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President

19 October 2010

Cap. Gral. BVC Rafael de la Cruz Valdez Peralta
Presidente Nacional
Cuerpo de Bomberos Voluntarios del Paraguay
Cruz del Defensor No. 437 c/ Dr. Hassler
Asunción, Paraguay

Dear President Valdez:

Thank you for your extraordinary hospitality during my recent visit to Paraguay. In addition to all of your efforts, I would like to thank the members of the Consejo Directivo, the Academia Nacional, the municipal and governmental officials with whom I met, as well as the many fire officials and firefighters with whom I met for their availability and tireless support in making this visit a reality.

I feel privileged to have spent time with you and the esteemed volunteer firefighters in and around Asunción. You indeed have much to be proud of, as was evidenced by the high level of morale and enthusiasm by everyone with whom I met. I was welcomed like family and made to feel like royalty, and I will never forget the friendships made during the visit.

The trip was an important educational experience since I was able to observe so many of your operations first-hand. Inviting strangers to observe, ask questions and make recommendations is difficult yet extremely proactive. I applaud your recognition that there are challenges to be met and a willingness to work towards achieving established and emerging priorities. I am also grateful for your efforts to create a visitation schedule that provided so complete an overview of the CBVP. Although many of your operations are performed in ways that are similar to our own, I believe that there are several areas where we can learn from each other and mutually benefit.

As promised, I have summarized my observations and recommendations in the attached report. I look forward to receiving your comments in response to this report, and to continuing this collaboration in the realization of your efforts to reduce firefighter risk, enhance civilian health and safety, and minimize property loss from fires and other emergencies.

Sincerely,

Stephan Hittmann



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Observations, Recommendations and Topics for Further Discussion
following October 2010 visit

19 October 2010

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History and Background of the 911 FUND

Created in the aftermath of the tragedy that occurred on September 11th, 2001, the 911 FUND was born from the personal, hard-won experience and first-hand knowledge of New York City firefighters and emergency personnel, all-of-whom worked on September 11th at the World Trade Center, and for countless days thereafter. As we watched brother firefighters commit their efforts, and in 343 cases their lives, to the rescue of 25,000 innocent civilians, we became convinced of the need to enhance our systems of emergency management and preparedness, and to share this understanding, along with our skills and lessons-learned, domestically and with friends and allies the world over.

Ever since September 11th, we have worked to acquire fire trucks, ambulances and related equipment, then to donate them, along with training, to governments, fire departments, emergency responders and industry, as part of a continuing effort to build preparedness, reduce risk, enhance civilian safety, and minimize property loss from fire and other types of disasters, be they natural or man-made.

Firefighters routinely put themselves in harms way to protect the citizens of all nations. Service, solidarity, fraternity, brotherhood, and the willingness to accept risks and make sacrifices is the common bloodline of firefighters worldwide.

That said, however, our experience is that firefighters world-wide have profound training and equipment deficiencies, yet typically assume the same risks as those taken by American firefighters, as well as their brother and sister firefighters worldwide. The training, equipment and/or apparatus that we donate are gifts that keep on giving, while adhering to the best principles and highest traditions of the international fire service.

Over the past nine years, we've donated dozens of fire trucks and/or ambulances, as well as millions of dollars of equipment and/or training to Argentina, Colombia, the Dominican Republic, Ecuador, El Salvador, Haiti, Mexico, Panama, South Africa, etc. All of our efforts in support of the 911 FUND are voluntary and unpaid. We neither request nor accept financial contributions for the work that we do, and 100% of the apparatus, equipment and training that we provide is given free-of-charge to firefighters and emergency first responders.

Introduction

The following report is drawn from information in six areas, namely:

1. Information provided by fire officials from the CBVP during their participation in international training activities given by the 911 FUND in Argentina for fire department personnel during November 2009 and October 2010.
2. Subsequent meetings in New York with senior fire officials from the CBVP during September 2010.
3. Materials provided by the CBVP before and during my visit in October 2010, including but not limited to:
 - The Strategic Plan for the CBVP 2008-2018
 - The General Rules of the CBVP
 - The 2010 CBVP Training Plan for the National Training Academy, which includes Objectives, Organization, Basic and Specialized Training
 - The Recent History of the CBVP, el Act of the General Assembly from their General Meeting in 2010
 - The Codes of Service - "10" Codes
 - "Last Minute" magazine for the CBVP for 2007, 2009 and 2010; as well as other documents.
4. First-hand observations, while in Asunción and neighboring communities during a fact-finding visit in October 2010, including visits to:
 - The National Directorio of the CBVP
 - The National Fire Academy of the CBVP
 - The Municipality of San Lorenzo
 - The Municipality of Mariano Roque Alonso
 - The following fire stations of the CBVP:
 - In Region 1: Nr 1 - Bomba Asunción, Nr 2 - Santísima Trinidad, Nr 3 - Sajonia, Nr 4 - Luque; y Nr 5 - Lambaré; Detacamento Mercado 4
 - In Region 2: Nr 7 - San Lorenzo
 - In Region 3: Nr 15 - Ñemby
 - In Region 4: Nr 6 - Mariano Roque Alonso
 - In Region 5: Nr 1 - San Bernardino
 - Multiple meetings with officers and firefighters from other stations as well.
5. Discussions with the leadership and members of the CBVP in Asunción and the neighboring communities during October 2010, as well as the governmental representatives with whom we met.
6. Independent research.

The culmination of the above activities was our recent visit to Asuncion, where we were privileged to join you in celebrating the 32nd Anniversary of the CBVP. In addition, we are greatly honored to have received:

- Resolucion No. 213 / 10 D.N., *Acta No. 026 / 04-10-2010* desde Cap. Gral. BVC Rafael Valdez Peralta, en la que fue nombrado "Bombero Voluntario Protector" del CBVP y el correspondiente Certificado y la Medalla que acredita esta Distinción; y
- Resolucion No. 236/2010 (Doscientos Treinta y Seis Barra Dos Mil Diez) para la Municipalidad de San Lorenzo

The report that follows is divided into thirteen subject-specific sections. Within each section are observations, areas of concern, recommendations and/or topics for further discussion. Subsequent to these sections is a list of Acronyms used in the report.

We cannot stress strongly enough that none of the observations made or areas of concern that are identified are in any way intended as a criticism. They are, rather, a starting point upon which we hope to develop an expanding dialogue with the officials and firefighters in the CBVP, with Paraguayan government and industry, and with the communities you serve. As we have repeatedly said, our goal in this effort is to develop an ongoing relationship with the CBVP, the city of Asunción, and indeed all of Paraguay, as the 911 FUND works to support your efforts to help reduce firefighter risk, enhance civilian health and safety, and minimize property loss from fires and other types of emergencies.

Section 1

Identification and Quantification of Risk

In providing a combined and cohesive emergency medical, fire and rescue service for Asunción and the surrounding area, the CBVP has continuously distinguished itself in its 32-year history. Its current configuration, staffing and response protocols emanate from a combination of perceived need, historical experience, as well as complex political and economic factors. While the eleven Regions protected by the CBVP "work" as presently configured and there indeed is much to be proud of, a fundamental building block prerequisite to understanding the realistic immediate need and potential future allocation or redistribution of resources must be a clear and dispassionate identification and quantification of risk in and around Asunción.

Asunción has everything one would expect from a city covering a large geographic area, including urban, suburban and acutely rural environments. Included in this area are numerous identified and potentially high-hazard environments which appropriately are of great concern to the CBVP.

Two of the factors that compound any discussion of multi-hazard emergency and response planning are: (1) The risk presented by a natural or man-made disaster and the associated need for pre-disaster mitigation (PDM) planning; and (2) the existence of a discrete Federation of CBVP with approximately 30 fire stations but virtually no interaction with the Directorio of the CBVP, even though much overlap in response area and personnel function was noted.

As it relates to natural disasters, while it may be difficult to calculate "damages avoided," PDM planning results in significant net benefits to Paraguayan society as a whole in terms of future related reduced losses and savings to the federal treasury, future increased tax revenues, and future reduced hazard-related expenditures.

In recognition of the need for PDM planning, it's our understanding that the government of Paraguay created the "Comite de Emergencia Nacional" (CEN) to coordinate emergency responses to the types of natural disasters that have previously and could prospectively affect Paraguay, with the main task of CEN defined as follows: *To prevent and to cope with the effect of disasters created by natural agents and other sources, as well as to promote and coordinate actions in public institutions, municipalities, and the private sector for the prevention, mitigation, response, and rehabilitation of those communities affected by the emergency.*

While an unpleasant reality, the two dozen natural disasters that occurred in Paraguay over the past 30 years (from floods, wildfires, etc.) have affected nearly one million people, and resulted in 217 deaths. It's impossible to create an exhaustive list of everything that can be done to prepare for a disaster, preparing to the best of our abilities makes virtually any disaster far less devastating. It's imperative, therefore, that Asunción, given its role as the nation's capital and Paraguay's most prominent city, continue to build its capacity to

preserve, maintain and reconstitute its ability to function under the threat or occurrence of *any* disaster that has the ability to disrupt life as it is known.

Recognizing that leadership is never put more strongly to the test than in a crisis situation where the objectives are immediate and so are the results, we applaud the CBVP for its recognition that complacency is not an option, and that denial could be deadly. That said, the CBVP needs to think more about large-scale emergency management, and the cascading effects resulting there from, by focusing its efforts on strengthening its mitigation, preparedness, response and recovery abilities, while becoming sensitive to the subsequent chain reaction that occurs post-event.

Fires, other types of emergencies or major disasters are largely unpredictable, as is the unpredictability of how those affected will react. To remain proactive, the CBVP should accelerate the development of its Emergency Operations Center (EOC), and to integrate it with the other response organizations that exist, the result of which will positively affect emergency management by helping to create a common nomenclature and understanding of these events prior to, during and following a fire, emergency or other disaster.

We recommend, therefore, that the CBVP undertake a risk-based review of the hazards facing both Asunción and Paraguay as a whole. Once completed, such a review would form the basis for the production of an Integrated Risk Management Plan (IRMP) as a key component of its long-term all-hazards strategic planning. By identifying current and potential risks within the greater Asunción area, the CBVP would be able to refine and improve its continuity of operations plan (integral to the strategic planning process), which includes the ongoing:

- Evaluation of the effectiveness of current prevention programs and response capabilities.
- Identification and definition of specific capabilities that both the Directorio and the Federation need to effectively address for all hazards being faced.
- Development of standards, policies and procedures to address both prevention and intervention.
- Determination of resource requirements to meet current and evolving needs.
- Initiation of multi-year planning whereby emergency and response planning on the local level works seamlessly with national response protocols, and the society at large is educated in disaster prevention, response and recovery.
- Availability of these documents to the public to see and understand, with an acknowledgement that these are living documents that are periodically updated as need and experience dictate.

As it relates to the existence of the Federation of CBVP, we encourage the Directorio to explore ways of bridging the communication barrier that appears to exist, the goal of which, in any emergency to which both groups respond, would be to enhance safety for Paraguay's firefighters, and the public they protect.

As the CBVP has grown over the past 32 years, opening new fire stations and expanding its services into outlying areas, its firefighters have expanded their roles many fold. Just as the CBVP protects the lives and property of Asunción's half-million residents and millions more throughout Paraguay, so too must it expand and diversify the skills of its firefighters.

Advancing public safety through fire prevention, investigation and education, we recommend that the CBVP explore ways to embrace new and evolving priorities in these increasingly complex and challenging times. That said, traditional firefighting, providing pre-hospital care, and responding to diverse public safety emergencies drive critical responsibilities in several areas, including but not limited to:

- Fires - structural and non-structural: Traditional structural firefighting, car fires, wild land fires, and rescues related to these fires.
- Medical Emergencies, natural or terrorist-induced: Involving every aspect of pre-hospital care, mass-casualty trauma care, decontamination and hospital transport.
- Chemical, Biological, Radiological, Nuclear, Incendiary and Explosive events: The ability to respond to and mitigate these events, and the associated consequence management through continuous training, drills and simulation exercises.
- Fire Prevention - inspection, education, enforcement and evacuation: Continuing to emphasize its inspection/enforcement role, and combining it with a proactive fire safety education program.
- Fire Investigation - arson, cause/origin, intelligence, law enforcement and site security: Expanding traditional arson investigation as well as the cause and origin of fires to include an expanding interaction with law enforcement, as well as intelligence-sharing and site-security resulting from terrorist threats.
- Structural Collapse - search, rescue and recovery: Enhanced training and equipment to enable CBVP personnel to perform scene surveys while safely operating at building collapses, high-angle and/or confined space rescues in life-threatening incidents.
- Hazardous Materials - incident response and planning: Working closely with other local, national and international resources to provide an increasingly comprehensive capability in this highly technical area, the CBVP needs to expand its capacity to respond to and mitigate Haz-Mat events at all levels, be they chemical, biological, radiological, nuclear, incendiary or explosive in nature.
- Transportation Incidents - land, air, rail and water: Responding to emergencies involving all modes of transportation.
- Catastrophic Weather Events - floods, earthquakes, severe climate changes: Playing a critical role in responding to all types of weather-related emergencies and natural disasters.
- Special Events - planning and response: Planning for and responding to special events that are local or national in scope, where large numbers of people are in attendance, with the added threat of mass casualties, which makes these events take on a whole new dimension and makes them no longer routine.

In addition to the above, we recommend that the CBVP look to:

- Improve Emergency Response Operations by:
 - Enhancing its preparedness to respond to fires, emergencies, disasters and acts of terrorism.
 - Implementing initiatives to improve overall system performance, operational coordination, resource deployment and service delivery of pre-hospital medical care.
 - Developing a system to provide incident commanders with on-scene critical information, enhance emergency response and provide a safer operational environment.
 - Extending and enhancing training for new recruits.
 - Developing training initiatives to ensure the maintenance and sustainability of core competencies and newly-acquired specialized skills for all firefighters.
 - Developing a continuity of operations plan that in the event of an emergency or threat of an emergency, ensures the continuation and uninterrupted delivery of critical services to the public and to other agencies.
- Strengthen Management and Organizational Development by:
 - Implementing a performance management system for mission-critical functions.
 - Developing rank-specific training for officers at all levels.
 - Developing an CBVP-wide communication strategy utilizing available and relatively inexpensive technologies.
- Improve Fire Prevention and Fire Safety Education by:
 - Enhancing and developing additional fire prevention and educational outreach programs to make communities safer.
 - Implementing new safety requirements and evacuation plans for both commercial and residential high-rise buildings.
 - Integrating fire prevention with community safety education programs and expand the message to include other relevant safety topics.

Section 2

The National Fire Academy of the CBVP

The National Fire Academy of the CBVP is an especially valuable resource to the CBVP with its superbly qualified and highly-motivated staff. While the facility itself is still in development, the recent construction of a training tower (to be used for interior attack, exterior attack, balcony rescue, stairwell operations, high-angle rescue, victim removal, etc.) dramatically enhances the Academy's value by providing it with needed flexibility in terms of the types of courses to be taught.

It's our firm belief that the National Fire Academy is among the Department's best resources to make the good people within the CBVP even better in the work that they do. In discussing the importance of ongoing skill enhancement through aggressive in-service training under the auspices of the Academy, many of the staff with whom we spoke offered

innovative training ideas for the future, were open to new training possibilities, and expressed deep respect and support for the dedication of the Academy's staff.

Expanded training should, therefore, be introduced to reinforce current skills, build new skills and promote advancement. Didactic and hands-on instruction in dispatch operations, driver training, pump and ladder operations, fire prevention, specialized drills, hazardous materials, special operations, building construction, leadership and officer training, ICS, instructor development, pre-hospital care, etc., should be introduced in the future. In this regard, we make the following suggestions:

In-Service Training:

The Academy has enormous potential for future development, and should be used much more so for in-service training, refresher training, multi-unit drills, large-scale exercises and countless other training and educationally-related purposes. What was witnessed, however, was an absence of Academy-based in-service or refresher training for firefighters. ***This is a critical situation that must be corrected.***

Skills must be maintained through a combination of practical experience, classroom, hands-on and refresher training. Firefighters must be proficient at assessing a situation, formulating an intervention plan and implementing that plan with minutes, if not seconds. If the plan is less effective than hoped for, and/or if other variables are introduced (e.g., a structural collapse), firefighters must quickly know it, change direction and return to work. These skills can only be learned by training and practical experience, or it will cost people their lives.

We understand full-well that in most cases, volunteer firefighters are employed during the day and are able to perform their firefighting duties at night and on weekends. That being the case, creative ways should be developed to bring Academy resources to individual stations to avoid their closure during potentially high workload periods.

In addition and where possible, ***all*** firefighters should be required to participate in Academy-sponsored training on a periodic basis for in-service and refresher training on fire attack, ventilation, inspections, community service, ICS, Haz-Mat, search and rescue, engine and truck operations, forcible entry, etc. This is especially true for firefighters who work in areas where there is little actual work, as well as for those who (for medical, administrative or other reasons) have been "off-line" for a protracted period of time.

Training must be ongoing, repetitious and as realistic as possible, without compromising safety. Since firefighting is often chaotic, especially when working in an unfamiliar environment, skills must be second nature. Important also is the need for brutally-honest company-based reviews of each incident within the fire station to assess the "lessons-learned" from interventions, and adapt accordingly.

We encourage the Academy, indeed all of the CBVP, to adopt the credo of the New York City Fire Academy, displayed in large letters and which says with irrevocable conviction

above its entranceway: ***"Let No Man's Ghost Come Back To Say His Training Let Him Down!"***

Basic and Specialized Training:

While the ultimate goal of fire departments worldwide is largely the same, we observed several methods used by CBVP firefighters to achieve these goals as being quite different from our own. We recommend, therefore, that standardized training be given in the following areas:

- **Firefighter Removal:** Firefighter safety is an extremely important topic, and from what was observed, removal techniques for injured firefighters are an essential area that needs to be stressed. A "down firefighter" may be the result of a medical condition, not necessarily a fire-related injury. An example of a drill that could be run would involve:

Instructing three of the largest members to don their turnout gear and SCBA. Go to the stairs and have two of the members carry the third member (acting as if he was unconscious) up one flight in a wide staircase. (Less experienced firefighters will generally try to carry the "unconscious" member from side-by-side positions, each holding one arm. This method is unnecessarily strenuous because it overuses the small muscles of the upper body, instead of taking advantage of the more powerful muscles of the lower body. It also invites serious injury to the lower back of the unconscious firefighter.) Now select two of the smallest members and set the stage by first narrowing the stairway (like you would find leading to a cellar). Using our method, the two members would carry the "unconscious" member with emphasis on leg muscles, which is our prescribed way to carry, and which is generally quicker and easier.

This task is of vital importance, and with a willingness to learn and share information, we see no reason why firefighters in Paraguay couldn't adopt an efficient method and practice in this area, as in others.

- **Collapse:** Work needs to be done in learning about building construction, types of collapse, stages of collapse rescue, tools, shoring, void entry with breaching and debris removal (using light, medium or heavy saws, torches, air bags, etc.). We view this as a mid-level priority that can only be addressed given increased access to heavy machinery.
- **Confined Space:** This is the area where we felt considerable work needs to be done, especially in terms of safety to the rescuer. No method for collapse shoring was observed, and a cache of struts and wood timbers, with proper training would greatly minimize the risk to rescue personnel. Firefighter removal techniques and a method to monitor atmospheric conditions are also needed. Monitoring for lower explosive levels as well as oxygen and carbon monoxide levels is a critical safety issue. Patient packaging techniques and equipment are also important in this area.

- Forcible Entry: Tools such as haligans, mauls, heavy axes, etc., are important, as are procedures on their use, which we believe could dramatically enhance efficiency in this area.
- Mask Confidence: Additional training in this area should be introduced using blacked-out face pieces, search lines, setting off PASS alarms, etc., so that mask confidence becomes second-nature.
- Special Operations Training: Based both on discussions and observation of your equipment and methods, training is needed in breaking and breaching, collapse operations, heavy rigging, shoring and cribbing, torch operations, trench rescue and void search.
- Miscellaneous Training: Additional training should be provided in the following areas: Auto extrication, communication on the fire ground, engine operations, hose stretches, ladder skills, lock-out tag-out, monitoring of firefighters during operations, removal techniques (trapped firefighters, man in a machine, under a train, etc.), roof operations, ropes and knots, SCBA procedures (reduced profile, quick escape, mask confidence, etc.), search techniques, simple entries with a safety line, railroad emergencies, multiple-casualty incidents, electric utility emergencies, physical fitness, etc. All of these require minimal equipment, and must be mastered before emphasizing advanced training. (Training in these areas must be coordinated with access to and use of the appropriate equipment, which we would be happy to recommend.)

Drills and Progress Reports:

Once new recruits are assigned to a fire station, there appears to be no tracking or evaluation mechanism to demonstrate the skills they learned at the Fire Academy. Progress reports and ongoing drills should be mandated for new firefighters for at least their first year of service. These drills should review operations at fires, motor vehicle accidents, strategies and tactics, policies and procedures, etc. Periodic evaluations of new firefighters should be completed by officers and sent to the Fire Academy to systematically track each recruit's progress. In addition, the Fire Academy should:

- Publish a daily drill schedule to be followed in all stations to ensure that skills learned are maintained. We were dismayed to learn that no station-based drills are required.
- Introduce an Annual Training Day where firefighters return to the Academy for skills refresher training.
- Have the ability to mandate training when new equipment, policies and/or procedures are being introduced.

Officer Training:

Officer training is very much needed for newly promoted and senior officers alike. Training in officers' roles and responsibilities, in administrative and operational matters, decision-making, problem-solving, company administration, personnel communication, report writing,

in-unit training, community relations, etc., are all required of officers, and should be introduced as an ongoing part of the training provided by the CBVP.

Another key component of officer training and responsibility is the need for an intimate working knowledge of ICS. The accountability or ICS currently in place needs to be better understood. Incident Command and safety coordination, particularly during an emergency, coupled with the strategies and tactics required to successfully manage a variety of fire and emergency situations, must be developed.

Several officers expressed the need for the ongoing development and maintenance of skills, particularly in Incident Command and operational capability. Training in this area is critical in providing the CBVP with appropriately skilled officers capable of meeting the ever-increasing operational demands being placed upon them.

Effective role-related training is essential to maintaining operational capability and for ensuring the continuous health and safety of firefighters. The introduction of officer training at all levels of Incident Command are critical to the maintenance of effective risk assessment, decision-making, planning, objective setting, prioritizing and reviewing the practical outcomes of emergency interventions. Officers must have a clear understanding of their roles and responsibilities at incidents, together with an understanding of ICS principles and how to safely maximize personnel and other resource during an event that is dynamic in nature.

Concern was also expressed that officers at the Tactical and Strategic Command level are not receiving the appropriate level of training needed to maintain competence in this area. A serious challenge to the CBVP, but one of its many essential responsibilities, is its ability to integrate current and aspiring officers while meeting current and future demands being placed upon it. It is *strongly* recommended, therefore, that an assessment of Incident Command capability be undertaken, in conjunction with a training needs analysis, to inform and support the introduction of courses designed to improve operational leadership, especially at Tactical and Strategic Command levels.

Instructor Development:

Conceptually parallel to the logic that a good teacher doesn't necessarily make a good principal, a good firefighter doesn't necessarily make a good instructor. That being said, instructor development courses should be introduced. How to teach the adult learner, developing questioning techniques, giving lectures, demonstrating skills, encouraging interactive activities, etc., are all important skills to be learned, and correlate directly with instructional outcomes.

Instructor and Course Evaluations:

Instructor and course evaluations (completed anonymously and submitted to the Fire Academy for review and follow-up) should be introduced to ensure that instructors are

performing well, materials are being effectively taught, and courses provide meaningful instruction in response to ongoing needs and priorities.

Even with the understanding that 100% of your firefighters and officers are volunteers, the CBVP should also introduce firefighter and officer performance evaluations to ensure that personnel are meeting acceptable standards. An annual timetable for these evaluations should then be announced, with it the responsibility of the Department's leadership to ensure that performance evaluations are periodically conducted in a fair and dispassionate manner, and become one of several factors when considering an individual for promotion.

Ongoing Investment in the Fire Academy:

Further investment in the Fire Academy will both facilitate its growth and provide a solid foundation for the introduction of additional programs in the days, months and years ahead. Expanding its existing facilities and introducing new courses to enhance the skills of firefighters and officers are essential tools that encourage individuals to grow in their commitment to and understanding of the evolving skills required of firefighters, and help respond to the new demands of lifelong learning. These are the challenges to which the Fire Academy should respond with vigor, enabling it to become the world-class facility it is capable of becoming.

Section 3

Apparatus and Equipment

While the CBVP merits great respect for how resourceful they have been in acquiring apparatus and equipment given the relative youth of the department, 32 years, this approach has been largely reactive to its acutely limited financial resource. Now in its fourth decade, an essential component of the Department's impressive 10-year Strategic Plan necessitates that it become proactive in its efforts to procure both newer and additional apparatus and equipment, while it maintains its current inventory until such replacements are possible. This is particularly evident in the following areas:

Equipping Apparatus:

Given the vast amount of unused space in many compartments, all of which could be used for essential equipment, this is an area where we hope we can help.

Apparatus Maintenance:

Firefighters should be expected to perform basic maintenance on their apparatus and their equipment on a daily basis. This helps the CBVP to protect the public, and protect the lives of firefighters themselves.

We are concerned that no plan seems to exist for situations where a station lacks the ability or resources to adequately maintain its apparatus and, as a result, it cannot remain in

service, even if the station serves a high-risk area with a heavy workload. We observed at least one situation where a station was unable to respond due to its apparatus being out of service, when other roadworthy fire trucks were being held in reserve at a nearby station. This situation needs to be addressed.

Apparatus Procurement:

It's our understanding that with support from the Directorio, each fire station is individually responsible for the development of relationships that hopefully lead to the donation of apparatus (PPE and/or other equipment). We were told that, in fact, the CBVP has *never* purchased a fire truck, with 100% of the apparatus in Paraguay having been donated by other countries.

It's our belief that apparatus procurement should be both collaborative and proactive. It is imperative that while the Directorio and individual stations work to develop the aforementioned relationships, more Department-wide communication occur to enhance these collective efforts. While it's easier said than done, the types of incidents and emergency scenarios that firefighters are trained to deal with must correlate with the apparatus they use. Apparatus procurement and the sensible distribution are important parts of this equation to ensure that the fire trucks used by firefighters meet their needs as they assume the profound risks associated with this work.

A study should be undertaken to determine the recommended number of fire trucks needed, and what their specific functions will be. Inner city engine, suburban engine, brush fire engine, the type(s) of ALP's needed, their reach and response areas, vehicle lifespan, vehicle replacement schedules, etc., are all factors to be considered.

Among the suggestions we would make, therefore, are as follows:

- A redistribution of certain apparatus seems warranted, with the reallocation of apparatus to districts where they are most needed and appropriate for the streets or terrain. Smaller trucks should be moved to fire stations that serve communities with smaller streets, and newer trucks should be moved to the busiest stations. We observed several stations without a full complement of apparatus, even though their workload was high, while other stations had spare apparatus that weren't being used. This should be corrected.
- Institute a tracking system to ensure that the CBVP knows the location and availability of all apparatus, with spare apparatus strategically placed around the city to better support CBVP needs in larger and/or busier stations with the greatest workload.

Section 4 **Operations**

From an operational standpoint, there are several challenges facing the CBVP that became apparent during both casual observation and in talking with members of the Department. Some of these challenges are created by a seeming lack of accountability, others are

organizational in nature, and some reflect the age-old fire service tradition that "this is the way we've always done it." Among the areas of concern include the fact that the current organizational structure is modular, the effect of which hinders communication and has a domino effect leading to other problems. While it is essential that everyone recognize and abide by a clear chain-of-command, that chain needs to be modified when it causes more problems than it resolves.

Accountability:

Station Commanders, indeed all officers, must be accountable for their job performance. While there may be acceptable reasons for some of the conditions observed at different fire stations, there are some for which there is simply no excuse.

Haz-Mat and Technical Rescue:

The CBVP has a small number of personnel trained in Haz-Mat and some areas of Technical Rescue. While both areas are expensive in terms of the extensive training required and specialized equipment needed, the CBVP should consider:

- Expanding the number of firefighters trained in both of these areas to enhance the CBVP's ability to respond to and/or provide support in these areas. This would get trained people on scene more quickly, allow for better coverage throughout Asunción, and give the CBVP a more robust response capability when events warranting this expertise occur.
- Pre-positioning specialized equipment at strategic locations to assist in this effort. Examples of the types of specialized equipment that the CBVP should consider pre-positioning include PPE, SCBA, protective overalls, disposable respirators, Level A and/or vapor-protective suits, gloves, over boots, radios, generators, helmets, harnesses, ropes, rigging hardware, cribbing, tools, flashlights, headlamps, floodlights, gas and radiation detectors, biological agent monitors, megaphones, flare kits, portable barricades, emergency decontamination showers, mass casualty systems, trauma kits, splints and cervical collars, prone boards and stretchers, emergency blankets, etc.

Section 5

Water Supply

The water supply throughout Asunción and the surrounding area is via a municipal water system. Although water supply in general seems adequate, adequate water pressure was repeatedly reported to us as being problematic.

It is recommended, therefore, that to ensure access to water for fire operations, the CBVP should utilize an adapter with a larger barrel size and two discharge outlets, the effect of which would be to double the water supply from a single hookup.

A well-executed plan also needs to be in place for each pumper to hook-up to multiple hydrants when working at a fire, with firefighters well-trained in this evolution so it becomes second nature.

Discussion should begin regarding the long-term need to retrofit and upgrade outdated water mains wherever necessary, with larger water mains capable of delivering larger quantities of water.

From an urban growth perspective, this is a problem that will not get better on its own, and if left untreated, will have a greater potential for civilian and firefighter loss of life.

Section 6

Dispatch, Communications and the Emergency Operations Center

A number of challenges face the CBVP in this area.

Callers today dial a number to access an operator, with calls answered in the order they are received. A person calling about a fire, car or motorcycle accident, heart attack, etc., has their call answered by one of two operators who work in the Directivo. Operators ask pertinent questions, determine the nature of the emergency, then refer it to the appropriate station.

A related concern is the fact that the EOC is still not operational, is potentially vulnerable in the event of a catastrophic event, and to the best of our knowledge, Asunción has no known redundant or fallback control facility which could then be activated. This being the case, we recommend the following to correct these problems:

Dispatch and Communications:

We encourage Asunción to adopt a 911, 999 or other three-digit number dedicated exclusively for emergency calls, with the same number accessible from either a land-line or a cell phone. Operators receiving these calls should:

- Be able to quickly ascertain the nature of the emergency.
- Route the call to the appropriate station.
- Stay on the line with the caller (e.g., if a child is calling) until help arrives.
- Be trained in emergency management protocols and be able to coach callers in basic first aid, CPR and other related practices.
- Have access to mapping and topographic information.
- Be knowledgeable about the CIDS system, which, along with photos of each type of building in a station's response area, should be found in each apparatus. (The CIDS system provides critical information about building design and construction, as well as the location of fire command stations, stairwells, standpipe outlets, freight and passenger elevators, utilities, sprinkler valves, mechanical rooms, fire dampers, roof accessibility, hazardous materials, etc.)

While we acknowledge that the addition of new responsibilities for emergency dispatch operators creates training, management and administrative issues, we believe that the benefits of a revised system far outweigh these concerns.

Emergency Operations Center:

The EOC (housed in the same building as the Directorio and central Dispatch) is not yet operational, and when operational, will have no redundant or fallback facility that could be activated should a catastrophic event render the primary facility untenable. Without any apparent security at the Directorio, Dispatch or future EOC, a concern is the fact that the building itself, its communication infrastructure and its personnel are at severe risk from an unexpected event such as a fire, larger-scale natural disaster or act of terrorism. Living in the modern world of international terrorism, these factors combine to make the EOC a very soft target. If it were incapacitated, emergency services throughout greater Asunción would suffer a massive disruption. Accordingly and as a matter of some urgency, it is strongly recommended that an immediate effort be undertaken to activate a secondary facility to serve in a redundant fashion as a fallback communication, command and control center. Once established, this facility should be tested and exercised on a regular basis to ensure that clear lines of communication and control can be quickly re-established, and that a clear understanding exists by all personnel why, when and how the activation of the fallback facility will take place.

Section 7

Fire Stations

Most fire stations are quite large with living quarters for their personnel. Firefighting tools, equipment and PPE were often in limited supply, and repeatedly noted was both the inferior or damaged condition of the PPE, compounded by the fact that every member didn't always have a helmet, hood, boots, gloves or full turnout gear. Also noted was the fact that a limited supply of SCBA was available, and only officers had radios for operation on the fire ground.

Observed were some stations that were immaculate and in pristine condition, while others were in disrepair, with miscellaneous debris throughout. While some progress is being made to modernize each station, general station upkeep (basic repairs, simple construction work, painting, etc.) and maintaining their tools and equipment is expected of firefighters world-wide. Everyone in every fire station should embrace this concept. Given the fact that the CBVP is lacking funding and the stations operate with considerable autonomy, it was frustrating to see so many stations in need of repairs that could easily be made "in-house."

The use of the larger fire stations should also be expanded to provide for different types of community functions. All stations should be open to the public for tours and literature distribution on recruitment, water safety, fire prevention, fire safety programs, etc., all of which should be available for distribution to and discussion with the public.

A heavier investment of time and resources in fire safety is among the best investments the CBVP could make in its efforts to reduce losses from fire, injuries from automobile and motorcycle accidents, etc.

Section 8

Mutual Aid and Interagency Operations

The relationship between the Directorio and the Federation appears strained. We encourage the Directorio to explore ways of bridging the communication barrier that appears to exist with the Federation, the goal of which, in any emergency to which both groups respond, would be to enhance safety for Paraguay's firefighters, and the public they protect.

Given the strong interpersonal relations that exist between firefighters from the Directorio and the Federation, widespread interest was expressed in enhancing the mutual aid system to move towards seamless interoperability. It's our view that a mutual aid agreement must be developed, periodically reviewed and updated to ensure its accuracy. Developing reliable mutual aid programs is a complex and ongoing challenge, and should (at a minimum) reflect each participant's capabilities in the following areas:

- Animal health emergency support
- CBRNE detection
- Citizen preparedness and participation
- Citizen protection/evacuation and in-place
- EOC management and operation
- Critical infrastructure protection
- Economic and community recovery
- Emergency public information
- Environmental health
- Facility management
- Firefighting operations and support
- Information gathering and recognition of indicators and warnings
- Interoperable communications
- Isolation and quarantine
- Mass care/prophylaxis
- Medical supplies management and distribution
- Onsite incident management
- Firefighter safety and health
- Risk management
- Structural damage and mitigation assessment
- Triage and pre-hospital care
- Urban search and rescue
- Volunteer management
- WMD/Haz-Mat response and decontamination

Formal mutual aid arrangements would enable both organizations, at all levels, to coordinate preparedness activities more effectively, spread costs, pool resources, distribute risk, and thereby increase the overall return on investment. We also recommend that an ongoing program of expanded joint training, drills, large-scale exercises and strategic personnel exchange be introduced and maintained, and that familiarity with and training at major industrial sites also be initiated to enhance communication and the collective preparedness.

Practice makes perfect!

In furtherance of these efforts, ongoing coordination must also be maintained with the various Police Departments in and around Asunción to develop an all-hazards preparedness policy that will define the responsibilities and resources to be brought to bear in any type of emergency. A standardized set of concepts would allow for effective, efficient and collaborative incident management at all levels and at any emergency.

A unified command system should also be developed when multiple agencies are involved and incident jurisdiction has the potential of coming into play (e.g., a major industrial accident involving police, firefighters and medical personnel), or when incidents cross political or geographic jurisdictions.

Section 9

Community Fire Safety

Among the most impressive programs introduced by the CBVP is its program of fire safety education, which merits special recognition for their ingenuity and positive contributions to community well-being.

Building on its efforts to teach basic fire safety education in schools and through other activities, the CBVP has introduced risk reduction, fire safety education and basic preparedness into the everyday lives of a large portion of the population. Children and adults alike are being taught about fire safety, which is an invaluable tool in fire prevention through community education.

Community fire safety activity should be a core responsibility for each firefighter, and form an important part of their daily work routine. Community safety initiatives at an operational level would also act as a catalyst to make each fire station a Community Safety Center. ***Every opportunity must be taken to promote fire safety education.***

All told, the community education programs that exist in Asunción are first class, and we recognize them as such. A similar commitment should be made to addressing other CBVP needs that are of equal importance.

Section 10

Fire Cadets

The CBVP also deserves much credit for its work with Fire Cadets, and we encourage it to continue and expand these efforts.

Aimed at boys and girls between 12 and 18 years of age, participants come together on week-ends to work and train in a highly organized format where discipline is heavily emphasized. The instructors are supportive, enforce the rules, and insist that all participants work and learn. The focus is on firefighting, with the structure and discipline often replacing what these children are missing in their home life. Given specific tasks and timelines within which they need to be completed, there are realistic consequences for failure. When old enough, participants have the opportunity become volunteer firefighters with the CBVP.

Providing classroom and hands-on training about firefighting policies and procedures, as well as the equipment and appliances used, and providing its participants with a first-hand look at the essential role that firefighters play in the community, the Fire Cadets is an important avenue for recruitment and we applaud its success.

Section 11

The Need for an Expanded Dialogue with Government and Industry

Fire protection has historically been a local responsibility. Each community has both static and dynamic conditions that are unique to itself, and a system of fire protection that works well in one community cannot necessarily be assumed to work equally well in another. ***Fire prevention is the key***, and without intensive and ongoing local-level planning, the system of fire protection is apt to be ill-suited to local needs.

Each community must balance acceptable risks, the need for adequate fire protection with reasonable financial costs. Major emergencies, however, could easily overwhelm the capabilities of the CBVP, and both Asunción and its neighboring communities on the one hand, and the Directorio and Federation on the other hand, must have detailed cooperative plans for coping with such emergencies. Effectiveness can only be improved through pre-planning, joint training, familiarity with each other's day-to-day operations and some standardization of tools, equipment and response protocols.

Even with joint planning, however, expanded coordination must involve the national government as well as local industry. Fire prevention, fire suppression and public education on fire safety should remain the responsibility of the CBVP. Regulatory responsibilities for fire prevention, code enforcement and financial support for local fire departments must, however, be expanded. So too must the national government and local municipalities be responsible to provide additional financial support to the CBVP, especially since it is staffed entirely by volunteers.

While we recognize that government alone cannot satisfy all requirements, industry must fulfill its responsibility when it is the beneficiary of services provided by firefighters who it calls upon in time of need. Firefighters are a basic form of insurance. No one likes paying the cost for this insurance, but they deeply appreciate having it in times of emergency. ***In prevention we have cure***, and our hope is to strengthen industries awareness of the risks from fire, natural disasters and/or acts of terrorism.

By sharing information, identifying risks, performing vulnerability assessments, developing emergency response and business continuity plans, enhancing overall readiness, implementing appropriate prevention and protection programs, and by providing increased financial support for the CBVP, industry can dramatically assist their community by both being an employer, and in helping to respond to and recover from an emergency.

Section 12

Issues for Further Discussion / Short-Term Timetable of Proposed Activities

We begin this section by stating what hopefully is obvious, namely, that we are prepared to elaborate on any of the information provided in this report, to provide additional material on topics discussed, and/or to refer the CBVP to organizations that might be of assistance regarding any of the subjects addressed herein, as well as other subjects of interest.

If the CBVP is interested in expanding its relationship with the 911 FUND, a component of our future discussions must out of necessity involve the need to develop collateral relationships with: Airlines (such as TAM, and others), who would be called upon to support joint training efforts by donating transportation for 911 FUND personnel (who are SME's, prepared to donate their time and expertise to provide training for CBVP personnel in the essential areas discussed in this report), or for CBVP personnel to be trained in other countries; domestic and international shipping companies who would be called upon to provide transportation of donated apparatus and/or equipment; hotels to provide accommodations; etc. We would welcome any update on your thoughts or efforts in these areas.

A number of issues were discussed in general terms during our visit, and to better understand the infrastructure and contiguous relationships referred to by the CBVP, we would appreciate information on the following topic:

Upcoming Training Activities: Numerous references were made to upcoming training to be provided to CBVP personnel either in Paraguay and abroad. That being the case, to ensure that we avoid any unnecessary redundancy as it relates to training that is already scheduled, we would appreciate information on future training topics already scheduled, which country and/or international organization will be providing the training, where and when the training will be provided, and how many CBVP firefighters or officers will be participating.

As it relates to a specific timetable for future activities of the 911 FUND in support of the CBVP, the following is proposed:

- +/- 15 November 2010: CBVP to respond to this report by identifying areas to be prioritized in the future.
- +/- 30 November 2010: An initial donation from the 911 FUND to the CBVP of:
- 50 sets of turnout gear, helmets and boots, for use at the Fire Academy.
 - An additional 50 sets of turnout gear, helmets and boots, for deployment to stations you determine to have the greatest need.
 - 50 Scott 4.5 SCBA harnesses (with cages and regulators), for deployment to stations you determine to have the greatest need.
 - 50 face pieces with hoods, for deployment to stations you determine to have the greatest need.
 - 50 pair leather firefighting gloves, for deployment to stations you determine to have the greatest need.
 - 50 sections of 5" rubber-jacketed supply hose (100 psi) with National clips and couplings, 100' in length, for deployment to stations you determine to have the greatest need.
 - Several years of fire service and medical publications, including Fire Engineering, Firehouse, Fire-Rescue and JEMS, all of which focus on emergency preparedness.
 - Several cartons of medical supplies (2x2 gauze pads, 3x3 gauze pads, 4x4 gauze pads, burn blankets, intubation tubes, surgical gloves, blood pressure cuffs, drain sponges, Harmony manual pumps, stethoscopes, 3 MAST IIIA anti-shock trousers, 2 Fire Save defibrillators, etc.), for deployment to stations you determine to have the greatest need.
- +/- 15 December 2010: Two Spanish-speaking senior firefighters (one from FDNY and one from Argentina) to visit the CBVP for 5 days to observe and evaluate the operational skills of firefighters, the result of which would be to help us prioritize future training for the CBVP on topics of greatest immediate need. (The 911 FUND is prepared to provide transportation to and from Asunción for both firefighters if the CBVP provides them with hotels and meals.)
- +/- 15 January 2011: The aforementioned two firefighters will provide the 911 FUND with a report of their observations and recommendations for future training.
- +/- 15 February 2011: A predetermined number of CBVP firefighters and/or officers will participate in the 4th international training that the 911 FUND will be conducting in the province of Buenos Aires, Argentina. This is a three-day event, and the topics on which

training will occur are: (1) Practical/operational skills and tool usage for firefighters. (2) Leadership training, ICS and interoperability for officers. (3) A large-scale full-day simulation for senior officers. The CBVP is requested to provide transportation to and from Argentina for its participants, and the 911 FUND will provide CBVP participants with accommodations and meals. All fees for CBVP participation in this training will also be waived.

While these activities are underway, the 911 FUND and the CBVP can discuss future support and timelines for donations of training (including firefighter basics - auto extrication, trauma, advancing hose lines, portable ladders, tool usage, victim removal, grass fires, etc.; specialized training - high angle rescue, building collapse, confined space training, etc.; leadership and ICS for officers; large-scale inter-agency simulations; etc.), equipment and apparatus, as we move towards the execution of a Convenio to outline the terms, conditions and formal nature of the relationship between our two organizations.

Section 13

Conclusion

Much like emergency first responders the world over, the core values of the CBVP include:

- **Service:** An unwavering call to protect and serve.
- **Bravery:** The ability to overcome fear through fortitude, instinct, compassion for others and training.
- **Safety:** To keep citizens free from danger by providing the best equipment and training to reduce risk to the public and its members at fires and other emergencies.
- **Honor:** The enormous commitment necessary to perform tasks that require excellence of character, inspire each other through pride, and acknowledge that every action reflects on each member of the CBVP, both past and present.
- **Dedication:** A commitment to the objectives of the mission of the CBVP as part of its code of conduct in the faithful observance of duty, and calls on everyone to fulfill their obligations professionally and honestly.
- **Preparedness:** By combining all of the components of its core values, the CBVP maintains its constant state of readiness to meet all threats and challenges, traditional and new.

The single greatest asset of the CBVP continues to be its uncommonly dedicated men and women, both uniformed and civilian, and we applaud your efforts to reduce firefighter risk, enhance civilian health and safety, and minimize property loss from fires and other emergencies.

Acronyms

ALP	Aerial Ladder Platform
ALS	Advanced Life Support
BLS	Basic Life Support
CBRNE	Chemical, Biological, Radiological, Nuclear and Explosive
CBVP	Cuerpo de Bomberos Voluntarios del Paraguay
CCA	Communication and Alarm Center
CEN	Comite de Emergencia Nacional
CIDS	Critical Incident Dispatch System
CPR	Cardio-Pulmonary Resuscitation
EMT	Emergency Medical Technician
EOC	Emergency Operations Center
FDNY	Fre Department of the City of New York
Haz-Mat	Hazardous Materials
ICS	Incident Command System
IRMP	Integrated Risk Management Plan
JEMS	Journal of Emergency Medical Services
NBC	Nuclear, Biological and Chemical
NDMC	National Disaster Management Centre
NFPA	National Fire Protection Association
PASS	Personal Alarm Safety System
PDM	Pre-Disaster Mitigation
PPE	Personal Protective Equipment
SCBA	Self-Contained Breathing Apparatus
SME	Subject Matter Expert
WMD	Weapons of Mass Destruction