odell had concerns at HQ ADC. ADC had F-102 and F-106 interceptors with air-to-air rockets with a nuclear warhead. And early on, the C-124 Globemaster ferried special weapons from storage to forward bases.

Chief Bob Vreeland at HQ SAC was the first to publish SAC Pamphlet 92-2, after seven months in coordination. He informed conferees at a high-level Air Force Fire Fighting and Crash Rescue Conference at Lowry AFB, Colorado, October 19-23, 1953. Mr. Glifford Cook, HQ USAF, was chairman of the conference. All Air Force MAJCOMs attended. The minutes of that conference omitted the critical element fire fighters faced, the element of time in fighting nuclear weapon fires. "I feel very strongly that knowledge eliminates fear, and Air Force fire fighters should have knowledge to cope with an aircraft laden with a nuclear weapon," Chief Vreeland said. Months later, Chief Roscoe Bell, Deputy to Cook, published a classified document with specific guidance for fire fighters. The B-29 crash in California killed fire fighters, as well as others, and demolished fire trucks and property. Assistant Chief Robert Dittmer, Travis AFB, California, was seriously injured from the high-explosive blast. After detonation, the late Assistant Fire Chief Dave McCready assumed command of fire department operations. For them, guidance came much too late, knowing nothing and expecting the worst. They and others who experienced it at the beginning, muted by secrecy, did their job without a shred of fanfare.

Gas 'Em Up at the Crash Station. Always pursue a good idea. For too long fire trucks were driven to the base service station for fuel. As crash trucks became larger, they were too difficult to maneuver through narrow streets. Also, fire trucks off the flight line meant less protection for aircraft.

What about a gas station at the flight line fire station? About the time the idea was conceived, the Air Force discontinued Aero Clubs at many of its bases. Aero Clubs had underground or above ground fuel tanks to service private airplanes. The fuel tanks were real property. That idea inspired the fire chief at Seymour Johnson AFB, North Carolina. The chief suggested to the base fire marshal that tanks be removed and re-installed at the flight line crash station. "Chief, what are you going to do for pumps?" Lieutenant Colonel Dobbins asked.

“I’ll get the pumps, if you’ll install the tanks,” Chief replied.

The next morning, Chief Harold Engle from the Army post at Fort Bragg, North Carolina called. “Chief, do you have extra foam? I have new P-4 crash trucks and no foam.”

“Harold, do I have a deal for you. I’ll trade 1,000 gallons of foam for two Quartermaster gas pumps.”

Two days later Chief Engle delivered two gas pumps to the Seymour Johnson Fire Department. A priority work order was submitted, and civil engineering craftsmen installed two 2,000-gallon tanks with pumps at the fire department. Two weeks later the service station opened for business with gasoline and diesel fuel for fire trucks. The fire fighters managed their service station, kept records, and reported fuel consumption to the base fuels office. The fire truck fleet stayed on the flight line and the humongous, 65-ton P-15 crash truck no longer had to negotiate narrow streets to fuel at the Base Service Station. An Air Force suggestion was submitted but disapproved for Air Force-wide application.

New combination crash fire stations cost between \$4 and \$7 million. Unfortunately, a gasoline and diesel service station isn’t part of the new fire station design. A minor design change, however, would keep fire trucks on the flight line where they belong.

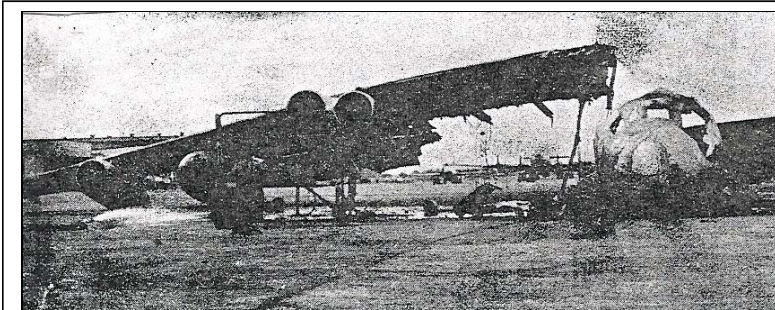
Keflavik, Iceland Fire Department. Crash crews responded one night to a four-engine cargo airplane landing in freezing rain with one engine out and five crew members. Minutes later the pilot reported two engines out. At that point fire crews expected the worst. In poor visibility, the pilot approached the runway, landed, and taxied without fire crews ever seeing the airplane. This and other similar experiences make fire fighters have bad “tickers.”

Another Keflavik incident involved a transformer fire, 60 mph winds, and heavy rain. The electrical feeder carried 2,800 volts. The acting fire chief said, “Get a ladder up there and a carbon dioxide fire extinguisher and put that fire out!” A seasoned crew chief reversed that order. “Don’t anybody touch that ladder!” The fire crew, not the acting chief, made the right decision.

B-47 Fire and Explosion, Whiteman AFB, Missouri. On May 15, 1952, a B-47 Stratojet fire and explosion killed Base Fire Chief P.E. Ralls, Airman Second Class Joseph Palagonia, Airman Third Class Jacob Lang, and Airman Third Class Wayne Hower and injured 18 others. After the fire was thought to be contained, the fire chief and his fire fighters inched their way toward the foam-covered aircraft to determine the cause of the fire. The jet blew, killing all four.

More than 50 bombers were strung down the flightline at this time, and the B-47 was practically in the middle of them. Aircraft maintenance people braved the danger zone, clambered into cockpits of

nearby jets and maneuvered them out of danger. Some of those people had never handled the controls of a jet and acted out of sheer courage and necessity.



(Photo courtesy of Base Fire Chief Ralph McHenry, Whiteman AFB, Missouri).

B-36 Explosion and Fire, Ramey AFB, Puerto Rico, 1952. A B-36 heavy bomber exploded while undergoing routine maintenance. Fire fighter Morris Eidson was participating in a Saturday morning parade when the explosion occurred. He dashed to the crash station, donned protective clothing over his pressed military uniform, and joined other fire fighters at the scene. Chief Hackett's fire fighters applied several thousand pounds of carbon dioxide and thousands of gallons of protein foam to extinguish the torching magnesium and burning 145 octane fuel. Fire fighters were exposed to extreme danger, and several received burn injuries. Rapid evacuation saved nearby B-36s.



The fire fighter in the foreground with crash hood in his left hand is Morris Eidson. I'm grateful to Chief Eidson for sharing photos and story. Morris served twice as Deputy Fire Chief, Seymour Johnson AFB, Goldsboro, North Carolina. An outstanding performer.

The Jet Age. The jet age for bombers began with four jet pods on the B-36, in addition to its six reciprocating engines. All engines used 145 octane gasoline. At that time, the U. S. Air Force was producing an increased number of bombers to counter Russia's threat for global supremacy. With more bombers and extended missions came potential for more aircraft accidents.

This was at a time when SAC B-29 and B-36 bases had two wings and KB-29 tankers; when open-cab Class 155 crash trucks stood alert near the runway and fire fighters were exposed to the elements; when fire fighters ate flight lunches adjacent to the runway and standbys lasted eight hours. Crash crews in those days spent more time out of than in the crash station.

F-84G Highway Landing. About 1953, an F-84G piloted by Lieutenant Broadaway, low on fuel and



B-36 Explosion and Fire, Carswell AFB TX

unable to reach Bergstrom AFB, landed on the Bastrop Highway near Austin, Texas. Colonel Cy Wilson, the wing commander, had the jet refueled. The Texas Highway Patrol cleared traffic off the highway so the pilot could take off. He did so successfully and landed at Bergstrom.

In an ironic twist of events, Colonel Wilson was later killed landing an F-84F on a highway near Pineywood, Mississippi, in 1958. Colonel Wilson landed, but the jet hit a chuckhole, veered off the road, and struck an embankment. He died on impact.

Weekend Tornado, Carswell AFB, Texas, 1952. It happened on a Sunday, the day before Labor Day. The Oklahoma City Weather Bureau had issued a tornado warning. Assistant Chief O. A. Kimbrough stared at the dark blue sky over Lake Worth and recognized turbulence that could develop into a tornado. At once, he called the control tower operator. “No sweat, just gusty winds expected,” the controller said. Chief Kimbrough ordered all crash trucks to disperse immediately and leave fire station apparatus stall doors open. In seconds, the tornado struck across the flight line. By that time, many B-36s were in motion, crashing through nose docks and other buildings and plowing into each other. Electrical wires and transformers sparked all over the hangar line. Scores of B-36s were pushed and at times were lifted airborne by 100 mph winds. Torrential rains accompanied the tornado. The rain pricked like needles.

In front of the damaged crash station, three B-36s were stacked with noses pointed skyward, as if taking off. Many of the planes were heavily damaged; others were destroyed.

A P-51 Mustang earlier parked on the transient ramp was blown against the base of the control tower. That impact caused the emergency generator to start, as fuel spilled from the Mustang. That day, by the grace of God, not a single fire occurred. A fire would have most likely destroyed the flight line and everything on it. The devastation lasted five minutes. The fire department lost three small crash trucks. An O-10 crash truck was damaged when a B-36 hydraulic jack slammed the right door. A B-36 ran over a Class 155 crash truck, stripping both turrets, but the fire crew miraculously escaped serious injury. Another B-36 clipped the crash station and leveled a stall and sleeping quarters. That is where the terrified control tower operator was found—under a desk in the crash station.



Fire Department after tornado, Carswell AFB, Texas

Chief Kimbrough assessed the damage and prioritized recovery. The fire station communication panel was all lit up. He dispatched a structural pumper to the base hospital. The fire truck crew dodged downed power lines to get there.

The base commander stood awed and speechless in front of the crash station.

Ironically, the B-36 Consolidated Plant one-half mile away stood unscathed.

The next day General LeMay landed for a firsthand inspection. In two days, aircraft repairmen from San Antonio, Texas, set up what looked like a huge aircraft repair facility.

That day fire fighters faced a greater catastrophe, a flight line conflagration. Only God knows why it didn't happen.

Aircraft Ejection Seat System. The jet age introduced the pilot seat ejection system. The potential for inadvertent firing of an ejection seat during rescue operations concerned rescuemen. Firing of the seat would, most likely, be fatal to crew and fire fighters. A seat disarming tool was used to cut cable and jettison hoses to safe the ejection system on Air Force jets.

Fire fighters at Carswell AFB, Texas, encountered their first such emergency when an F-80 aborted on takeoff with an engine fire. When crash crews arrived, the pilot was gone, and the burning engine was still running. The Class 150 dumped hundred of pounds of carbon dioxide into the engine intake; the engine choked and died. The rescue man searched the cockpit, unaware that the ejection seat was armed.

Another ejection seat incident happened at Dow AFB, Bangor, Maine. The Air Defense Command klaxon sounded, and a jet interceptor scrambled. The pilot erred, lined up at night on the taxiway instead of the runway, and began his takeoff roll. At a turn in the taxiway the jet left the pavement and impacted trees and a snow bank. The jet burned as crash trucks attacked the fire. The rescue crew helped the pilot out of the cockpit. The Class 155 crash truck was positioned directly behind the jet. The seat "cooked off" and shot straight up, landing between the crash truck and the jet. Luckily, fire fighters weren't killed.

HH-43B Helicopter and Airborne Fire Suppression Kit (FSK). In 1957, the Air Force encouraged U.S. helicopter manufacturers to develop a helicopter to perform fire suppression and rescue. Kaman Aircraft Corporation of Bloomfield, Connecticut, won the contract. The airborne fire suppression kit was designed and used in conjunction with the helicopter to suppress a fire, not necessarily to extinguish it. "The goal of fire suppression was to control the flames long enough to perform rescue," Chief Akers said.

The FSK and two fire fighters were transported to the crash site by helicopter, where the suppression kit and the fire fighters were unloaded to the ground. The fire fighters then employed the FSK to cut a rescue path through the fire and performed rescue while the helicopter hovered above and behind fire fighters directing its rotor wash over them and the rescue path.

Chief Akers, who received formal training at Stead AFB, Nevada, served on the HH-43B "chopper" for three years at Charleston AFB, South Carolina. The program was a good idea, but it wasn't always used as it was intended, according to Chief Akers.

A B-47 Crash, Others Aborted, Dyess AFB, Texas, 1958. The B-47 alert force was scheduled for classified launch from Dyess AFB, October 1958. Chief O. A. Kimbrough briefed all fire fighters on both shifts for the 0930 mission. Every crash and rescue truck had a full crew. Assistant Chief William Burke and an 0-11A crash truck monitored B-47 engine starts and observed the bombers taxi to the hammerhead and runway. A second crash truck was positioned at the first taxiway, with others occupying all taxiways. Chief Kimbrough and the author were positioned at the departure end. Assistant Chief Burke would command on-base emergency and Chief Kimbrough would command off-base incidents.

The klaxon sounded at exactly 0930. In minutes all aircraft engines started, and jets rolled toward the runway. The first three B-47s launched at 15-second intervals. The jet engine water alcohol darkened the runway.

Something different occurred on the number four aircraft. Instead of a free burn from the assisted takeoff (ATO) bottle, the butt plate blew and entered the fuel cell. The tail burned. Once activated, the ATO continued to burn for 16 seconds, so the fiery jet proceeded down the runway with enough power to clear the runway. The malfunctioned ATO bottle caused 29 other bottles to break loose and spiral down the flight line, among taxiways and fuel pump houses. Other jets behind number four aborted, dodging scattered ATO bottles and fire on the runway.

Chief Kimbrough knew the burning B-47 couldn't abort. At first, the pilot didn't know he was on fire, although other pilots radioed, "Fire! Fire! Fire!" When the co-pilot looked back, he saw fire. The pilot pitched the nose up and three crew members ejected on base. The fourth crew chief, in the crawl space, had no ejection seat and no way out. The most incredible sight observed by Chief Kimbrough and the author was seeing SSgt Snider looking out the spoiler door as the burning jet passed overhead. The disabled jet turned slightly to the right, then left, then pitched to the ground and exploded beyond Highway 277.



Chief Kimbrough, one 0-11A, and a rescue truck responded to the crash site. Most everything was contained in the burning crater. Chief Kimbrough established the command post 1,500 feet upwind. The security police force posted guards. The Division Commander came to the reentry point, advised everyone not to disclose any information, and said that there would be a meeting in his conference room at 1300.

About noon, Chief Kimbrough went to base operations and on the newspaper stand saw the headline, "B-47 Crashes with Hydrogen Bomb."

The Fifteenth Air Force Disaster Team from Riverside, California, was first to arrive, followed by the HQ SAC Disaster Team from Omaha, Nebraska.

Meanwhile, at the crash fire station the telephones were ringing. It seemed like everybody called, but one caller in particular, supposedly from Washington, D.C., asked, "Have you had an atomic explosion?"

"If we had, I wouldn't be on this telephone," the fire fighter replied.

F-102 Crash, Elmendorf AFB, Alaska. The late Assistant Fire Chief Bob Cooney told the story of an interceptor that crashed into an aircraft hangar, killing the pilot. The next morning, Bob learned that the aircraft carried a "Genie" nuclear weapon.

Dalmatians Aren't Fire Fighters, But Are Treated Like Them. Its spotted coat distinguishes the Dalmatian. In the United States, Dalmatians were used as coach dogs. They became identified as fire fighters' dogs running with horse-drawn fire engines to clear the streets.

The Dalmatian is well known for its heroic performances as a fire apparatus follower and as a firehouse mascot. Like the gypsy, he may have originated in the Balkans, not located in any one place. Although a dozen nationalities take credit for him and have as many native names, the English have nicknamed it the English Coach Dog. The Dalmatian took to a horse as the horse took to him.

The National Fire Protection Association introduced Sparky the Firedog on March 19, 1951, to enhance fire prevention educational programs across America. Sparky's friendly personality appealed to adults as well as children. Fire prevention inspectors and Sparky motivated the air base public to focus on fire safety. During the Annual National Fire Prevention Week program, Sparky teamed up with Smoky the Bear for greater emphasis on fire prevention. Fire Inspector Dick Waller and Joe Haider, Jr., Eielson AFB, Fairbanks, Alaska, garnered national awards for having the best year-round fire prevention campaign in the Air Force.

Inspector Waller once owned a purebred Dalmatian, littered from his "Fire Dog." He didn't ever recall seeing one with such perfect markings. The dog was smart and did tricks by voice and hand signals. He learned fast and behaved well.

One year later, a neighbor came to the house and used indelicate language, accusing the dog of destroying her flowerbed. It happened a second time. It upset the owner, because he knew the dog had not left its yard. Two neighborhood kids, one 11 and a younger brother, played with, pulled at, and laid on this playful dog. It turned out the kids had picked the old bat's flowers.

One day, the dog sniffed his way to the meat market, and the butcher gave him a bone. The next day, alone, the dog returned home from the meat market with a bone. Every morning he went for a bone, until Sunday. The market was closed on Sunday. The dog never left on Sunday again.

Because of the bickering, the dog was given to a Vermont family. The family had a grandfather living with them. Grandpa became ill and was hospitalized. The family visited him daily. On the third day, the dog showed up in Grandpa's hospital room. The doctor called the "press." A story, with photo of the dog and Grandpa, was published.

Royal Air Force (RAF) Station, Sturgate, England The base fire chief owned a Dalmatian, named Bennie. The military fire fighters had nicknamed the base "Sturgate on the farm." Farms surrounded the base and had chickens, cows, and hogs. Soon, a British Bobby appeared at the base fire station, charging that Bennie had been spotted with a chicken in his mouth trotting to the fire station. "Who owns the dog?" the officer asked.

“The whole fire department,” Chief replied. The humor of this situation caused no laughter. The Bobby informed the fire chief that the farmer claimed 28 dead chickens. In short, he was told to go to Her Majesty’s Court or pay for the chickens and the eggs the hens would lay. The fire chief consulted the base legal officer for advice. There was no escape but to pay up or go to court. The fire chief then spoke to the base provost marshal; he too had seen Bennie with a chicken in his mouth.

Two days later, the fire chief drove to the farm house with Bennie, muzzled by now. The check covered 28 chickens and eggs. On the check he penned “for chicken and eggs.”

The Queen of England got tax revenue, and the “chicken farmer” got chicken feed. The farmer remained dissatisfied. “What are you going to do with the dog?” he asked.

“Tomorrow, Bennie will have a new home in Doncaster, England,” the chief replied.

“And Doncaster is only 20 miles away, Bloke!”

Air Force Crash Boats. The crash boat, a separate entity, effected water rescue of downed pilots.

A B-36 bomber attempted to take off as its six pusher engines groaned. It splashed into Lake Worth, at the end of runway 35R at Carswell AFB, Texas. With the boathouse one-half mile away, the crash boat crew reached and rescued the crew before the bomber sank. Fire fighters watched helplessly from shore.

Other crash boat stations operated at Matagorda Island, Texas, Southwest Harbor, Maine, and elsewhere, but today crash boats operate only at Langley AFB, Virginia, and MacDill AFB, Florida.

Small Tip Saved Big Jet. Unannounced, the inevitable happened on December 14, 1973. A SAC KC-135, #0025, landed, and had its nose gear snap on landing. The jet smacked the runway, skidded 4,000 feet, and started to burn at the runway center line. The pilot and crew opened hatches, jumped, and escaped uninjured seconds before crash crews arrived on scene. JP-4 flowed and burned to the edge of the 300-foot-wide runway.

In two minutes, fire fighters attacked and extinguished the “outside” fire, but seconds later, fuel vapors re-ignited inside the jet’s nose, inaccessible to fire fighters, and they knew how difficult it would be to reach the fire in time. At least ten flashbacks occurred as fire fighters protected the fuselage.

To be sure, the unusual fire behavior convinced the fire chief and others of an internal fire, innocently but dangerously burning between four forward fuel cells. To get to it before the cells exploded challenged fire fighters.

After three minutes of fire fighting, the fire chief and assistant chief decided to penetrate the fuselage using a carbon dioxide bayonet nozzle off the O-6 crash truck. The rescueman bayoneted the jet as P-2 crash truck foam turrets protected him. In 30 seconds, the nozzle frosted, as cold suffocating gas entered the fuel cell area. Fire fighters expressed disbelief; no more flashbacks.

Rescueman Gunn entered the cockpit and reported no trace of carbon dioxide. Not intended, the bayonet nozzle had punctured one of four fuel cells and not the airspace between them. Sound bad? Not at all, for carbon dioxide expands. Heavier than air, producing more CO² vapors than jet fuel vapors, inside as well as outside fuel cells, the threat of fire or explosion was averted. The jet sustained \$100,000 in damage. The accident investigation team and an expert on aviation fuels credited the fire department for saving that one.

KC-135 #0025 launched again six months later.

A Friend Remembered 12 Years Later. The late Warrant Officer Carl K. Barker weighed 320 pounds. He was the only fire fighter to hand-crank the Class 155 six cylinder Continental pump engine.

One day as fire fighters played volleyball, Carl fell and fractured his right knee. Six fire fighters placed him on a stretcher and loaded him into the ambulance. Two days later, he had surgery at Fort Hood Army Hospital, Killeen, Texas. Twelve years later, Carl called the Fire Chief at Moron AB, Spain, from Morocco. The knee pained him. He faced medical problems, and the Air Force wanted him out because of his weight. Carl asked for a sworn affidavit, since the Moron Chief had witnessed the fall in Texas. The Air Force had no medical records of the surgery because it was done at an Army Hospital. The sworn statement did it. Carl was medically retired with disability. A fire fighter helped another fellow fire fighter and friend.

Goose Bay, Labrador. In late September 1959, a two-striper named Billie Ostrom reported for duty at the end of the earth. CWO Claude J. Courtier was the Fire Marshal, Dennis "Dink" Cessna was the Fire Chief, and Master Sergeant James Ryan was the NCOIC. The fire department had 15 military fire fighters, and the rest were Canadians and Newfoundlanders with a splash of Eskimo thrown in. Billie was assigned to "A" Shift and an 0-11A crash truck crew of four fire fighters. Billie went out on his first runway and tanker alert standby. Well, it didn't take long for him to figure out that he didn't have a whole lot of conversation between his crew, with two Newfoundlanders and one Eskimo. Billie climbed out and got up on the top of the truck, remembering how the raised part of the crew compartment was about right as a back support if a fire fighter faced the rear and sat on the uncomfortable anti-skid grating.

About that time, Billie looked up and was convinced that the world was in the first stages of ending, and here Mrs. Ostrom's little boy was about as far from home as he could get. It was Billie's first, but not last, sighting of the Northern Lights, and he was really concerned and scared.

"Dink," seeing how brave Billie was, put him in charge of himself and the fire department supply. Billie scrounged professionally, anything, whether it was around or not.

It was a sad day in Billie's life when he heard how that fine gentleman and real Chief Dennis Cessna met his end in Washington, D.C. He and others were rear-ended by a fuel tanker truck that exploded on impact. The only recognizable item afterwards was Dink's license plate. Dink was doing great work at the Pentagon, and it all ended on that tragic day.

B-52 Crash At Ellsworth AFB, Rapid City, South Dakota. First, a background statement about Chief Roland Gray. He first met Ross Stephens, Bert Kwist, and Hurley Bryant after he transferred from Smoky Hill Army Air Field to Rapid City AFB, in 1949. Ross was the point man for urgent fire truck repair. While Roland was at Smoky Hill, he stockpiled spare parts for the Class 155 crash truck. When Smoky Hill closed, Ross and Roland flew there in a C-47 and scrounged the parts.

It was a day that years of intensive training had prepared Ellsworth's fire fighters to meet. A B-52 with engine problems and nine crew members veered off the runway, headed toward the hangars, smacked the fuel pump house, ripped the fuselage open, broke off the right wing, and exploded in flames as crash crews sped to the burning jet.

The R-2A rescue truck and Type 0-6 crash truck positioned on the tail where the tail gunner was trapped, while other crash trucks sprayed foam on the nose of the bomber. Six crew members escaped from the fiery crash without burn injury. Fire fighters helped others who were injured.

The R-2A winch cable snapped twice trying to separate the 2,800-pound tail gunner turret from the aircraft. The cable broke the third time. The tail gunner had released the turret, but the explosive bolts had moved it only two inches against the ground. The rescuers broke a small window and talked to the gunner. He begged to get out, as fire fighters assured him he would be rescued.

Chief Gray ordered the 0-6 crash truck crew to ram the turret, but it took three rams to move the turret eight inches. The gunner squeezed out through the narrow opening in his tattered and burnt flight jacket.

The rescue operation at the bomber's nose was more complex. Two crew members were still missing. The co-pilot was obscured by foam mixed with mangled wreckage during the initial search by rescuers. Once the co-pilot was found, the R-2A ripped away part of the aircraft. He had been in the aircraft for 30 minutes. The search continued as rescuers ran their hands through the foam and jagged metal to locate the instructor navigator. Fire fighters feared he would not be alive, but there he was, covered with foam and metal. Rescuers removed one shoe to free him from the debris. Everyone cheered! Luckily, all nine lived.

The fire operation lasted two hours. Crash trucks were replenished with water and foam drums hoisted to the top of the trucks. "As I released my seat belts, I looked up and the fire department covered my aircraft with foam," the pilot said. "I bet the Fire Chief is glad I parked my airplane in front of all his fire trucks."

The B-52 stopped on three 25,000-gallon JP-4 underground tanks. Manifold pipes from the tanks were broken. Luckily, none of the tanks ignited or exploded. The totally destroyed pump house was a concern, but it didn't seriously hamper the fire and rescue operation.

Two of the eight jet engines ran during most the fire fighting operation. Chief Gray decided to let them run, since they were away from the main fire area. The chief had an earlier experience with another B-52 with no adverse effect on fire operations. "The engines consumed fuel," Chief Gray said.

The fire fighters had trained for B-52 fires. They knew fire tactics, and they applied them well. The medical staff did a remarkable job, too, assisting in the rescue effort. Chief Gray stood tall and proud on that day. He told his fire fighters, as he had told them many times, "It's the fire fighters who make the department and the fire chief look good."

To the good fortune of the fire fighters, the bomber didn't carry nuclear weapons. Brig General Archie Mayes, HQ SAC Director of Civil Engineering, visited Ellsworth two days later and asked, "What would have been needed to protect both nuclear weapon and crew?"

"AFFF," Chief Gray replied. In short order, AFFF was delivered to all SAC bases. Chief Gray's remarks expedited delivery of AFFF to all Air Force bases.

Chief Larry J. Lowman. "I'm doing just fine in Western North Carolina. I'm building a little airport for ultralight aircraft. It's a lot of work, but I'm having fun. I don't know how it is in heaven, but if it's better than Western, N.C., that's the next place I'm going." The Larry J. Lowman International Airport needed only a PSP (pierced steel plank) runway and an old Class 155 crash truck. Who knows, Larry may be called to build that crash station in the sky.

Of all wing commanders, **Brigadier General Lawrence E. Huggins'** star shown the brightest, at least for one fire chief. All fire chiefs had their special commanders, those who cared for their fire fighters, the ones remembered and called by name years later. One example was the 4th Tactical Fighter

Wing commander at Seymour Johnson AFB, North Carolina. Both the military and civilian fire fighters respected him. He was a “people” leader. He visited the fire station often, especially the day before major holidays, when fire fighters had to work while others enjoyed the day off.

Back then a “quick turn” rotated F-4s, with one engine running while the jet took maximum fuel in minutes. It became commonplace, but when the entire wing “quick turned,” the fire risk multiplied. On one occasion, he asked the fire chief to feed his maintenance crews in the fire station dining hall. “Fire fighters are here to protect the mission. Let’s do it!” the Fire Chief declared. The small dining hall was crowded, and meals were extended, but everyone ate.

Fire fighters, as well as flight line mechanics, knew the jammed aircraft parking apron as the coldest or the hottest place on the airfield. The unbearable summers, loaded with humidity, and the bone-chilling winters affected troop morale. The commander was more visible when the weather worsened. During one of his many chats, he said, “I can tell people who work on the flight line. They have weather-beaten faces.”

One day in the base commander’s office the base fire chief learned of General Huggins’ departure to Europe to become the Inspector General. A captain was also in the commander’s office with a poster board seeking humor “stuff” to be presented at the official farewell party at the Officers’ Club. “Chief, do you have anything to add to the poster?” the captain asked.

Muse struck the chief. Wham! “His wing span was great enough to provide shade for everyone.”

The general, now retired, lives in North Carolina. The chief and the general chat at the Base Exchange. They exchange salutations, and shoppers look in wonder because no one knows who they are, but they know each other well.

Inter-Continental Ballistic Missiles (ICBMs) and Fire Protection. For the most part, Air Force Fire Chiefs knew of air-to-air missiles like the AIM 9 Sidewinder. Not too many Air Force bases had ICBMs, and the ones that had them in SAC were dispersed in the Midwest, either on launch pads for the Atlas or in silos for the Titan I, II, and Minuteman, out of sight and out of mind. The installed deluge systems protected the pad and silo at liftoff. Systems also shielded the missile. The missile site had a launch control center (LCC) and launch facility (LF). The only structure above ground was the soft support building. Everything else was underground.

The worst missile disaster occurred at Little Rock AFB, Arkansas. The fire occurred while the contractor reinforced the launch site. At first, the base fire department received a call of smoke at the off-base site. The rigid fire reporting procedure in SAC dictated that the fire chief investigate. A helicopter airlifted Chief Dunne and the base safety officer to the site. At once, they realized the situation was very serious. They initiated the base disaster plan. The fire had started in the LF, with Titan II missile in the silo. The ensuing fire disabled the emergency electrical system in the LF, darkened the silo, and trapped construction workers. The fire claimed 53 lives. President Lyndon Johnson ordered an immediate investigation. Senator J. William Fulbright headed the investigation.

Everyone took the mandatory Familiarization Course at Vandenberg AFB, California. Dan Jacobson, an expert engineer, worked in the AF Ballistic Missile Division in California. He designed SAC’s ballistic missile fire suppression systems for all ICBMs.

By 1970, Vandenberg AFB had launched 1,500 missiles. The success rate was high, but failures did occur. The Photo Instrumentation Branch, 1st Strategic Air Division, at Vandenberg filmed all failures. The failures made an excellent training film for new fire fighters assigned to Vandenberg.

HQ SAC had its CEM library on the third floor, across from the fire protection office. Staffers often researched material associated with ICBMs. The library was open during working hours. Bert Kwist and his card-playing buddies used the library during lunch hour. They locked the door. One day, a general found the door locked and wanted to know why. The gamblers scattered and found another playroom. Bert Kwist wasn't about to quit playing cards.

Fire Inspector's Observation of Alaskan Air Command (AAC). The author is profoundly grateful to Assistant Chief Dick Waller for sharing his Alaska experience.

His first fire inspector job was at Eielson AFB, Fairbanks, Alaska, January 4, 1960, in minus 40 degree weather.

On his first workday, he observed structural fire fighters responding to many false alarms, prompting him to ask his supervisor, "Why so many false alarms?" "All fire protection systems are maintained by a contractor; the base fire department has no authority or responsibility," was the answer.

He first inspected the \$70 million main warehouse and found the dry valve sprinkler system shut down. The air compressor required a quarterly inspection. It was full of water. The contractor representative was contacted; he drained the compressor. The contractor couldn't produce any record of sprinkler system test. When asked to perform the required test, he admitted that he didn't know how. Inspector Waller and the contractor tested the sprinkler system, but the system failed because the valve malfunctioned.

After Inspector Waller reviewed the maintenance contract, he advised the base fire chief that the next contract should specify surveillance of the contractor's work. Meantime, the contract expired. Inspector Waller teamed with a civil engineering electrician and a plumber to perform inspection, test, and maintenance of all installed fire systems. The false alarms ceased. The Air Force saved \$22,000 annually.

Air Force Regulations relative to the fire prevention program, ignored for years, were now being enforced.

Inspector Waller was assigned to an operational shift in the absence of the regular assistant fire chief. He suspected the 0-11A crash trucks weren't well maintained. The truck's booster tanks were pre-mixed foam and water and valves were inoperative. After daily fire vehicle check, Dick summoned three 0-11A crews and informed them to prepare for a simulated aircraft fire at the training ground. Five hundred gallons of JP-4 was ignited, and three 0-11As couldn't extinguish the fire. The crash trucks had too many operational discrepancies. All four crash trucks were flow tested, and only one was satisfactory. When the base commander was apprised of the serious mechanical condition of crash trucks, he assigned two full-time mechanics to the fire station and mechanical reliability was restored.

Three months later, a WB-47 crashed on takeoff with a full load of fuel. Fire fighters controlled the fire and rescued all but one member of the crew. The fire fighters were successful because they had crash trucks in top mechanical condition. The Eielson AFB fire department received accolades from the Pentagon down through command channels.

Inspector Waller was assigned as Fire Protection Specialist, HQ AAC. During his first staff assistance visits to five sites on the Aleutian Chain, he focused on clean kitchen exhaust systems. He found none satisfactory because of inoperative exhaust fans, accumulation of grease, filters caked with grease, broken belts, and greasy motors. He corrected all discrepancies. The word quickly spread throughout Alaskan Air Command that he was "hell" on kitchen exhaust systems.

All radar sites along the Alaska coastline had upper and lower camps. The upper camps were equipped with standpipe systems, and those systems had an emergency fire pump powered by three-phase 30 horsepower electrical motors. During the first test, the motor smoked and overheated. Closer examination of equipment and records revealed the pumps hadn't been tested from 1953 to 1968. The sites were unprotected! The electrical motors on the fire pumps were improperly wired.

On another command visit to Murphy Dome, the alternate AAC Command Post, fire hydrants were inoperative. The fire pump supplied water to fire hydrants, and it couldn't be found. Engineering plans were reviewed, and the fire pump was found in the power plant completely enclosed and inaccessible. The site civil engineer immediately had a door installed. The fire pump was in a deteriorated state. Oil thickened in the oil pan necessitated removal of the oil pan, thorough cleaning, and addition of new oil to the crankcase. Within 24 hours the pump was tested and operational. This pump had been enclosed for ten years!

The project engineer for the U. S. Naval Station at Kodiak, Alaska, requested a qualified person to inspect a newly-installed sprinkler system and emergency fire pump. Fire Specialist Waller got the assignment. The pump house supplied water to the sprinkler system, 300 feet from the facility. Specialist Waller asked the contract representative if the old twelve-inch water main between the pump house and the new sprinkler system had been flushed to clear the pipe of debris.

"No, it's not in the contract," he replied.

The contract plumber was inexperienced with sprinkler systems. More examination of sprinkler system branch piping revealed piping anchored to sheet rock rather than with metal braces to ceiling joists. A light pull brought down branch pipe. Sprinkler heads were not installed in accordance with the National Fire Code. When the plumber was asked if the engineer responsible for the sprinkler installation had given him any help, he answered "no!"

Specialist Waller gave the Navy project engineer a detailed list of deficiencies and discussed the applicable fire codes. The Navy contract was well written, citing compliance with National Fire Codes. The Navy project engineer was advised not to run water to the sprinkler system until the water main had been thoroughly flushed in both directions. The 2,500-gpm fire pump was started and the sprinkler valve opened. Not a drop of water was visible. The supply pipe was plugged solid with stones, moss, mud, and sticks. An investigation followed, and photographs were taken. The contractor corrected all discovered discrepancies. The Navy engineer complimented Specialist Waller for expert technical assistance.

In the opinion of the author, Fire Protection Specialist Dick Waller was a most competent fire prevention inspector. He had an exceptional knowledge of installed fire protection systems and the National Fire Codes.



*Alaskan Air Command, Anchorage, Alaska
Left to Right: Chief Charles Chedd, Chief Seth Moore, Chief Richard I. Waller*

A devastating earthquake struck Anchorage, Alaska, in 1964. Elmendorf AFB was at the epicenter. Part of the coastline disappeared in Cook Inlet. High-rise structures crumpled, water mains burst, and main streets in Anchorage became split-level. Discrepancies in fire protection systems at the air base were assessed after the quake, but positive corrective action to restore systems was incomplete until Dick Waller inspected them and found them in deplorable condition four years later. The Elmendorf AFB Fire Chief had his chief inspector take the list of deficiencies and move his office to the base civil engineering complex, where he started programming action to correct discrepancies, both short and long range. Command support led to the elimination of all deficiencies in two years.

Air National Guard (ANG) Fire Protection. In 1973, the National Guard Bureau organized the Field Support Center at Edgewood Area, Aberdeen Proving Ground, Maryland. Colonel William Deneke created various positions to operate the center. The manning document included a Fire Protection Specialist, GS-11. First, the fire protection office developed and refined policies for the Air National Guard Fire Protection Program. Ed Wolbert from the 177th Fighter Interceptor Squadron, NAFEC [National Aviation Facilities Experimental Center], Atlantic City, N.J. was selected and formally assigned in June 1974.

At the same time, Air Force Fire Protection restructured its program and identified the unique operational programs used by the ANG. All ANG bases, except for those at active Air Force and U. S. Navy bases, had a single technician Fire Chief. Fire Protection services had a variety of methods, but the majority depended on augmented fire fighters from the maintenance organization as auxiliary fire fighters during normal flying operations.

Military manpower levels were set based on the number of fire protection requirements. The ANG had several units without auxiliary fire fighters because the civilian airfield fire station protected flying operations. The development of new UTCs [unit type codes] allowed for better allocation of fire fighters,

while still meeting the Air Force wartime mission.

Along with this restructure, new P-4 crash trucks and P-10 rescue vehicles were under development, and the ANG, for the first time, received them directly from manufacturers. The new vehicles replaced the 1950 0-11A and 0-10 crash trucks and the R-2A rescue truck. This didn't go well or unnoticed by HQ Air Force Fire Protection and transportation departments. They were unaware of ANG having 450 crash trucks. After many meetings, the ANG fire vehicles and much needed manpower were formally recognized, documented, reviewed, and accepted.

The newly published ANG Regulation 92-1 guided and incorporated more training requirements for personnel and produced acceptable manning for fire trucks. To support this effort, the ANG Fire Protection Office gained 2,500 proficiency-training (PT) workdays.

These fire truck and manpower resources were distributed to all flying units. The net result was a solid fire protection support program for ANG flying operations and an improved level of effectiveness before Operational Readiness Inspections and Management Evaluation Inspections. The program gained momentum the next two years and developed into a viable support mechanism for flying units. By the early 1980s, the program had grown to almost 60,000 workdays. This ensured fire protection coverage to the 70 or more units that protected the flying operations.

During the 1980s, ANG flying operations grew dramatically, with additional units supporting runway alert for the ADC and SAC KC-135 tanker alert missions.

Operational Suitability Test of Dry Chemical Extinguishing Agent, Air Proving Ground, Eglin AFB, Florida. Eight tests using Type 0-6, Type 0-7, and Type 0-8 crash trucks were conducted at Eglin AFB, July 27-August 4, 1950. Dry chemical proved superior to carbon dioxide as a quick knock-down agent. Tests indicated foam and dry chemical were compatible, but dry chemical had to be applied first, then foam. The application of both agents simultaneously destroyed the foam blanket and flashbacks occurred.

The test reports seemed to show fire fighters were inexperienced with the new agents, therefore causing obvious application errors. Improper application of carbon dioxide, dry chemical, and foam made the dry chemical test vehicle appear defective.

The dry chemical offered a very good screen for fire fighters and proved superior to carbon dioxide as a first attack agent. Dry chemical handlines were smaller, more flexible, and much easier to handle than the Type 0-6 carbon dioxide handlines.

Aircraft used for the tests were: F-84E, P-51D, F-81, and four B-17 bombers. Five hundred and fifty gallons of 100-octane fuel were used on fighter aircraft fires. B-17 fires used 1,200 gallons of 100-octane fuel.

Although the tests were conclusive, the Air Force wasn't convinced to select dry chemical agent over carbon dioxide. The controversial decision wasn't unanimous, as key fire protection leaders favored dry chemical.

On the other hand, the U. S. Navy used dry chemical on aircraft fires with great success.

HQ TAC, 1946-1992; Later Designated HQ Air Combat Command (ACC) in 1992. The birth of TAC, known as the fighter command, occurred at Langley AFB, Hampton, Virginia, March 21, 1946. Chief Paul Odell, assisted by John L. Tarver, was the first to serve in Fire Protection at HQ TAC, 1946-1949. At that time, the Air Installation Officer (forerunner of the Base Civil Engineer) supervised the fire

departments. Fire fighters operated 750-gpm Seagrave and American La France pumpers and Class 125, Class 110, Class 150, and Class 155 crash trucks.

The first jet fighter, the P-80 Shooting Star, was introduced in 1945. A few years later, the F-84G and F-86 jet fighters joined the inventory. That's when fire fighters were first exposed to the danger of ejection seat systems in jet aircraft.

In 1948, Chief Tommy Heffernan teamed with Chief Paul Odell at TAC Fire Protection, and in 1950 Chief Heffernan assumed command of fire protection.

The fire department became the Fire Protection and Aircraft Crash Rescue Section. Another change took place at the same time. An Air Force Specialty Code identified fire fighters.

By 1952, Ward La France 750-A and 530-A structural pumpers, Types 0-6, 0-10, and 0-11A crash vehicles, and the R-2 rescue vehicle replaced the older structural and crash fire vehicles.

The next generation of fire vehicles included P-8 and P-12 structural pumpers; P-2, P-4, P-15, and P-13 crash trucks, and P-10 rescue vehicles.

The latest generations of structural pumpers are the P-22 and P-24. The latest crash vehicle is the P-23, replacing the previous generation of fire vehicles.

Chief Paul Cunningham led TAC Fire Protection from 1959 until his retirement in 1971. During this time, Chief Paul Durham assisted and managed command fire protection.

The airborne fire fighting and rescue HH-43B helicopter was added to fire protection, enabling quick response to off-base crashes.

Along with newer crash trucks, advanced jet aircraft, like the F-4, F-16, F-15, and F-111 fighters and the F-117 Stealth fighter, became first-line fighters.

In 1971, Chief Paul Durham assumed fire protection responsibilities for the command. The succession continued with Chief Ben Partin, Chief Roger Miller, Jim Hotell, Charlie Cain, Tom Smith, and Randy Caratachea since 1992.

The P-19 crash trucks became the air mobile vehicles designed for airlift to forward bases, accompanied by deployed fire fighters. That combination proved significantly beneficial during the Persian Gulf War.

Early Fire Protection at Westover Army Air Field, Massachusetts, by Chief Ralph Sanborn. B-17s, P-47s, and C-47s flew in and out of Westover in 1942-1943. Three structural pumpers protected flying operations. The fire department had a civilian fire chief, three assistant fire chiefs, and a cadre of military fire fighters with the 383 military occupational specialty. Additional manpower came from other military organizations on base on 90-day rotations.

On August 13, 1942, fire fighters on duty included a civilian fire chief, an assistant fire chief, one corporal, and eleven privates. In 1943, an urgent request for crash fire fighting equipment and more fire fighters got the attention of General Eisenhower's headquarters in Europe. In the summer of 1943, a fire fighting school was started at Hartford, Connecticut. The fall of the same year, the school moved to Lake Pontchartrain, Louisiana.

The first graduates went directly overseas. They were comprised of one officer, a second or first lieutenant fire marshal, and twenty-eight fire fighters. The fire chief was a staff sergeant. The units were designated as Engineer/Aviation Fire Fighting Platoons.

The crash fire fighting equipment in use at that time consisted of Class 155 crash trucks, Class 150 carbon dioxide crash trucks, and Class 125 and Class 110 crash trucks. Class 155, Class 125, and Class 135 crash trucks and 1010 two-wheel trailer with a Hale 500-gpm pump protected B-17 and B-24 bombers in the European Theater of Operations, 1944-1946.

Crash trucks used high-pressure water fog as the primary fire-extinguishing agent in the early 1940s. Protein foam became the primary extinguishing agent later in the war. Crash trucks were modified locally to expel a foam and water mixture.

By 1950, fire fighter manpower for heavy bomber operations increased to 100 fire fighters with five fire fighters per truck crew. Manpower remained the same until the new 0-10 crash truck and the 0-11A crash truck arrived in 1952.

In the 1960s, to protect the larger B-52 jet bomber the larger P-2 crash truck was introduced Air Force-wide. The Type 0-6 replaced the aged Type 0-1. The R-2 rescue truck added rescue capability. During the 1970s, protein foam was replaced by superior AFFF as the primary extinguishing agent.

In 1978, the giant P-15 crash truck supported bases with large-frame aircraft like the C-5A, B-52, KC-135, C-141, B-47, and KC-10. The KC-10 carried 50,000 gallons of jet fuel for in-flight refueling, as well as passengers and cargo.

Strategic Air Command, 1946-1986. SAC was formed on March 21, 1946. It moved from Bolling Field to Andrews Field, Maryland, October 21, 1946. General George C. Kenney was the first SAC commander. The Iron Eagle, General Curtis E. LeMay, was the second commander at Offutt AFB, Omaha, Nebraska, November 9, 1948. He made SAC the most powerful bomber force in the world.

On January 13, 1948, all bases earlier identified as Army Air Fields were designated Air Force Bases. The Air Force had become a separate service in September 1947.

The SAC Headquarters facility had three stories, with an underground command post. The three subcommands were HQ Eighth Air Force, Ft. Worth, Texas; Second Air Force, Barksdale AFB, Louisiana; and Fifteenth Air Force, March AFB California. Other subordinate commands and air divisions were later added. They were the 7th Air Division in the United Kingdom, Sixteenth Air Force in Madrid, Spain, and Morocco, the 3rd Air Division in Guam and the 1st Strategic Air Division at Vandenberg AFB, California. General officers like Lieutenant General Selmon "Sundown" Wells, Lieutenant General James "Whip" Wilson, General Walter Sweeney, Lieutenant General Archie Old, General John P. McConnell, Lieutenant General Frank Armstrong, Lieutenant General Francis Griswold, and Lieutenant General Richard Montgomery were commanders within SAC.

Fifteenth Air Force, originally located at Colorado Springs, was the first of the numbered air forces to be assigned to SAC and became an all-jet bomber force in 1953.



Protein Foam Extinguishing Agent

The Korean Conflict started June 25, 1950, and ended July 27, 1953. Actually, the Air Force, like all of the other allied combat units, operated under wraps. It had the capability to hit the enemy where it would really hurt--in the equipment depots and troop concentrations in China. It was kept from doing so by political, rather than military, considerations.

“Our highly trained crews and ultra-modern aircraft were improperly used against unworthy targets,” Major General Emmett “Rosie” O’Donnell said. He went on to urge the training of crews in atomic capability at the earliest opportunity.

SAC was the heavy bomber command. That included the B-29 bomber, the B-50 bomber delivered February 20, 1948, the KB-29 refueler, and the B-36 delivered June 26, 1948. The B-36 was later equipped with four jet pods, besides its six pusher-type reciprocal engines.

The maiden B-36 flight crash-landed at Carswell AFB, Texas. The right main gear strut broke on takeoff. The damaged gear dangled for eight hours as experts tried to save the aircraft. Test pilot Erickson and a small crew stayed with the airplane as others bailed out. The crippled bomber made a twenty-mile approach to runway 17L. The pilot kept the bomber on the left main wheel until loss of ground speed and swerved the bomber off the runway and into the dirt. No fire occurred as crash fire vehicles positioned on the crashed aircraft. The crew escaped injury.

The first B-47 jet bomber was delivered June 1955. The KC-135 quickly replaced the aged and slower KB-29s beginning June 28, 1957.

In 1958, some jets experienced major mechanical problems. Alternator drives and Marman clamps compromised the B-52s, and the water injection system of that aircraft was still giving trouble also. The hydraulic systems overheated in the KC-135, and the tanker also had its share of trouble with the water injection system. The fuel tanks on the newly delivered KC-135s were fouled with dirt, grease, lint, hair paint chips, pieces of metal, and other odd items. The B-47 wings flapped ominously in 1958, and the malady was diagnosed as metal fatigue. Project “Milk Bottle” remedied the situation. As for the propeller-driven tankers, many of the propellers were simply no good. In 1957, SAC lost five KC-97s and 39 lives when the propellers of KC-97s simply fell off in flight. A retrofit of solid blades solved the problem. To cap it off, both the B-47 and the KC-97 had wheel problems. Crash fire crews answered countless ground emergencies caused by hot brakes.

SAC acquired the SR-71 mission in 1965. According to President Johnson, the SR-71 was “the most advanced in the world.” President Johnson and the Secretary of Defense approved the use of U-2s in 1964. Later the U-2 settled at Bien Hoa Air Base in South Vietnam.

Secretary McNamara committed B-47s and KC-97s to the storage facility at Davis-Monthan AFB, Arizona, in 1966. McNamara wasn’t done. He axed the older B-52s and B-58s and introduced the FB-111, which was once the highly controversial TFX, cousin to the Ford Edsel. Also, in 1964, ICBMs equaled the bomber alert force.

The first B-52 Arc Light bombing mission over Vietnam saw the mid-air collision of two B-52s on the way to target from Guam. The collision caused shock waves at SAC Headquarters. The command had practiced bomb runs long before Vietnam.

Strategic Wings. While the ground alert force approached its objective, SAC took other actions to ensure the survival of a responsive bomber force. During the tremendous expansion of the Air Force in the early and mid-fifties, bases became overcrowded, with some wings supporting as many as 90 B-47s

and 40 KC-97s. The first B-52 wings were also extremely large, composed of 45 bombers and 15 or 20 KC-135s all situated at one base. As the Russian missile threat became more pronounced and warning time was reduced, SAC bases presented increasingly attractive targets. Bombers and tankers were dispersed to more bases.

With the Soviet threat increased, the Airborne Command Post began operating February 3, 1961, with the code-name "Looking Glass," flying 24 hours a day. Lieutenant General John McConnell was the first to fly "Looking Glass." The command was postured to deliver an overwhelming nuclear strike if ordered

To gain military superiority, the first Atlas ICBM wing was activated at Francis E. Warren AFB, Wyoming, on February 1, 1958, followed by a Titan I unit at Lowry AFB, Denver, Colorado. SAC authorized a Class 530 structural pumper for site protection, mostly for the soft support building, the hardened underground capsule Launch Control Facility and silo, and the Launch Facility.

SAC was a gigantic command, filled with historic success stories. The author, who did extensive research for this book, particularly in Air Force histories, failed to find any reference to fire fighters who supported the Air Force flying mission. Histories, therefore, are mostly about commands, organizations, airplanes, and the people who fly them. Air Force museums are places to display flying machines, but again little mention of fire fighters who protected aircraft and crews in trouble. Fire fighters deserve some historical recognition for being the closest to the flight line mission, yet remain for the most part unmentioned, even in today's histories.

LeMay picked subordinate commanders, but he relied upon his noncommissioned officers. He established the first SAC Noncommissioned Officers' Academy in West Drayton, England. A SAC wing or division commander inspected each graduating class and presented diplomas to graduates. All master sergeants in the 7th Air Division, United Kingdom, had to attend the academy. The academy meant strict adherence to discipline. It put esprit de corps back into the enlisted force.

It wasn't uncommon for a master sergeant to function in a position normally filled by a commissioned officer. General LeMay was known to "fire" an officer and put a senior NCO in charge.

General LeMay fully employed sergeants and warrant officers as fire chiefs overseas and used a few stateside. The NCO corps respected General LeMay, for he restored pride in the Air Force. Everyone in SAC knew the cigar-smoking general.

General LeMay ordered a command standard for crash fire fighting trucks and fire fighters. Chief Bert Kwist, HQ SAC, called it, "Vehicle Package and Personnel Cell." No matter where SAC aircraft flew, the same number of crash trucks and fire fighters protected the mission.

General LeMay often visited command fire departments during base tours. The command fire chiefs had no option but to prepare for a no-notice visit.

General "Iron Eagle" Curtis LeMay died at the age of 83 on October 1, 1990. He was the one feared most by the Russians and respected most by the Air Force.

Air Force Space Command. The command was activated September 1, 1982, with headquarters at the Chidlaw Building in downtown Colorado Springs, Colorado. In November 1987, the headquarters moved to a new facility designed to resemble a spaceship on Peterson AFB, Colorado.

U.S. Space Command, a unified command, was also located on Peterson until it merged with U.S. Strategic Command (STRATCOM) at Offutt AFB, Nebraska, in October 2002. STRATCOM's Consolidated Space Operations Center is at Schriever AFB (formerly Falcon AFB), Colorado. The Command controls defensive military operations beyond the earth's atmosphere.

Air Force Space Command bases are: Peterson AFB, Cheyenne Mountain AFB, Buckley AFB, Schriever AFB, Malmstrom AFB, Los Angeles AFB, Clear Air Station, Alaska, Cavalier Air Station, North Dakota, Eldorado Air Force Station, Texas, Cape Cod Air Station, Massachusetts, New Boston Air Station, New Hampshire, and Woomera Air Station, Australia. The Command has spread its wings and absorbed Patrick AFB and Cape Canaveral Air Force Station, Florida; Ascension Auxiliary Airfield, South Atlantic; and Antigua AS, West Indies. It did not stop there. The command continued to expand and swallowed SAC relics: Vandenberg AFB, California, and F.E. Warren AFB, Wyoming.

Air Force Space Command is comprised of Fourteenth and Twentieth Air Forces, 21st, 30th, 45th, 50th, 90th, and 341st Space Wings, the Space and Missile Systems Center at Los Angeles AFB, the 460th Air Base Wing, and the 821st Air Base Group. The Command protects allied space systems, satellite operations, and military space launches, integrating space operations into the Air Force. Along with missile warning, the latest expansion is ownership of all missile wings. The Command has a worldwide network of remote tracking stations and global positioning sensor sites.

Air Force Space Command played a vital role during the Persian Gulf War, dubbed the "First Space War." Satellites controlled by Space Command in Colorado Springs handled most of the communication, helped allied troops pinpoint their positions and those of the enemy, forecast weather conditions, and detected missile launches.

The Command doesn't have fire stations or fire fighters in outer space, at least not yet. Fire protection in the Command is a diversified operation. The mission is unlike ACC or Air Mobility Command (AMC), both of which support strategic, tactical, and heavy transport flying missions. Command operations range from servicing launch vehicles and intercontinental missiles to high tech communications used for satellite guidance. The Command flies higher than AMC and ACC. It is the "Guardian of The High Frontier." With its missileers and spaceships, the Command allows America to sleep in peace.

History of Fire Protection, Langley AFB, Hampton, Virginia. The Langley Fire Department is over 80 years old. In 1916, the First World War raged in Europe as Langley developed new aeronautical technology for the war effort. The fire department was organized four years later.

The first two-bay fire station cost \$11,792 and was built at the corner of Dodd Boulevard and Douglas Street. In 1933, a new fire station was constructed at the corner of Andrews Street and Sweeney Boulevard, only to be replaced later by another fire station having four vehicle stalls. It was later abandoned and is now used by the base honor guard. A few years later, a temporary fire station was built in the Lighter-Than-Air area of the base.

As technology advanced, aircraft became larger and carried heavier loads. The advancement in aircraft design dictated fire departments keep in step with technology.

World War II changed the landscape at Langley. Fire fighters operated open-cab 750-gpm Seagrave pumpers to protect buildings, while the Class 125 and Class 135 and water tankers supported flying operations.

The west side of the base called Shellbank was purchased and developed. To keep pace in 1943, a new \$5,106 single-bay fire station protected the southwest end of the base. Later, another temporary four-bay fire station was built on the north side of the Base Operations building for the Class 150 Cardox crash truck, Type 0-11A crash truck, and rescue vehicle. An additional \$6,848 fire station, T-444, was constructed in 1943 for Shellbank. It has since been converted to an Airman's Attic. At the same time, another fire station was built adjacent to the golf course and another in the Langley View Housing Village. All these fire stations have since been demolished.

From the opening of the first fire station until 1948, Chief Tommy Heffernan led the fire department. He determined fire station designs and locations and calculated manpower needed to operate fire equipment. During this time, the base operated propeller-driven fighter, reconnaissance, and liaison aircraft.

In 1948, Chief Heffernan was promoted to the new HQ TAC Fire Protection Office. At the same time, Chief John Tarver became the Langley Fire Chief. For the next 16 years, he managed the department and resided on base in a small house known as the "Tarver House." Upon his retirement, the house was converted to VIP quarters. In 1979, the Air Force demolished the Tarver House.

In 1954, yet another new fire station was built, having space for nine fire vehicles. The standard fire vehicle package included Class 750-A Ward La France pumpers, Class 530-A/B pumpers, R-2 rescue truck, Type 0-11A/B crash truck, water tanker, and F-7, 2,500-gallon foamer/resupply vehicle.

In 1964, Chief Albert Mittelmaier assumed command of the fire department. He served 35 years. During this period, the City of Hampton, Virginia, contracted fire protection for the NASA (National Aeronautics and Space Administration) complex.

Eight years later, another one-bay fire station was built for Bethel Manor Family Housing. Twelve years later, it was replaced with a new fire station

In 1975, Thurston Madlock became Langley Fire Chief and tenured until his sudden death in 1979. With continued advancement in aircraft and weapon systems, the P-4, P-15, and P-2 crash trucks, P-10 rescue truck, and P-13 ramp truck became the next-generation crash and rescue vehicles.

Chief Robert Silverman became a short-term Fire Chief in 1982. One year later he accepted contract work in Saudi Arabia and relinquished Civil Service affiliation.

Chief Charlie Bowen assumed command of the fire department in 1983. The flying mission changed to F-15, F-16, EC-135, F-106, and F-117 aircraft as primary command tactical aircraft. Again, with that mission change came a new generation of fire vehicles: the P-23, P-26, and P-20.

By 1994, a propane gas-fired aircraft mockup was constructed with special funding from Brigadier General Michael "Mick" McAuliffe, the ACC Civil Engineer. The strict environmental regulations mandated use of propane gas over open burning of other flammable liquids.

With expanded fire protection activities and manpower issues, the need for a larger and more functional flight line combination fire station became apparent. In 1999, a new engineering marvel came at \$7 million. For once, fire protection had matched mission need by operating from two fire stations.

Air Force Academy Fire Protection, The Early Years. Before the Academy had fire protection responsibility, the USAFA Construction Agency, General Services Administration (GSA), provided fire fighters and security guards.

On May 3, 1957, motorized fire equipment arrived, consisting of two Class 500 pumpers, four Ward La France Class 750-A pumpers, three Class 530 pumpers, three 0-11As, two 1,500-gallon tankers, and the Type 0-6 crash truck.

The Academy Fire Department was activated July 1, 1958. The department operated from three fire stations and covered 18,000 acres.

The Class 750-A pumpers, with their six cylinder Continental engines, were grossly underpowered to operate at 14 percent grades and an altitude of 7,500 feet. Despite repeated requests, the problem wasn't resolved until new generation diesel-powered pumpers came to the Academy.

Fire Chief C. John Riley assumed command of the fire department July 9, 1959, and served until his retirement in 1974.

At first, the fire protection division had authorization for 120 fire fighters. That luxury didn't last. The department faced drastic manpower reductions which led to closure of fire station 3.

Pacific Air Forces. The Fire Protection mission in the Pacific Theater started January 1945. At that time, the War Department transferred all crash rescue and fire fighting activities and equipment from the Army Services Forces to the Army Air Forces.

After World War II, there was a lull until the start of the Korean War in 1950. The United States had K-2 Taegu AB, K-3 P'ohang AB, K-8 Kunsan AB, K-9 Pusan-East AB, K-13 Suwon AB, K-23 P'yongyang NK, K-37 Taegu West AB, K-55 Osan-Ni AB, and K-57 Kwang'ju AB, among others. The Republic of Korea built the air base named the Korean Aviation Institute in 1939. The Japanese used the base throughout the second World War. The United States Air Force designated it K-2 in 1950. At first, the Class 125 and Class 155 crash trucks supported the flying missions. The Type 0-11A crash truck later replaced the aged World War II crash trucks.

During the Vietnam War, the Air Force operated from Phan Rang, Cam Ranh Bay, Da Nang, Phu Cat, Tan Son Nhut, Nha Trang, Tuy Hoa, and Pleiku Air Bases in Vietnam and Udorn, Ubon, Korat, and Takli Royal Thai Air Bases in Thailand. By now the P-2 and P-4 crash trucks had replaced the 0-11As. At Ubon, the Royal Thai Air Force used a Royal Thai Toyota pumper. The HH-43B Helicopter, aptly named "Pedro," had an 83-gallon water and foam kit and was introduced in the Vietnam War as an airborne fire-suppression unit. Fire fighters were trained and performed all fire-suppression operations. Pedro often flew deep inside enemy territory to rescue downed pilots and aircrews. Pedro saved more lives than any other rescue helicopter used in Vietnam.

Clark Air Base, Philippines, was the largest of the Pacific bases during the Vietnam War and was a major stopping point for troops entering and leaving the war. In June 1991, Mt. Pinatubo erupted and spewed ash all over Clark Air Base. After the eruption, the Air Force officially closed the base and turned it over to the Philippines.

The Home of PACAF, Hickam AFB, Hawaii, was dedicated May 31, 1935. The base was completed and officially activated September 15, 1938. On "A Day That Will Live in Infamy," December 7, 1941, Fire Station I sustained damage. Pearl Harbor sustained the heaviest losses from the Japanese aerial attack. Today, the fire department continues to serve the people of Hickam AFB, Honolulu International Airport, and the entire Island of Oahu. The department averages 900 airfield emergencies and 300 medical/rescue calls a year.

Andersen AFB, Guam. The Army Air Forces built Northwest Field and North Field in November 1944. North Field became North Guam AFB in 1947 and was renamed Andersen AFB on October 7, 1947. “Our Crash Officer was First Lieutenant W. Reed; our fire chief was a civilian named Loudermilk. The NCOIC was Sergeant Baffey. We had a shortage of turn-out gear and safety equipment, but that was the way it was then,” MSgt John O’Donnell said.

Korean Air Flight 801 crashed at Andersen AFB in August 1997, killing 228 aboard. It was the worst air crash disaster in Korean air history. Base fire fighters saved numerous passengers, including a six-year-old girl and her mother who were pulled from the wreckage.

Elmendorf AFB, Anchorage, Alaska. In 1940, the Army established Fort Richardson near Anchorage. After World War II, a new Fort Richardson was built. The Air Force took over the old one and named it Elmendorf AFB. During the Vietnam War, Elmendorf heavily supported the war effort. C-141 traffic was heavy, with cargo, troops, and early-morning aeromedical flights bringing our wounded back for immediate medical care in the Lower 48. By 1969, 25,000 C-141s had passed through Elmendorf. Elmendorf was one of the first bases to have four P-2 crash trucks to support the around-the-clock flying.

Eielson AFB, Fairbanks, Alaska. The military area near Fairbanks was called 26-Mile Post until February 4, 1948, when the Air Force changed the name to Eielson AFB in honor of famed Arctic aviation pioneer Carl Ben Eielson. In 1955, an F-84 crashed in the family housing area, killing 15 people. In 1963, a KC-135 from Castle AFB, California, exploded and killed A1C Roy L. Hursey, an air policeman. Today, the Eielson Fire Department operates from two fire stations serving family housing and the flight line.

Misawa AB, Japan. In 1938, the Imperial Japanese Army constructed an airstrip at Misawa. In August 1945, B-29 bombers destroyed 90 percent of all Japanese aircraft and facilities on base. In September 1945, the U. S. Army Engineering Construction Group began rebuilding Misawa Air Base. Today, the fire department has four fire stations and a new state-of-the-art fire station that opened in 2001.

Yokota AB, Japan. The Japanese Imperial Army opened Tama Army Air Field in March 1940. U.S. Forces took over the base in 1945 and renamed the base Yokota, after a small village located in the northeast corner of the base. Yokota was a main base during the Vietnam War. The Fire Department was recognized as the best in the Pacific and the Air Force in 1996 and in the Department of Defense in 1997.

Kadena AB, Okinawa. The Americans captured the airfield just a few hours after the invasion of Okinawa in April 1945. The 316th Bomb Wing was the first to use the field under Eighth Air Force, commanded by Lieutenant General Jimmy Doolittle. Today, the fire department has four fire stations and 131 fire fighters.

Osan AB, Republic of Korea. Originally designated K-55, the base was renamed Osan Air Base in September 1956. A large fuel storage tank explosion in April 1955 killed 16 civilian contractors and one Air Force staff sergeant. The cause of the explosion was never determined.

Kunsan AB, Republic of Korea. First called Camp Hillenmeyer by the U. S. Army, the base was renamed Kunsan AB in 1945. The base served as a bomber base during the Korean War. Scores of temporary structures and tents housed fire department operations.

Fallen Comrades. The inherent danger of fire fighting is something that fire fighters in the Pacific faced on any given day. Many gave the ultimate sacrifice to save others from fire. Pearl Harbor heroes include two civilian fire captains and a nozzle man killed and six others wounded during fire fighting

operations following the bombings on December 7, 1941. The six wounded became the only civilian fire fighters to ever receive the Purple Heart.

The Fire Memorial at Yokota AB commemorates ten Yokota fire fighters killed when a B-29 exploded on November 18, 1951.

TSgt Emmett Sommers Orr and SSgt Milard Luther E. Bledsoe were killed on October 10, 1968. Pedro responded to an in-flight B-57 emergency. Pedro 44 suddenly crashed to the ground, killing all five crew members. Pedro belonged to Detachment 11, 38th Air Rescue and Recovery Squadron, Phan Rang AB, South Vietnam.

Sergeant James Lathon and A1C Robert William Doss were killed May 17, 1969. After Sergeant Lathon called in an F-105 crash, he responded and fought the fire with the handline from a ramp patrol vehicle. A missile exploded. Sergeant Lathon died on his 23rd birthday of wounds from flying shrapnel. Airman Doss responded to the crash of a Vietnamese A-1 fighter. He was struck in the chest by aircraft fragments when it exploded as rescue was performed. He was 27 years old.

Civilian versus Military Manpower. From the beginning, the operation of Army Air Corps and later Air Force Fire Protection varied by subcommands because of different missions. Most noncombat commands had all civilian fire fighters, while combat commands had a mix of military and civilian fire fighters stateside and all military abroad. This led to heated debate as to what standard of fairness should apply for all Air Force Fire Departments. Each had a stake in defending its position, but the ultimate goal was to agree on principle and promote the most effective emergency service, unequalled anywhere in the world. Admittedly, disagreement caused concern, but objectives were met because goals were measured and reached by pioneers who were determined to make it better for future generations of fire fighters.

The chapter closes with shared lessons learned, at times hard lessons, through academic learning and practical experience, which was tragic at times but humorous at other times.

CHAPTER 4

TRAINING

In the beginning, pioneers organized the first Army Air Forces Fire School at Geiger Field, Washington, in 1943. In that year, the Commander of the Army Air Forces, General Henry “Hap” Arnold, instituted fire training at Geiger.

The second fire school was established at Buckley Field, Denver, Colorado, in 1944. In February 1946, the school moved a few miles to Lowry Field, Denver, Colorado. In *An Early Perspective of the Lowry Air Force Base Fire School*, by Instructor William A. York, he explains that Chief Jasper W. Patterson was the primary instructor. The Lowry fire school had a rough start. Chief Patterson had a limited budget to operate the school and was given the ultimatum to either operate within that budget or close the school. So, instructors did the best they could to manage the school on a minging budget.



The Army Air Forces Crash Fire Fighting and Rescue School, Lowry Field, Denver, Colorado.
(Photo courtesy of Frances Simmons)

Students remember Lowry as being divided into two parts, Lowry I and Lowry II. The fire school was located at Lowry II, in the old aircraft engine test cell block area. With the test cell equipment removed, they created office space, classrooms, and a bunker clothing room.

William York writes, “We went to work at 4 a.m. and stoked the coal furnaces so classrooms would be heated before students arrived for class. And then, they’d stand around and moan and groan about this being the worst place in the world for a fire school. While they complained, instructors worked outside in the cold and snow repairing leaks to the tunnel line of the Class 155 crash truck. It was in those times that we relied on the class leaders to keep a semblance of order.”



Chief O. A. Kimbrough at air base theater demonstrating fire prevention education that motivated people.

“Oftentimes we had an overload of students, at times as high as three classes a day. At that point we were rather short of instructors. It wasn’t unusual having as many as 70 students per instructor, and we appointed class leaders to help control the classroom. It was during this time that we observed some of the finest Air Force noncommissioned officers. They accepted the challenge and became a great asset to the instructors. It wasn’t unusual for someone like TSgt Utterback, who, after completing his military service, returned as a civilian instructor at the school.

“When the temperature was 15 degrees or below, we canceled structural and crash rescue training on the ‘hill’ and stayed in the classroom until the temperature got back in operational range.

“At first, instructors performed all fire truck maintenance. When the school was finally allotted mechanics, instructors were surely pleased.

“The instructors hauled gravel to the burn (training) area and built structural burn buildings on weekends. Our aircraft mockups were all crashed planes that we hauled to the burn area for live fire fighting and rescue training.”



Chief Jasper W. Patterson, Lowry AFB Fire School, Denver, Colorado, reviewing fire tactics with Instructors Odell Damerall, Bill York, Marvin Roe, and Glenn Mullins.

The Lowry AFB Fire Department was a separate entity from the formal fire school. It called upon the school when it had a major emergency. One time, a B-52 headed for who knows where, with a full crew and a bunch of hitchhikers aboard, landed and refueled. On takeoff, the bomber lost an engine and radioed that he'd come back in. The Base Fire Department alerted the fire school for standby. As the bomber turned toward the base, it lost its #2 engine and the pilot radioed, "I can't make it back!" He didn't. The jet crashed near Stapleton Airport outside Denver, Colorado. Crash fire trucks from the fire school arrived first and found the bomber totally engulfed in flames. Two Class 150 and three Class 155 crash trucks attacked and controlled the fire and rescued all 21 crew members. It should be noted here that when Stapleton fire fighters, along with City of Denver fire fighters, got there the fire school fire fighters had the fire under control and the rescue made.

The next day, the base hospital released all crew members. They came to the fire school and thanked the students. York wrote, "All the handshaking and probably, had we not been so ugly, they'd have kissed us."

Other instructors at the Lowry Fire School included Golden Simmons, Odell Damerall, Bill Beck, Melton Speck, and Jake Horner.

One of The First Graduating Classes at the Lowry AFB Fire School. B-29s were plentiful after World War II, and so were training fires. Aircraft like the B-25 medium bomber and other surplus aircraft were used in training fires. The practical training exposed students to small, medium, and large

aircraft fires. The students graduated with practical fire experience. In addition to the fire fighting course, the school offered an instructor course.



*The first type 0-10 crash truck formal training class for Air Force Fire Chiefs,
Lowry AFB, Denver, Colorado, March 22, 1952*

First Row: Taylor, Chard, McClarin, Crumb.

*Second Row: Simmons, Mitchell, Schaber, Folks, Weldon, Hagen, Courchene, Stephens, Gilkerson, Webber,
McGregg, Bailey, Clinton, Boyette, Speck, Boyer, Damerall, Townsend, Captain Peterson.*

Third Row: Stonecipher, Speelman, Benson, Martin, Nagel, Miller, McCready, Connely, Hendricks.

Fourth Row: Zelinski, Pritchard, Bryant, Yenney, Dunn.

Not all fire fighters could attend the formal Air Force Fire School. Air Force bases likened their training to the methodology taught at the Lowry Fire School—80 percent practical fire-ground training and 20 percent academic. The instructors preferred hands-on training to the classroom. Chief Patterson graduated fire fighters at the training ground, not in classrooms.

Air Force Fire Departments built their own training pits decades before the Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) mandated tough compliance with air pollution and safety standards. Fire fighters rolled barrels of any kind of contaminated fuels to the edge of the gravel pit. Fire fighters then wet the pit, added fuel, and torched the pit. For realism, the empty drums were left in the burning pit. Whoosh!

Greenville, Mississippi Fire School. The Air Force Fire School moved from Lowry AFB, Denver, Colorado, to Mississippi in 1960, and remained there until 1964. When Hugh Pike arrived for the first class, he pulled KP duty for two weeks before classrooms were ready for students. All classes were held in an aircraft hangar. Mr. Herbert Lefkowitz and Mr. Walter Kemmitzer instructed at the fire school there, as well as at Chanute earlier. Instructor Lefkowitz, Mr. Art “Pappy” Hanlon, and Mr. Frank Martin all three taught at Greenville. Hanlon had also taught at Lowry Fire School. One major problem plagued training at Greenville: the mechanical condition of fire trucks was deplorable. Being in constant use, normal wear and tear on the vehicles increased by 1,000 percent. An additional vehicle problem often curtailed training. Greenville had subcontracted its fire truck maintenance to a private firm. Unfortunately, civilian mechanics were unfamiliar with maintaining 0-11A and 0-11B crash trucks. Before the Greenville fire school closed, two of every three crash trucks were out of service.



Two more of the earliest graduating classes from the Fire School at Lowry AFB, Denver, Colorado.

Chanute AFB Fire School. The formal training school moved to Chanute AFB, Rantoul, Illinois in July 1965. Warrant Officer Lou Garland commanded the school and immediately set goals. Many problems faced the career field. One of the most critical involved the morale of fire fighters themselves. Early instructors who served during that time were Herbert Lefkowitz, Art "Pappy" Hanlon, Frank Martin, Walt Kemitzer, and B. D. Moore.

MSgt Hugh Akers, who had earlier served with Lou in Germany, joined the school staff in July 1966. Hugh became noncommissioned officer in charge of fire protection advanced courses, like Fire Protection Supervisor, Technical Services, P-2 Crash Truck, and Hazardous Materials. At that time,

Chanute Fire School had 16 instructors. MSgt Doug Knowles, TSgt Bobbitt, TSgt Godward, TSgt Walsh, SSgt Kolner, Mr. Moore, TSgt Gubertson, and SSgt Grey were lead instructors.

Either Lou or Hugh welcomed students to the supervisory course and the technical services course. Oftentimes, the students knew the instructors, and they renewed friendships. The passing rate for students was 95 percent. The school offered students remedial training after classes.

Chief Lou Garland often briefed the Air Force Fire Protection staff, the MAJCOMs, and dignitaries using 35mm slides, charts, transparencies, and 16mm film about school activities and goals from basic courses to advanced courses. Then, visitors toured the fire school.

In 1969, The Chanute Fire School presented a special program at the annual Fire Protection Conference at the Peabody Hotel, Memphis, Tennessee. The “Peabody” is where most fire chiefs made reservations. It’s the only hotel where mallards frolic every day in the water fountain in the middle of the lobby. At 5:00 p.m. the quacking begins, and the red carpet is rolled out from the elevator to the fountain. The ducks waddle to the elevator and are taken upstairs for the night, only to return the next morning for the same ritual. Visitors come from everywhere to see and enjoy the ducks.

That year, Warrant Officer Garland, assisted by SMSgt Hugh Akers and SMSgt T. Z. Sherrill, addressed conferees on goals of the Fire School, its activities, and progress in the fire protection field. Hugh spoke on the need for a prefix to the Air Force Specialty Code and offered a Fire Prevention Technician Course. The school staff felt women entering fire protection could serve well in less strenuous positions.

At that conference, Chief Matlock from Langley AFB, Virginia, had a stainless steel 2½-gallon pressurized fire extinguisher mounted on two wheels. Instead of water, it held vodka. Turn the spigot, and vodka flowed to everyone’s delight. Chief Matlock was seen on Memphis streets wheeling his extinguisher. People thought it was a demonstrator.



Fire School Training



Graduating class at Langley AFB, Virginia, 1947. Chief Paul Odell was the lead instructor.

Hugh Akers left the Chanute Fire School for Cam Rahn Bay, Vietnam, in July 1969. One year later, he transferred to Maxwell AFB, Alabama, as the Deputy Fire Chief. Seven months later, he was selected to serve on the USAF Aircraft Crash Rescue Field Assistance and Evaluation Team (ACRFAET). At first, the team operated from Wright-Patterson AFB, Ohio, then from Tyndall AFB, Florida. “I believe the teams did some good in their three-year assignment,” Chief Akers said.

In March 1971, the USAF Chief of Staff personally directed that the ACRFAET be formed to ensure that Air Force fire fighting units were updated on new techniques. The ACRFAET visited air bases, and fire chiefs trembled.

Perspective by Chief George Hall, of the 3330th Technical Training Wing, Chanute Technical Training Center, Chanute AFB, Illinois, 1975-1981. After CWO Louis F. Garland retired on August 31, 1975, Major Robert L. Gott assumed leadership of the school. As a former member of the ACRFAET, Major Gott possessed a wealth of knowledge in fire service operations. He pursued Chief Garland’s vision to continue quality fire service training for the next five years. Next came Major Sippial, who refined goals set by CWO Garland and Major Gott.

Those school activities took place from January 1975 to August 1981. Courses were realigned and revised, the instructor staff was improved, and courses from federal, state, and local fire training programs were included.

The school was structured into three instructional groupings and a curricula development section. These groupings included the basic, advanced, and special supplemental courses. The three instructional groups were responsible for academic and proficiency training, while the curricula development section was responsible for writing and publishing Career Development Courses (CDCs).

The Basic Fire Fighter Course consisted of five blocks of instruction. These were composed of academic and proficiency training involving publications, structural fire-fighting techniques, vehicle operations, and aircraft crash rescue and fire fighting. It was a two-month course. The Basic Course was under the supervision of SMSgt Ralph McHenry, who later became the Fire Chief at Nellis, AFB, Nevada, and Whiteman AFB, Missouri.

The advanced courses were divided into two distinct sections. These included five-level or specialist courses and a seven-level section focusing on management training and advanced skills.

MSgt Kenneth Ploense supervised the five-level course. It included: Fire Fighter Rescueman, A/S32P-2 Vehicle Operator, Installed Fire Protection Systems, A/S32P-4 Vehicle Operator, and Fire Protection Munitions.

MSgt Bob Vires, later Fire Chief at Barksdale AFB, Louisiana, supervised the seven-level section. The courses included Fire Protection Supervisor, Fire Prevention Inspector, and Fire Investigations.

MSgt George Hall, now retired and employed at the Air Force Civil Engineer Support Agency, Tyndall AFB, Florida, supervised the Special Supplemental Courses. Courses included: Base Fire Marshal's Course, Mobile Vehicle Travel Teams, Air Force Reserve/Air National Guard Fire Fighting Command and Control for Fire Chiefs, and Special Projects and Foreign Programs.



Fire fighting school at Shaw AFB, South Carolina, 1949. The Class 155 crash truck in operation is discharging high-pressure water fog on a training fire. Chief Paul Odell conducted the training for military fire fighters.

The school's reputation was world renown. Congressmen, governors, general officers, and foreign dignitaries all visited the school for briefings and tours. Its instructional staff was unparalleled for its knowledge and professionalism, and they interfaced with the National Fire Protection Association, Underwriter's Laboratories, Factory Mutual, and other military services on a daily bases. The school became the first agency to coordinate with the Illinois Commission on Fire Protection Standards. This ultimately led to the State of Illinois developing professional qualification standards for fire fighters, which led to the development of NFPA Standard 101.

Major General Norma E. Brown, Commander, Chanutte Technical Training Center, staunchly supported the Chanutte Fire School. She considered the school faculty the unofficial "Chanutte

Ambassadors.” She came to the school and met students from the basic course through the fire chief and fire marshal courses.

Upon relocation of the school to Goodfellow AFB, Texas, the Fire Chief’s Simulator was designated “Norma E. Brown.” It was the school’s way of recognizing the many contributions General Brown made to quality training.

The Fire School possessed several “premier performers.” The staff participated in every base recognition program and was very active in community affairs. The staff garnered awards in every category. These included: Instructor of the Month, Quarter, and Year, and Senior Noncommissioned Officer of the Month, Quarter, and Year. They were nominated for such prestigious awards as the Lance P. Sijan Award, the Thomas D. White Award, and the Twelve Outstanding Airmen of the Year. Many of the young faculty members who arrived at Chanute during 1970-1981 as staff sergeants and technical sergeants would gain promotions to rank of chief master sergeant. Future Chiefs from this era were: Mike Boley, Ralph McHenry, George Hall, Paul Sutphin, D. J. Keen, Ed Doughty, Bryce Mason, Rocky Cook, Wayne Kee, Bill Lonsford, Gerald Wimberly, Bill Thompson, Randy Wilke, Larry Mundy, Ray Wuilliez, Billy Norman, Robert Vires, Kenneth Ploense, Gary Merrill, Richard Duncan, Richard Marshal, Steve Haidinger, Donald Warner and Bob Throwbridge.

The fire school introduced more programs to improve fire fighting capabilities. In the late 1970s, the P-15 Aircraft Crash Fire Fighting and Rescue Vehicle entered the inventory. For three years, the school provided formal mobile training at 58 locations throughout the world.

The Chanute alumni of 1975-1981 were professional instructors dedicated to excellence who followed the visions of CWO Lou Garland. Their efforts directly impacted the professional fire services enjoyed around the world.

Louis F. Garland Fire Training Academy, Goodfellow AFB, Texas. Chief Garland was the premier training officer. Lou developed the blueprints for the fire protection career field and training systems in the 1960s. He was an Air Force leader in fire protection training and standards. In the fall of 1967, in conjunction with the USAF, he made a training film to illustrate new techniques for fighting aircraft crash fires. To make it realistic, a B-52 burned on an inactive runway as crash trucks attacked the 10,000-gallon blaze. A large team of Air Force moviemakers and eventually camera crews from the nation’s three national TV networks set up and shot the event. The concept was called “Mass Application.”



Louis F. Garland Fire Training Academy at Goodfellow AFB, San Angelo, Texas.

Always dedicated to excellence, Chief Garland introduced crash fire-fighting agents and tactics that today are the standard for both military and municipal fire departments the world over. He was the creator of the fire protection badge, which is worn proudly by all USAF Fire Fighters. Lou led Air Force Fire Protection to the pinnacle of distinction we now enjoy. Professionalism was his hallmark.

Chief Garland graduated 25,000 fire fighters during his tenure at Chanute. "His dedicated team of instructors uplifted an entire career field and bonded the free world's most complete fire protection technology institute," an Air Force historian said.

After a 33-year Air Force career, Chief Garland retired on August 31, 1975. Gloria and Lou were born and raised in California's mountains. When Lou retired, the mountains called them home. Lou died November 28, 1992. To be sure, he will be remembered by future generations of fire fighters.

On August 18, 1995, Goodfellow AFB, San Angelo, Texas became the permanent home for Air Force fire training. The new facility was dedicated as the Louis F. Garland Fire Training Academy.

Fire Fighter Protective Clothing. At the beginning, fire fighters used bunker non-fire-resistant clothing. Fire chiefs were often undecided on specific clothing for their fire fighters. Some favored double-breasted, while others single-breasted, coats. Warner Robins Air Materiel Area (AMA) was responsible for all fire fighter protective clothing and received countless unsatisfactory reports from people who considered themselves experts. Then, the type A1A hood replaced the helmet. The fire fighters' complaints centered on inability to talk through the facepiece and poor visibility. The facepiece was redesigned to sustain heat without cracking. Plexiglas was the only available material to take moderate heat. Laminated glass weighed too much. Asbestos gloves were used but not considered advisable. Leather gauntlet gloves with wool inserts were recommended and became standard wear.

Newer aluminized clothing for aircraft fire fighters reflected 97 percent of infrared rays, but it was inflexible because it fit over the bunker clothing. Warner Robins undertook extended development of the crash entry suit, withstanding 2,500 degrees, beginning in 1945.

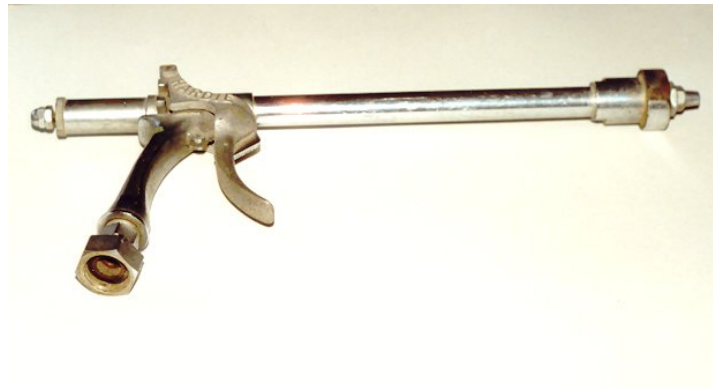
Footwear. The boot used for aircraft fire fighting was unsuitable, because it had very poor insulation. The inferior product was replaced by a sealed insulated boot with a rubber shell with inner linings of alpaca. Fire fighters improvised. They cut hip boots at the knees. The trousers had snapped liners, and so did coats. The basic structural fire-fighting helmet was later fitted with a plastic face shield.

Gloves. Early on, fire fighters experimented with gloves. Heavy government issue (GI) woolen socks, snipped at the toes, made excellent inserts for gauntlet gloves. The inserts reached to the elbows. Fire fighter experimentation often led to more tests and ideas adopted by Air Force. One retired fire chief summed it up: "A bit of Research and Development (R&D) long before Joe Walker."

Anticipating burn injuries, an ambulance attended all training fires. The Class 155 crash truck's high-pressure handlines and turrets sprayed water fog on aircraft. Hand signals directed fire fighters in the fire area. The Class 155 Continental pump engine with straight exhaust drowned out radio communication.

Fire tactics for exterior as well as interior large-frame aircraft fires were the same. After the first major fire involving a B-36 bomber at Carswell AFB, Texas, Chief Otis E. Tinkle changed fire tactics. He ordered fire fighters to stay on crash trucks until the Class 155 turrets and Class 150 carbon dioxide booms knocked down the fire. "Why put fire fighters on the ground with ¾-inch fire hose when we can't overpower the fire with large turrets?" he said. In reality, that introduced mass application of foam

extinguishing agent for large-frame aircraft fires. Where were the sidewalk or runway fire chiefs when B-36s crashed and burned?



A relic of the past. The Hardie Nozzle used to spray high-pressure water fog weighed 9 pounds. (Photo courtesy of Assistant Chief Carl Vaughn, Seymour Johnson AFB, Goldsboro, North Carolina)

Chief Walter Sherrill was considered one of the most competent operational fire officers. “Aim with water and shoot with foam, and see how well fire eats foam,” he’d say. In the early days of aircraft fire fighting, a few fire chiefs crashed trying to be super chiefs. They simply forgot tactics. Chief Sherrill, a gifted training officer, taught by magic using plain words and plain talk.

“It’s bad enough for an aircraft to burn; and it’s worse to see someone burn. You see and feel it for life,” Chief Sherrill said.

Military Fire Fighter Supervisor. The Lowry AFB 57170 Fire Fighter Supervisory Course had flaws. Students failed to meet prerequisites. They lacked experience in the field; therefore, they had difficulty in the classroom. The civilian fire chiefs and assistant fire chiefs didn’t take the time to groom the senior military supervisors to perform with confidence at the highest level in fire protection. A small segment of civilian leadership felt threatened by military supervisors. Others were critical of the 57170 supervisory course as being too weak. The fact remained that every student graduated, whether qualified or not.

“The supervisors sent to the advanced course graduated. You sent them; we graduated them!” Chief Instructor Goldie Simmons said. On one occasion, a civilian student came to the school unable to read or write. “Are fire chiefs screening and sending their best supervisors to the school?” Chief Simmons asked.

“I have never seen a course of instruction worth anything where students didn’t fail,” Chief M. C. Howe, Air Materiel Command said. “Why should our government spend money on failure?”

“The command selected candidates to the supervisory course; therefore, the student should have been qualified,” Chief Simmons replied. During interview, I learned that the Squadron First Sergeant had selected a student. That’s absolutely ridiculous. Keep in mind, the MAJCOMs controlled quotas, and commands allocated quotas to their bases to screen and select the most qualified candidates for the formal training school.

“It was apparent that high-level meetings were attended by predominantly civilian fire officers. Where were the top military noncommissioned officers?” Lieutenant Colonel Bankert asked. The civilian

leaders were responsible to train others in their departments. It can't be passed on to others! The Air Force mission is training. The Air Force has two problems: training and personnel.

Ninety percent of student questionnaires found the 57170 supervisory course useful. The graduates, however, offered no recommendations to improve the course.

Training was and is a progressive thing. Graduates of flying schools don't walk out of flying school and step into a B-36 and take off.

This chapter closes posing the rhetorical question, when is training enough? Never enough!

The Air Force unquestionably led in developing fire tactics at military bases as well as municipal airports. Lessons learned are too numerous to list, but review or critique of department operation enhances department efficiency. In short, never make the same mistake twice. Fire Department training is an integral part of department effectiveness and definitely an everlasting challenge to succeed at fires.



Aircraft Crash Fire Fighting School, Shaw AFB, South Carolina, spring of 1949. The school graduated 240 military fire fighters. Left to Right: Chief Tom Heffernan, Chief Jack Kearney, (Lieutenant unknown), Chief Paul Odell, Chief Lonnie Stevenson, and Chief Paul Cunningham.

CHAPTER 5

AIRCRAFT CRASH RESCUE TRUCKS

In the beginning, 1931 to be exact, the U. S. Army Air Corps researched and developed a specialized aircraft fire fighting vehicle using chemical, foam, and carbon dioxide. By 1935, mechanical foam replaced chemical foam. The first U. S. Army Air Corps Type 50 was later designated the Class 100.

The Class 100 Crash Truck. The “100” had a 375-gallon booster tank and a 100-gpm rotary pump. It was one of the first crash fire units developed for airfield use, weighing 16,500 pounds with a full load. The truck was adapted for dry-powder foam generator and 200 pounds of carbon dioxide (CO²) in four high-pressure cylinders and two spares. The truck had 100 feet of 1½-inch cotton, rubber-lined fire hose and a foam-producing nozzle. The truck also had electric hand lanterns, universal spanner wrenches, double female coupling, and reducing couplings.

Chief J.K. Schmidt, Eglin AFB, Florida, pioneered the first crash truck producing high-pressure water fog. Between 1940 and 1942, crash fire trucks similar to those developed by the military were procured for larger civilian airports. At the same time, the Mack Company tested a crash truck in the summer of 1943. It was the first time high-pressure fog at 600 psi was delivered from a 250-gpm pump. The truck had a 1,000-gallon tank and two turrets.



The first Air Force Aircraft Crash Rescue Truck, Engine 10, Rescue Company, MacDill AFB, Tampa, Florida, 1947-1959. Chief Frank Joseph built this unit on a half-ton Ford chassis. The elite rescue crew was credited with saving many aircraft crew members. Chief Lloyd W. Garner was crew chief of this specialized unit and received the Soldier's Medal, along with the rest of his crew, for rescuing a flight crew from a burning aircraft.

In 1942, fire trucks were centrally procured by requisition form and submitted to the Division Engineer of the appropriate Service Command. The Office of the Chief Engineer issued all types of motorized fire apparatus, structural pumpers, brush trucks, and crash trucks.

At Air Force bases, the aircraft flight line remains the most dangerous place to drive fire trucks. Heads-up driving is paramount, day or night. At all times, drivers face danger as fire trucks and airplanes occupy the same space during a flight line emergency. Before, the Air Force had one iron-clad safety rule to avoid fire truck and aircraft collision: whenever the control tower declared a ground or airborne emergency, all aircraft movement on the flight line stopped until all crash trucks reached their destination. Today, that rule seems to be ignored.

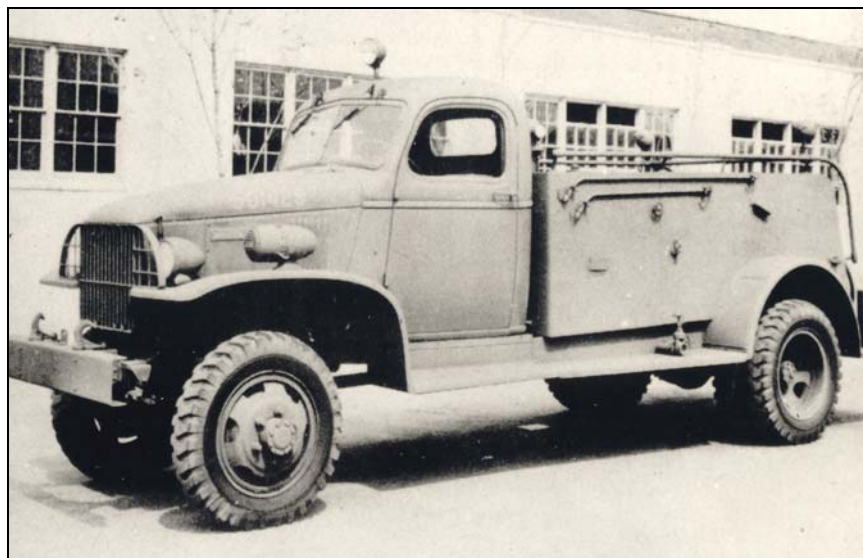
All crash truck drivers possessed special skills. The early crash trucks had no turn signals; bulb-type six-volt headlights had minimum lighting. The drivers often over drove their headlights at 35 mph. All crash trucks had manually-operated stick shift transmissions; drivers doubled-clutched all gear changes, up or down. They had to exercise caution not to miss a gear, for a missed shift could damage the transmission. Except for changing gears, drivers gripped the big nonpowered steering wheels to control their huge vehicles.

Most crash trucks were olive green during World War II and represented the first generation of crash trucks mass-produced. In Europe, a 2½-ton GMC 6x6 cargo truck was converted to a crash truck and equipped with CO² cylinders, a 500-gallon water tank, and a front-mounted W. S. Darley high-pressure pump that produced 100 gpm at 600 psi.



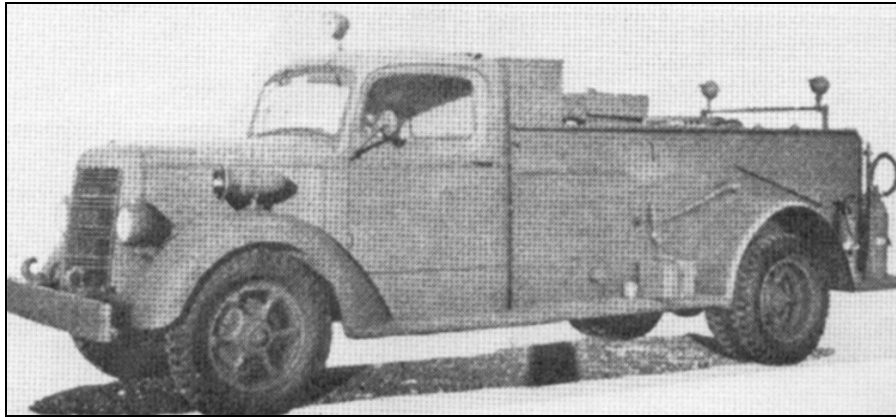
Class 100 Crash Truck.

The Class 110 Crash Truck. Next came the standard **Class 110 crash truck** similar to the Class 100, but assembled on a different chassis and without separate foam tank, foam solution being mixed directly into the water tank. The truck had a 100-gpm, centrifugal pump and a 250-gallon water tank.



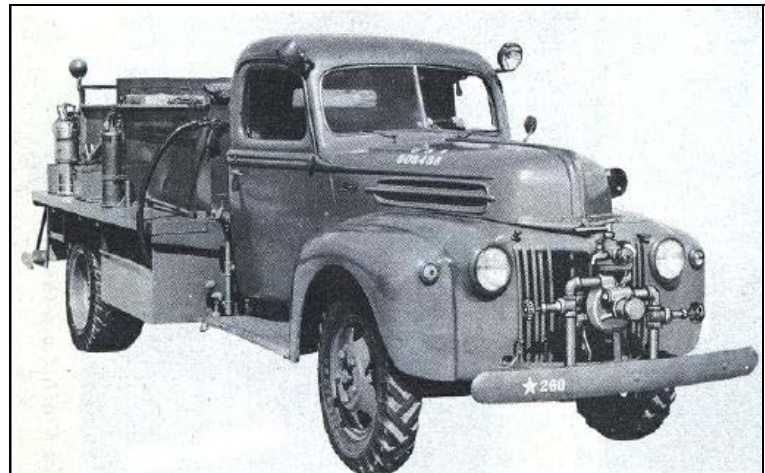
Class 110 truck.

About the same time, the Standard Class 125 crash truck joined the crash truck fleet, with a 60-gpm Hardie or Bean high-pressure pump, a 300-gallon water tank, and one 20-gallon foam solution tank. The “125” was mounted on a Dodge, Mack, or Ford half-ton chassis and had a mid-ship mounted piston pump. The truck had a four-man crew. Of course, the driver had to stop the vehicle to change it from road gear to pump mode using power takeoff. This operation made pressure available the moment hand linemen reached their fire fighting positions. The driver then left his seat after starting pump operation, rushed to the left side of the truck and adjusted the pressure throttle. The rescueman moved to the burning airplane as soon as fire fighters used their nozzles, cleared a path, and controlled the fire during rescue. The hand throttle was opened quickly by pressing on the center button and pulling. Pushing the throttle down with the palm of the hand shut it off.



Class 125 Crash Truck

The Class 135 Crash Fire Truck was another half-ton 4x2 commercial or Chevrolet 4x4 military chassis with a high-pressure, single-stage, W.S. Darley front-mounted, centrifugal 60- to 100-gpm pump with a 300-gallon water tank. Once again, the driver stopped and placed the truck transmission in neutral. The operator engaged the pump at the front of the truck. Although this truck, like the Class 125, had three handlines, the pump supplied only two ¾-inch hose lines using Bean, Myers, or Hardie nozzle. The third hose line was usually for protein foam application, using a five-gallon foam can, pickup tube, and Pyrene nozzle. An emergency cooling system offered supplemental engine cooling.



Class 150 truck.

Two larger crash trucks, the Class 155 and Class 150, were developed in 1942. The Class 155 crash truck, manufactured by Corbitt, Brockway, and Ward La France, was the largest high-pressure water truck in the Army Air Corps. Both crash trucks could fight fire on the move. All other crash trucks had to stop to engage the pumps.

The Class 150 Sterling Cardox Crash Truck, manufactured by REO and Sterling, had a six-cylinder Waukesha engine and weighed 24 tons. It had a 6x6 chassis and employed 6,000 pounds low-pressure carbon dioxide as its primary extinguishing agent. It also had a 500-gallon tank of premixed

foam solution, two foam hose lines with fixed foam nozzle on the top, radiator booms, and front ground sweep. The truck could empty in 58 seconds. The crew chief occupied the right seat in the cab. He operated all the fixed nozzles for foam and carbon dioxide from the cab, using pistol grip control. The



0-1 Cardox

top boom discharged 2,500 pounds of CO² per minute, while the radiator boom and ground sweep discharged half that amount. The driver placed the truck upwind and directly at the fire, often 15 feet from the fire's base. The overhead boom nozzle belched CO² as close to the center of the fire as possible. A short blast from the boom usually was enough to blanket a large area.

Approaching from each side of the fire area, playpipe hand linemen supplemented the boom operator's work by

knocking down edges of the fire and blanketing areas that the boom couldn't reach. When CO² gas started to drift off, foam was applied to hot surfaces to prevent flashbacks. The bayonet nozzle jammed through the plane's aluminum skin and flooded the aircraft interior with suffocating gas. The bayonet nozzleman had to be thoroughly familiar with all types of airplanes to avoid additional fires or explosions within the wing or fuselage.

The Sterling had a five-speed transmission and air brakes and was the fastest of all large crash trucks. The front air shocks gave it a smooth ride. Every fire fighter competed to drive this magnificent piece of equipment. The station chief or assistant fire chief usually selected the driver for this top-heavy truck. It was imperative that this truck arrive first at the aircraft fire. The tactic was to attack the fire with CO² followed by master foam streams from Class 155 crash trucks. In short, CO² knocked the fire down; the foam blanket prevented flashbacks.

On one occasion during a live-fire training exercise at Davis-Monthan AFB, Arizona, the driver wrongfully positioned his truck against the wind. The CO² gas entered the engine compartment and stalled the engine, fire engulfed the truck, and the driver died from burns. The Sterling had a transmission with overdrive making it faster than the Reo.

The Class 155 Crash Fire Truck. Corbitt, Ward La France, and Brockway manufactured the largest high-pressure water truck in the Army Air Corps. The "155" had a 6x6 (six-wheel drive) unit with a gross weight of 38,000 pounds when fully loaded with 1,000 gallons of water. The maximum pump pressure was 600 psi, and the pump capacity was 250 gpm when two turrets and handlines were in operation.

The truck had a rear-mounted, two-stage, Hale Zey centrifugal pump with direct connection from an auxiliary Continental six-cylinder engine. This method of operation made the usual clutch and transmission commonly used on other smaller crash trucks unnecessary in the "155." Pressure control valves were found at the driver's seat and on the deck in front of the forward turret nozzle. The two movable, manually-operated turret nozzles changed from straight stream to fog by moving a small lever near the tip of the playpipe. The truck had three 100-foot high-pressure water handlines. These hose

lines were located on each side and in the open “tunnel” compartment behind the driver’s cab. The ¾-inch hoses were loaded in figure 8 configuration. The operational success of the Class 155 centered on the turret operators. As soon as the truck got within range of the aircraft fire, turret streams blasted a rescue path. The truck’s broadside position was upwind of the fire and at the most advantageous position for rescue.



Class 155 Crash Truck



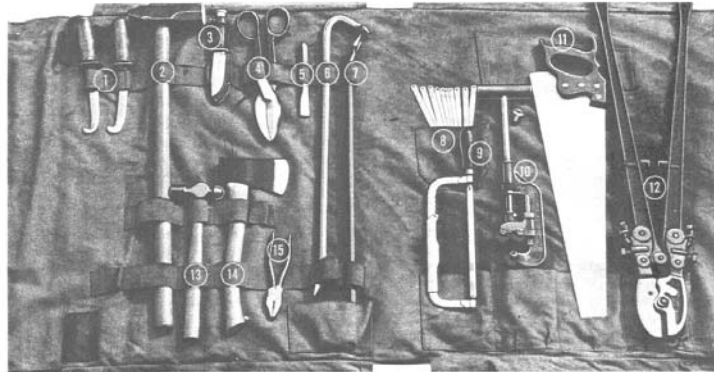
-Bunker coat



-Asbestos hood

By 1946, the Class 155 was modified to deliver protein foam, affording greater protection to fire fighters as well as aircraft crew members. The introduction of large foam streams meant more effective control and extinguishment of the fire.

The Crash Kit, one on every crash truck, 1946. The kit included rescue knife, sledge hammer, hunting knife, tinner’s snips, cold chisel, gooseneck wrecking bar, offset wrecking bar, hack saw blades, hack saw, pipe cutters, wood and metal saw, bolt clipper, ball peen hammer, axe, and lineman’s pliers all wrapped in a canvas roll.



-Crash kit includes: (1) rescue knife; (2) sledge hammer; (3) hunting knife; (4) tinner’s snip; (5) cold chisel; (6) gooseneck wrecking bar; (7) offset wrecking bar; (8) hack saw blades; (9) hack saw; (10) pipe cutter; (11) wood and metal saw; (12) bolt clipper; (13) ball peen hammer; (14) axe; (15) lineman’s pliers.

The REO Speed Wagon, A Tribute to Chief “Goldie” Simmons. Assistant Fire Chief “Golden” Simmons purchased a Model F, 1929 REO Speedwagon from the Cedaredge Colorado Volunteer Fire Department in 1963. Chief Simmons restored the classic chemical fire engine for his Junior Fire Fighter’s program at the Air Force Academy.

“Golden” loaned the REO to the Academy for air base annual fire prevention week activities, parades, and static displays.

After Chief Simmons’ death on October 1, 1991, the speedwagon was sheltered in the Simmons’ backyard, where it rotted.

Mrs. Frances Simmons found a home for the REO. In 1996, she gave the speedwagon another life by signing the title over to the U. S. Air Force Academy Fire Department. The REO was given a new home at the base fire department. At once, the fire fighters disassembled the truck, recorded all truck parts, and began a complete restoration project. James Rasmussen in Burlington, Wisconsin, provided the owner’s manual. The six-cylinder inline Gold Crown engine has 268 cubic inches (1,600 cc) and produces 47 horsepower. The fire fighters completely overhauled the engine.

At the 1997 Annual Fire Fighters Reunion and picnic, Mrs. Simmons, her sons, daughters, and grandchildren, and other family members witnessed the unveiling of the Academy’s new Engine 29. This magnificent piece of fire apparatus is now entered in parades, fire department musters, Academy’s open houses, and static displays throughout the Colorado Springs community. All this was done as fire department tradition, in remembrance of the golden years of fire protection and in the name of “Goldie” and Mrs. Frances Simmons, who passed away November 19, 1999.

0-11 Crash Truck. In early 1950, the 0-11 Beiderman Crash Truck Company made this truck with twin turrets, 1,100 gallons of water plus 400 gallons of foam, and an enclosed crew cab. The Air Force contracted with the Beiderman Company to build twenty-four 0-11 crash trucks for SAC. Because of overwhelming maintenance and operational cost, the Air Force stopped production.



The 0-11 Beiderman truck.



0-12 Crash Truck.

0-12 Crash Truck. In March 1955, Marmon-Herrington Company of Indianapolis, Indiana, developed the 0-12 crash truck for use in SAC. The truck held 2½ times more foam than the 0-11A. With a capacity of 2,500 gallons of foam/water and 85 gallons of CB, the 0-12 could discharge at the rate of 1,500 gpm. The latter figure was based on mixing one part foam with nine parts water.

From a stationary position, the O-12 could attain 55 mph in 50 seconds. Top speed for the 65,000-pound vehicle was 65 mph. It carried a seven-man crew and was fueled from a 175-gallon gas tank. The O-12 had an 810-horsepower, V-8 air-cooled engine with supercharger, while the pump was equipped with a 500-horsepower engine. Every MAJCOM observed the demonstration at the factory. Only three O-12s were built, and they were never put into service.

There was also an experimental MB-8 crash vehicle tested for the harsh Alaskan environment and extremely rough terrain in 1947. A dejected Captain Bob Vreeland, Fire Marshal at Ladd AFB, Fairbanks, Alaska, is pictured in the driver's seat. The strange, full-track vehicle with two Class 155 turrets mounted topside resembled a Sherman Tank. Captain Vreeland and Mr. Ray Smith, Wright-Patterson AFB, Dayton, Ohio, tested the vehicle at Ladd AFB. The poor test results stopped further development. "We kept a steel cable connected to the vehicle and a carbon tetrachloride fire extinguisher at truck side. It could quit or catch fire any time," Bob said.

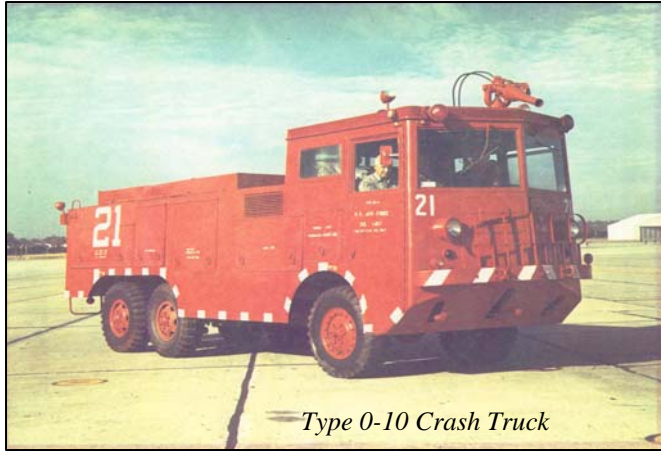


Testing the M-8 Fire Vehicle, Ladd AFB, Alaska 1947



Photo of Alaska Track Vehicle.

The **Type 0-10, 0-11A/B, R-2/A, and 0-6 crash trucks** were the second-generation crash fire trucks with aluminum ladders. These crash trucks were air-transportable. For the first time, the 0-10 and 0-11A trucks had Continental air-cooled pump engines. From the onset, the 0-10 had mechanical flaws, and maintenance upkeep worsened upon delivery in 1951. Warner Robins AMA contracted an American La France technical representative to help keep the fleet operational. In eight months, 169 unsatisfactory reports were submitted on the 0-10 crash truck.



Type 0-10 Crash Truck

Some 0-10s were inoperative 79 percent of the time for broken axles and electrical and hydraulic failures. The representative also assisted with the Marmon-Herrington 0-10 crash truck. The contract stipulated maintenance, not fire fighting operations. Some bases had 0-10s out of service for parts up to one year. Technical Orders and spare parts were unavailable at the time crash trucks were delivered to Air Force bases. “It was like having a fire truck with no fuel in the tank,” Chief Tinkle said.

Marmon-Herrington and American La France manufactured 1,058 Type 0-10s. The Air Force Fire School at Lowry AFB, Colorado, had six new 0-10s. Before the first training class for fire chiefs began, all were unserviceable because of electrical and hydraulic failures. Spare parts didn’t come with the vehicle.



Type 0-11A Crash Truck

The Type 0-11A crash truck, manufactured by American La France, was a larger version of the 0-10. It was tested at Ladd AFB, Fairbanks, Alaska. It was immobilized in 21 inches of snow. Eight hundred and ninety 0-11As were built for the Air Force. The upkeep was costly, but enough parts were available to keep the fleet serviceable. To offset 0-11A “downtime,” the Air Force contracted with the American La France technical representative. He visited bases and educated mechanics, as well as fire fighters, and established direct delivery of parts from the factory. The rear tires on the 0-11A lasted 250 miles. The front tires scabbed, the front wheels vibrated, and it occasionally snapped bolts to the steering mechanism.

American La France shouldn’t be blamed for the 0-10 or 0-11A. The Air Force was to blame. The Air Force provided the specifications for both vehicles. American La France built the vehicles to Air Force specifications. After all, American La France manufactured quality fire engines from 1832 to 1972.



Type 0-11B Crash Truck

R-2/A Rescue Truck. The truck was built by Marmon-Herrington on a 1959 Ford chassis.



R-2

Type 0-1 Cardox. The 0-6 was the last Air Force crash truck to use carbon dioxide



R-2A

The Type 0-6 Cardox crash truck had 4,000 pounds of carbon dioxide. The 0-6 replaced the



Type 0-6 Crash Truck

Studies of miles driven compared to out-of-service time astonished vehicle maintenance officers and infuriated fire chiefs. With the recurring maintenance problem with crash trucks, one command had its fire chiefs submit monthly reports showing miles driven versus in-commission rate. For some unexplained reason, Chief Larry Donovan, Lockbourne AFB, Ohio, scored the highest of 57 command bases. He was asked, "Larry, why do you have the most impressive command record?"

"My fire fighters drive to emergencies and back up to the fire station. Miles don't register going backwards." he replied.



0-12 Crash Truck

The Air Force had considered a **Type 0-12 crash truck** to protect heavy bomber and transport aircraft in 1958. The truck had a 2,200-gallon water tank on an 8x8 chassis. Chief Bob Vreeland at HQ SAC vehemently opposed the crash truck. The program died.

Patterson was less than satisfactory because of low priority. The development wasn't done much better.

P-2 and P-4 Crash Trucks. The third-generation crash trucks were the P-2 FWD, 8x8 chassis, and P-4 Oshkosh crash trucks. The first P-2 crash truck, delivered in 1962, had two turrets, two six-cylinder gasoline Continental Engines, a 1,400-gpm pump, a 2,300-gallon water tank, and a 200-gallon foam



P-2 Crash Truck

P-4 Crash Truck



tank. The remanufactured P-2s had two V-8 Detroit diesel engines and produced enormous torque and acceleration. On occasion, power twisted the drive shaft. This was the introduction of diesel engines for crash trucks, one improvement long overdue. In fact, the truck had too much speed to stop with the original brakes.

The P-4, with its Cummings diesel engine, was a superior crash truck with excellent maneuverability, acceleration, and operational simplicity. The 1,500-gallon water tank and 180-gallon foam tank made it a quick attack vehicle. The Feecon turrets, a masterful design, enhanced the operational fire fighting capability, especially approaching crashed aircraft fires. The automatic “sweeping” effects of turrets resulted in more effective application of extinguishing agent on the fire.

P-15 and P-23 Crash Trucks. The fourth-generation crash trucks were the P-15 and P-23. The P-15 large capacity crash truck had a 6,000-gallon water tank and a 515-gallon foam tank. Oshkosh produced 80 P-15s in 1978. The P-23 crash truck arrived in 1994 and later replaced the P-2 and, eventually, the P-15.



Tom Kelly's photo of the 1979 Oshkosh P-15 at Seymour Johnson AFB near Goldsboro, N.C. With a gross weight of 130,860 lbs, the P-15 is 542 inches in length, 163½ inches high, and 122 inches wide. Foam or water discharge capacity is 2,400 gpm.



P-23

Crash Fire Truck Reliability. The first- and second-generation crash trucks deteriorated in the fire station, as fire chiefs became unnerved by the dogmatic situation. Air Force mechanics, mostly military, more often inexperienced, attempted fire truck repair.

While airplanes flew, at least one crash truck was in the repair shop. At first, all fire truck repairs were done at the base vehicle maintenance shop, while at other times mechanics repaired fire trucks in the fire station. The fire chiefs preferred mechanics at the fire station, but the base vehicle maintenance officer decided where his mechanics repaired fire trucks. The Air Force got “hot” and published a regulation concerning in-commission rates whereby everyone got involved when the flying mission could not be supported. That prompted the commander’s immediate action and displeased the base vehicle maintenance officer. Besides, the fire chiefs wanted fire trucks to have the same priority as aircraft parts.

Crash fire fighting trucks from the very beginning were a maintenance nightmare, lessened somewhat by crash trucks later being fitted with diesel engines. For one thing, all crash trucks responded to more aircraft emergencies as compared to structural fire responses. No matter if the emergency was a T-6 trainer or a B-17 Flying Fortress, all crash trucks “rolled.” Fire chiefs thought it was the thing to do—send everything! Another thing, structural fire apparatus were less complicated, thus much easier to

maintain. Also, when the Air Force peaked with bombers and fighters during the Cold War, crash fire trucks performed 24-hour runway standby observing flying and flight line activity to comply with an Air Force regulation. The directive dictated that “standby” be at the runway and not at the crash fire station. A crash truck on lengthy runway standby idled and wore out its gasoline engine and tired fire fighters. Furthermore, crash trucks stood by at weapon uploads/downloads and abnormal aircraft refueling. In short, crash trucks were dispatched under the umbrella of “protection” to comply with an outdated 30-year-old regulation. No one dared question the authority. Back then, it wasn’t wise to question a higher headquarters’ directive. It came from the top down, not the bottom up

Finally, enough fire chiefs asked “why” about the manner in which crash trucks were being used to effect change. Thanks to the late Doug Knowles, HQ USAF Fire Protection introduced selective crash fire truck response to aircraft emergencies. By dispatching fewer trucks to small aircraft emergencies versus sending more crash trucks to larger aircraft emergencies, departments reduced the total number of responses. At the same time, crash trucks quit chasing emergency aircraft down the runway. Yes, better management of the crash fire truck fleet resulted in better protection of the flying mission.

Fire Fighter Protective Clothing. The demise of the bunker coat and hip boots brought conventional clothing for fire fighter protection. Some standard fire fighters’ helmets were so designed that they could be reversed to give an added degree of face protection. After the conventional clothing came, the aluminized fire fighter clothing consisted of proximity hood, coat, trouser, and mitten, all with superior heat reflection properties over the normal “turn out” clothing, which enabled fire fighters closer access to fires.

Chief Paul Odell Tested Asbestos Suit. A Canadian fire fighter donned the asbestos suit at Fort St. John, Canada, in 1943, and entered the fire, protected by high-pressure water fog from a Class 125 crash truck.



The moisture penetrated the suit; the asbestos tattered and exposed the fire fighter to serious burns. The asbestos suit failed the test. Chief

Odell submitted an unsatisfactory report but never got an answer. The Air Force, however, abandoned asbestos suits for fire fighters.



Mobile Crash Truck Radio. The AN/VRC-4 radio was the first standard radio used in Air Force fire vehicles. It had a transmitter, receiver, and a power pack the size of a footlocker. The radio had five selected frequencies with one channel dedicated to observation planes, often used for off-base aircraft crashes. The radio had limited range.

Chief Paul Odell is shown in the photos below performing a check of the new radio with his staff at the fire station at Greenville AFB, South Carolina, in 1946.



Aircraft Rescue and Fire Fighting (ARFF) Turrets, by Pioneer James F. O'Regan. Turrets are the first line of attack for ARFF vehicles in aircraft crash fire incidents. Turrets for use on ARFF vehicles weren't developed until the end of World War II. Most ARFF vehicles used during World War II were equipped with high-pressure water fog handlines. Near the end of the war, the U.S. Navy struggled to save aircraft carriers from suicide Kamikaze attacks resulting in large gasoline spill fires. The Navy conducted large-scale simulated hangar and flight deck spill fires and introduced large capacity (200 and 500 gpm) foam and fire fighting fog foam (FFF) nozzles. These nozzles proved to be far more effective than the water fog nozzles previously used. These nozzles were first used on turrets for the first post-war vehicles developed for aircraft rescue and fire fighting.

The first ARFF vehicles designed specifically for use at civil airports in the United States were used at LaGuardia and Newark Airports, Logan, and Washington National. Other civil airports soon followed with similar ARFF vehicles. These vehicles were built on a Walters four-wheel drive chassis and fabricated by the Maxim Motor Company of Middleboro, Massachusetts. The turrets used on these vehicles were two water monitors equipped with 200-gpm Rockwood FFF nozzles earlier developed for the U.S. Navy.

These nozzles were fog nozzles with an attachment ring to which a foam shaper tube was attached to produce a straight stream. The shaper tube was replaced with a coarse metal screen to produce foam.

The first complete foam turret designed specifically for ARFF vehicles was developed to meet a specification issued by Wright-Patterson AFB, Dayton, Ohio, for a radically new vehicle to provide aircraft rescue and fire fighting for the new United States Air Force. The vehicle was the Type 0-10. **Ray Smith** and **Marvin Tyler**, of the Air Force, wrote the specifications! Howard Freeman and Fran Johnson, Rockwood Sprinkler Company, designed the turret. The discharge nozzle was similar to the Navy FFF 200-gpm nozzle. It had an indexing mechanism that permitted the turret operator to switch from a straight foam stream to fog foam and to an intermediate stream simply by moving an indexing lever. The turret was hydraulically powered with a "joy stick" control in the cab. The control was later modified to a point and arrow device with mechanical position follow up.

The 1950s and the 1960s were the era of protein foam as the primary ARFF extinguishing agent. In the 1950s the NRL (Naval Research Laboratory) team of **Dick Tuve**, **Henry Peterson**, and **Jack Jablonsky** ran a series of fire tests to determine optimum foam characteristics for ARFF vehicles. Their conclusions indicated that protein foam for optimum results should have an expansion of about 10 to 25 percent and drainage time of at least 20 minutes. These characteristics were well above those obtainable

with the FFF type nozzles then in general use. To get the foam characteristics that the Navy wanted, they turned to **Al Krulee** and the Cardox Company, which offered a foam pump system that sucked air into the pump suction and dynamically mixed air, water, and foam concentrate in the pump. The expanded foam was pushed through the piping and discharged through a simple, manually-operated turret. British Pyrene developed a system that blew air under pressure into the piping to produce characteristics similar to the Cardox system. The British and Canadian Armed Forces used this system briefly. The foam produced by the Cardox system and the Pyrene blower system was expanded 10-12 times and resembled shaving cream being discharged from a pressurized can.

Not everyone in the industry agreed that the industry should give up the use of conventional pumps and aspirating foam turrets. The NRL data, however, did stimulate the design of aspirating foam turrets with substantially better foam characteristics approaching 10 to 1 expansion and 20-minute, 25 percent drainage times. During this era, **John Gagliardo**, working for Rockwood and later Feecon, designed most of the turrets used by the U.S. Air Force, including the Type 0-11A/B, the Navy MB-4, the Type 0-12, the P-2, and P-4. Not only did these turrets have much improved foam characteristics, but they also had a simplified servo-type control column for more exact turret aiming. Front-bumper turrets were developed for the first time for the Type 0-12. **Charley Lindsay** of American La France developed the first aspirating turret nozzle with dispersal plates for producing dispersal pattern foam for the La France Foam Queen. This feature was promptly dubbed the “Blabbermouth.” In Europe companies such as **Chubb, Bergomi, and Sides** developed very large hydraulically-powered turrets with unusually long large-diameter foam barrels that produced excellent range and high-quality foam. Some turret flow rates reached 1,500 gpm.

In the 1960s the NRL team of **Tuve, Peterson, and Jablonsky** turned its attention to dual-agent systems using dry chemical and foam. Looking for more compatible foam, and working with the 3M Company, AFFF was developed.

Initially, AFFF was used only as a dry chemical compatible foam to be used on light rescue vehicles with dual-agent handline nozzles. However, as AFFF improved and large-scale fire tests showed spectacular results, it became obvious that AFFF was destined to replace protein foam as the agent of choice, at least in the United States.

Fire tests in the 1970s at China Lake Naval Air Station by NRL and USAF researchers convinced the U.S. military to abandon protein foam and to switch to AFFF. **Larry Krasner** of Factory Mutual Research was a consultant at the China Lake test. Tests by **George Geyer** for the FAS (Federation of American Scientists) and NAFEC convinced NFPA 403 that AFFF should have a one-third advantage over protein foam. The switch to AFFF as the preferred prime agent had a profound impact on the design of ARFF turrets. While AFFF could be discharged through protein foam barrels, the expansion was too high to obtain the desired stream range. This problem was corrected initially by switching to smaller diameter foam barrels. However, as AFFF concentrates were improved by their manufacturers, users switched from aspirating nozzles on ARFF turrets to adjustable pattern non-air aspirating nozzles. With this change in discharge nozzles, many new turret innovations and simplifications were introduced. **John Gagliardo** at Feecon developed a non-air aspirating turret nozzle tip that produced a flat oval dispersed pattern to provide better ground coverage and greater visibility for fire fighters applying the agent. **George Holmbert** of the New York-New Jersey (NY-NJ) Port Authority designed a unique point aim hydraulic control system with hydraulic followup for their rapid intervention vehicles in the early 1970s. The turret was a twinned dry chemical/AFFF unit that was bumper mounted. The Oshkosh-built P-19 gave the U.S. Air Force its first vehicle designed from scratch for AFFF. The roof turret was an Akron manually-operated non-air aspirated turret. The bumper turret was a Feecon non-air aspirated unit with oscillating capabilities and was the first air-powered ARFF turret. The Air Force fire fighters loved it!

The development of power-efficient, small, direct current motors and reliable solid-state electronic controls brought electric turrets to ARFF vehicles. When the time came to replace the George Holmbert-designed rapid intervention vehicles at the NY-NJ Port Authority, Lieutenant Ron Striker called for a vehicle with a bumper-mounted, dual-agent turret with electric power, a point aim electronic control with position memory capabilities. E-1 built those vehicles, and the turrets were designed and built by Feecon.

Rosenbaur in Austria first built electric/electronic roof turrets. Feecon built the first electric/electronic turret in the U.S. Now, Akron also offers an electric/electronic roof turret. Over the years since World War II, the performance and reliability of ARFF turrets have steadily improved. The performance of ARFF turrets is inescapably tied to the effectiveness of the prime agent. While AFFF is widely accepted in the U.S. as the best agent available, in Great Britain, and some other European countries, Fluoro Protein or Film Forming Fluoro Protein Foams are preferred as prime extinguishing agents. Consequently, an ARFF turret designed for use with AFFF may not be suitable for another prime agent. Turret design is an ongoing consideration and one that never can be taken for granted. One of these days, environmental concerns will undoubtedly force the development of a new prime agent to replace AFFF. A new prime agent will bring with it the need for more fire testing and new turret development.

Airborne Fire Fighting Equipment. In 1957, the HH-43B “Huskie” helicopter emerged after a two-year study by the Air Force. The “chopper,” manufactured by Kaman Aircraft Corporation of Bloomfield, Connecticut, responded to off-base crashes in minimum time and had the advantage of not being restricted to roads or hampered by ground conditions. The airborne unit was tasked to suppress and control flames long enough to perform rescue. The fire suppression kit held 78.5 gallons of premixed foam and water. Nitrogen expelled the agent. The 1½-inch hose line was 150 feet long. The helicopter rotor wash, in conjunction with agent application, moved heat and flames away from fire fighters and downed aircraft crew members.



HH-43B Helicopter

At each air base, the HH-43B Detachment had two helicopters. The fire department trained and furnished the fire crew. Moron AB, Spain, had a detachment. Chief Roy Sellers trained and qualified the chopper fire crew. Between 1960 and 1964, Moron had the highest F-104 accident rate in the Air Force. Between Spaniards crashing F-86s and our pilots crashing F-104s, the “chopper” crew had lots of “air

time,” operating at on- and off-base crashes. The fire chief felt comfort knowing he had the capability to reach downed aircraft in minimum time and have the fire fighting and rescue personnel on site before motorized equipment could arrive.

The HH-43B was crucial during the Vietnam War, but after the war the whirlybird disappeared. As author of this book, I salute Roy Sellers, Hugh Akers, Jim Moran, Jim Norris, and all the other fire fighters who served on the HH-43B. You did the Air Force proud.

This chapter closes by saying that pioneers committed themselves to produce a specialized fire truck to combat aircraft fires. Before that time, motorized fire apparatus specifically designed to fight building fires were used to fight the earliest aircraft fires.

CHAPTER 6

WIVES AND WIDOWS

Pioneer fire chiefs achieved success. In contrast, their wives were often obscure. This book is heavy on pioneers, with less weight given to their wives who certainly earned inclusion.

As the book drafts and rewrites ended, a voice inside said, “What about wives and widows?” The book begins with retired fire chiefs, so why not end it with wives and widows?

The irony of all this is so strange, and regrettably sad perhaps. Wives accompanied their husbands to the combined annual Air Force fire conferences and the Fire Department Instructor’s Conferences. At that time, Memphis, Tennessee was renowned for great hospitality and fine food. The Air National Guard sponsored well-planned tours for the wives. The late Chief Stephens and his wife Aline of Memphis planned tours to Elvis Presley’s Graceland Mansion, St. Jude Children’s Research Hospital, historic homes, and the Memphis Queen Riverboat on the Mississippi. Any visit to Memphis would not be complete without a 90-minute sightseeing ride on the mighty Mississippi River.



Most recently, a \$92 million expansion and renovation of the Cook Convention Center (where these conferences were held) resulted in 80,000 square feet of exhibit and meeting space and a 28,000 square-foot ballroom. The project was completed in the Fall of 2002.

Later, the Fire Department Instructor's Conference moved to Kansas City for three years. At that point, fewer wives, as well as fire chiefs, supported annual conferences.

The author published a Retired Air Force Fire Chiefs' Quarterly Newsletter from June 1990 to April 2002. During that time, scores of World War II fire chiefs passed on. The newsletters interested widows; they got involved and kept in touch. They felt a part of the corporate family. They renewed old friendships. At the same time, they made new friends. They became members of the extended fire protection family.

The Peabody Hotel is well known for its world-famous duck march. For all its history and grand tradition, nothing is more symbolic of the Peabody than its ducks, which spend part of every day swimming in the Grand Lobby fountain. In the 1930s, General Manager Frank Schutt was returning from a weekend hunting trip to Arkansas. Schutt and his friends thought it would be humorous to place some of their live duck decoys (it was legal for hunters to use live decoys) in the Peabody fountain. Three small English call ducks were elected to be the guinea pigs, and the reaction was nothing short of enthusiastic. Since then, ducks have been in the fountain every day. In 1940, Bellman Edward Pembroke, formally a circus animal trainer, volunteered to care for the ducks and taught them to march into the lobby, initiating the famous "March." The late Mr. Pembroke was named Duckmaster and served in that position until 1991.

Today the mallards are raised by a local farmer and friend of the hotel. They live in the lavish "Duck Palace" on the Plantation Roof of the Peabody. Every day at 11 a.m., they are led by the Duckmaster down the elevator to the Italian Travertine marble fountain in the Grand Lobby. Red carpet is unrolled from the elevator to the fountain, and the ducks march to the tunes of John Philip Sousa. The fanfare is repeated at 5 p.m. when the ducks retire to their rooftop palace.



It has been said, "The Mississippi Delta begins in the lobby of the Peabody Hotel. If you stand near its marble fountain in the middle of the Lobby, you will see everybody who is anybody in the Delta."

Letters from Widows

I'm very happy being in Alabama, where I was born, after 34 years at Ft. Walton Beach, Florida. I still miss my fire fighter husband (Chief Bob Rushin) but I have a daughter and I'm enjoying being with her. My husband greatly influenced his son Robert who is now a licensed paramedic in Prattville, Alabama. I stay busy all the time. I have had diabetes for eight years. I survived breast cancer. I visit "Assisted Living Homes." I volunteer one day a week at Columbia Hospital in Montgomery, Alabama. Of course, I will always love and miss my fire fighter husband. He was so brave. I enjoy the quarterly newsletter so much. I hope some day you and Evelyn can come to see me. **Kathleen P. Rushin, Montgomery, Alabama**

Your letter was a double delight! The terrific piece on Charles Kuralt—with your putting all the pieces together so neatly. Isn't it wonderful when people take time to share their appreciation so beautifully. I'm so glad you're keeping the "Crash Fire Fighting" history in the foreground. I've had a terrible time getting 1998 closed out. I didn't file my tax papers properly and it took me weeks to get all the "stuff" in order. You said you would be on the book project for awhile. I mention that because I know I've some pictures that you will be glad to see. I will be busy in the "library" and locate the album of Ross' service photos. This is so much fun to have someone interested in what happened a long time ago. The newsletters showed me how close the brotherhood of fire fighters really is. Ross would have loved reading about his buddies. Ross' son, Bob, the one you talked about with Doug, and his wife came last year. I had collected some special "trophies" (memoirs) of Ross's career for them to take home. Your very special oil painting was most important. **Mrs. Aline Stephens, Colorado Springs, Colorado**

Chief Courchene, I have no excuse for not writing before now. Even though I have had a heart valve replaced and was in therapy for some time. I'm doing well now and surely thankful for extended time because of a gracious God. Good doctors and two wonderful daughters who have helped me through hard times. I'm still living in our home in Colorado Springs.

As you know we gave the old 1929 REO Speed Wagon fire truck to the Air Force Academy fire department. They have restored it to perfection. The department is so proud of it, and Golden would be, too.

I think you are doing a wonderful thing in keeping the retired fire chiefs informed and organized. Fire fighters are very special people. Golden was so pleased when our grandson, Jim Johnson, joined the Santa Fe, New Mexico Fire Department.

I don't know whether anyone has written you about Chief Hurley Bryant passing away. He and Chief Golden Simmons were close friends along with Chief Paul Odell and Chief Ross Stephens. Hurley served in the Strategic Air Command (SAC), Air Defense Command (ADC) and Pacific Air Forces (PACAF). **Mrs. Frances Simmons, Colorado Springs, Colorado (deceased 19 Nov 1999)**

My husband, Chief Hoover, retired July 1990. His last Air Force assignment was Williams AFB, Arizona, 1976. Before that he was at Andersen AFB, Guam, Altus AFB, Oklahoma, Webb AFB, Texas and Vance AFB, Oklahoma. He also served 14 years with the U. S. Army. He lived to enroll his daughter Christine at Duke University, Durham, North Carolina where she majored in literature and writing. She was later selected as the Chief Editor of the R&R section of the Duke Chronicle. **Suyon Hoover, Fort Worth, Texas**

Chief Robert Duke spoke often of you. We were married 40 years not only husband and wife, but also best friends. **Mrs. Laverne Duke, Wills Point, Texas**

Chief Herbert Biggs looked forward to receiving the quarterly newsletters. He was mostly interested in reading about past friends and others. He spent 30 years in the fire service, serving at Key Field, Mississippi, Los Alamos, New Mexico, and Chief at Tyndall AFB, Florida, 1946-1965. He ended his extraordinary career at HQ PACAF, January 1972. **Mrs. Margaret Biggs, Panama City, Florida**

Chief Hollis Skidmore was the former chief at Sheppard AFB, Texas for 19 years. He also served 28 years in the Air Force. He appreciated reading your newsletters. He was a proud man. He wore his military uniform and fire chief's uniform with such pride. **Mrs. Monya Skidmore, Wichita Falls, Texas**

First of all, to you who inspired me to begin a biography of my late husband. Secondly, to Chief Lloyd Garner who was Chief Joseph's right-hand man as well as his pride and joy, and who has kept in touch with me all these years. He helped me with many technical and behind-the-scenes details. The Photo-Journal Biography of Chief Frank Joseph VI makes us all proud. **Mrs. Iris Joseph McWhirter, St. Petersburg, Florida**

I'm informing you of my husband and your friend, SMSgt Hollis D. Ford who was severely wounded in Vietnam. His left leg and left arm and shoulder were badly damaged. He needed long hospitalization and a plastic knee. **Mrs. Betty Ford, Fort Worth, Texas**

Letters from Wives

The Air National Guard bus driver was also our guide. While touring the Elvis Mansion, he said, "I went to school with Elvis." The visiting wives were treated like royalty. Mrs. Aline Stephens was the greatest hostess and saw to it that everything was done right. She made Memphis visits fond memories. **Mrs. Evelyn Courchene, Mt. Olive, North Carolina**

Wives of fire chiefs had opportunities in Memphis, Tennessee. The annual fire conferences offered so much besides the conferences. But, I elected being at the opening ceremonies; my husband, Chief Bob Barrow, and I also attended all scheduled programs from 1957 to 1976.

I wasn't into the bus tours sponsored by the Air National Guard. Of course Memphis had something for everyone, every day and every night. Significant happenings in Memphis were...when the garbage strike crippled the city...when the rubbish littered the streets...when Martin Luther King was assassinated. The conference ended the next day. Memphis was forever changed that night. When Akron Brass Hospitality Room served corned beef sandwiches. Everyone came and socialized.

Memories of Memphis have lasted more than 50 years. I met Pioneer Chief J.K. Schmidt at the Memphis Conference in 1957. Chief Schmidt was an impressive man of stature. I asked my husband, "Why can't you be a fire chief like J. K.?" Little did I know my husband would become Fire Chief, Eglin AFB, Florida when Chief Schmidt retired 13 years later. **Mrs. Nancy (Nan) Barrow, Fort Walton Beach, Florida**

I didn't have an opportunity to go with Bob to conferences. I raised our children and fulfilled other parental responsibilities. The home was my first priority. **Mrs. Barbara Vreeland, Riverside, California**

This chapter closes...a voice inside nagged me. What have wives and widows got to do with this? A lot! On their own merits, they embroidered Chapter 6.



Modern Fire Station in the 1950s



Modern fire station at the turn of the 21st Century

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