



UNITED STATES MARINE CORPS  
MARINE CORPS SYSTEMS COMMAND  
2200 LESTER ST  
QUANTICO, VIRGINIA 22134-6050

IN REPLY REFER TO:

5000  
PMM-163  
30 Sep 04

From: Program Manager, NBC Defense  
To: Ms. Connie Buffalo, President, INTELAGARD, 590 Burbank, Suite 220,  
Broomfield, CO 80020

Subj: LETTER OF APPRECIATION IN THE CASE OF INTELAGARD

Dear Ms Buffalo:

I would like to take this opportunity to thank INTELAGARD for its efforts in the design and production of the Fixed Site Decon System (FSDS). The FSDS was required to meet an Operational Needs Statement (Urgent) to support Operation Iraqi Freedom and other urgent requirements of the United States Military.

The FSDS Program required INTELAGARD to be extremely flexible in design, meet demanding production schedules, participate in systems evaluations, and modify the systems to correct unexpected problems found during the evaluations. INTELAGARD was tremendously successful in every aspect of this program and always went the extra mile to ensure success. The FSDS are now fielded to support our troops in Iraq.

INTELAGARD is commended for a job well done. You and your associates should be proud of the work they have done to support our Soldiers, Sailors, Airmen and Marines.

  
D.W. BRYCE



# Ontario

*Los Angeles World Airports*

January 6, 2003.

**LAX**

**Ontario**

**Van Nuys**

**Palmdale**

**City of Los Angeles**

James K. Hahn  
Mayor

**Board of Airport  
Commissioners**

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Eileen N. Levine  
Cheryl K. Peterson  
Armando Velazquez, Sr.  
Mahalia Walter  
Leland Wong

Lydia H. Kennard  
Executive Director

**To Whom It May Concern:**

The City of Los Angeles, Department of Airports, Ontario International Airport in Southern California has had a history of use of the Intelagard Macaw portable unit. Several Macaw units were purchased for use for the Democratic National Presidential Convention held at Los Angeles. The Macaw units were utilized for special operations decontamination and for support of mass decontamination operations. The units were used for optimal dispensing of the Sandia National Laboratories (S.N.L.) decontamination foam and for the portable dispensing of other decontamination agents. The units were also capable of use for rapid portable fire extinguishment as needed. During training and actual operations for the convention the Macaw units performed as specified and proved to be reliable under the rigors of field use.

For the last three years the units have been assigned to our mass decontamination and Technical Decontamination Emergency Response Team and unit. This team responds to incidents and stages for major public events for which a potential exists for a terrorist attack. During these events the Macaw units have also continued to perform as specified, continued to be reliable, and have had no mechanical or maintenance problems in field use, training, or storage.

We plan to increase the number of Macaw units in our inventory in the future as budget permits us.

If you have any questions about our use of the Macaw units and our experience with them please feel free to contact me.

Best regards,

Dan Lindsay  
Fire Chief  
Chief Airport Safety Officer



**SANFORD AIRPORT AUTHORITY  
AIRCRAFT RESCUE & FIREFIGHTING**

1200 Red Cleveland Blvd  
Sanford, Florida 32773

(407) 585-4160 PH (407) 330-0678 FX

**Office of the Fire Chief**

January 2, 2004

Lorraine Cope  
Intelagard, Marketing Manager  
26 Garden Center, Suite 4  
Broomfield, CO 80020

Dear Lorraine,

Shortly after September 11, 2001 the Orlando Sanford International Airport Fire Department assessed its capability to mitigate threats to its facilities and personnel from nuclear, chemical and biological agents. Realizing the nuclear threat was outside our capabilities we began to investigate products that would fit into our budgetary restrictions yet still provide us with capabilities required for our Continuity of Operations plan goals. The Macaw Backpack was the answer. Teamed with Sandia Laboratories DF200 Easy Decon Solution the Macaw Backpack was the ideal vehicle to disperse DF200 in a timely fashion. Lightweight and air pump operated the Macaw provided us with a system that would allow one firefighter to enter areas without hose-lines to decon real or suspected areas of contamination. Within weeks of purchasing the Macaw Backpack and providing training to personnel its use in real-time situations became reality with numerous anthrax hoaxes. Although never used to decon these environments the knowledge that we had the capability was reassuring. The Macaw Backpack is an integral part of our Continuity of Operations plan.

Fuel spills are commonplace at airports as well as other industrial settings. These spills cause ramp evacuations, plane loading delays and ultimately departure and arrival delays. These delays all cost money initially but also cost in customer satisfaction. Realizing we had a tool to mitigate fuel spill caused delays we employed the Macaw Backpack in conjunction with liquefied microbial agents that encapsulate the hydrocarbon molecule eliminating vapor production. Unlike just covering fuel with an aqueous film forming foam these microbes actually consume the hydrocarbon molecule over time rendering them 95 percent ecologically safe in 90 days. Once fuel spills / leaks sources have been identified and stopped the Macaw Backpack is employed to provide quick and easy application of microbes. When applied and agitated by the fan spray nozzle within seconds vapor production is halted and normal work can resume in areas unaffected by ground liquid. Within minutes the fuel residue/microbe solution can be washed away and the entire area can be placed in service for ramp operations. The Macaw has really been an asset to our operation and we will continue to diversify its use wherever possible.

Sincerely,

John "Jay" Shanley  
Fire Chief



BY APPOINTMENT OF THE PRESIDENT

## United States Department of the Interior

NATIONAL PARK SERVICE  
Yellowstone National Park  
Wyoming 82190



Memorandum

July 18, 1998

To: Whom it may concern

Subject: Intelagard Fire Protection Systems

I am writing this memo as an expert witness. I have witnessed demonstrations of Intelagard compressed air foam systems in Yellowstone National Park, and am very impressed with the equipment. I am convinced that this equipment can significantly enhance the opportunity for structure protection for anyone, residential or professional, who lives or works with the threat of wildfire.

Most importantly, I was impressed with the simplicity and reliability of the system's operation. There is no question in my mind that, with minimal training, a homeowner could save his/her home from a wildfire by pre-treating the structure and landscaping and then evacuating to safety. The system could also be used to extinguish a small interior structure fire from outside the building. The Intelagard system is almost foolproof in its reliability. Unlike other systems I have evaluated that rely on either a gasoline engine or pump that can break, be subject to bad fuel or choke on dense smoke, or on an electric motor that will quit when the electricity is cut, Intelagard's use of stored air energy to power its system is simple, reliable and effective.

The Intelagard system is not only a significant mitigation and structure protection tool when pre-positioned adjacent to a residential structure within the urban interface, but also is a valuable tool for quick attack. I intend to install an Intelagard system at the Yellowstone Park Marina.

I have been assigned to several wildland fires as the structural protection supervisor, to protect residential structures from major wildfires. One of the best tactics has been to foam the structures, which keeps them from igniting from flying embers or heat, and evacuate to a safe place until the fire passes. I have achieved a very high success rate utilizing this tactic.

In short, I believe that Intelagard products are simple and well designed, and represent an important technological improvement in the field of structure protection. I am in no way connected to this company. I just think that they have developed some very good equipment, and I highly recommend them.

*Denny*  
Denny Sutherland  
Fire Chief  
Yellowstone National Park  
(307) 344-2190



# **INTELAGARD.**

*Received by Intelagard on January 22, 2001*

Good morning from frigid Oklahoma,

If you have been watching the weather, you know what a mess we have here. We have a couple of inches of ice on the roads, power lines down, trees falling everywhere, and it's colder than the dickens.

Last night we had a house fire in a rural area north of Savanna. I responded with my four-wheel drive and one other firefighter with the Macaw backpack. The pumper could not get up the hill to the residence, so we called for a backup 4 X 4 brush pumper. It took 30 minutes to arrive on scene. The structure was full of smoke when we arrived. When we popped the attic crawl space, we were greeted with a rush of flame. A quick spurt of class A foam knocked the flames down. We had a fire between the wall and fireplace chimney. As we tore the wall out, flames would start again. The Macaw performed as advertised. We extinguished the fire and completed the overhaul and mop-up with about 4 gallons of water.

I have been in the fire service for 30+ years and I'm telling you, that house would have burned to the ground if we had not had the Macaw unit! We put out a fully involved attic without a pumper, water supply, electricity, and no help. Just one good firefighter, an old broken down cantankerous fire chief, and the Macaw backpack unit.

Keep up the good work!

Don Capps, Chief  
Fire & Emergency Services  
McAlester Army Ammunition Plant  
dsn 956-6222 com (918)420-6222  
cappsdb@mcalestr-emh3.army.mil  
Semper Ubi Sub Ubi



City  
of  
Boulder  
Fire Department

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October 15, 1999

To Whom It May Concern:

In my 15 years in the wildland fire service, I have experienced the results of the urban interface disasters. Recently, the Oakland, Laguna and Malibu fires have burned over 5,000 homes and killed over 25 people. Reasons for this phenomenon, what some fire officials have called the fire of the 90's, are many.

Unmanaged forests on private and public lands

Historically, wildfires were the great mitigator. Wildland fires for centuries have sculpted the ecosystems of the deserts, forests, plains and even rain forests. Plants and animals are thriving today because they have adapted and survived in fire prone ecosystems, often times becoming dependent upon fire to maintain the health or viability of the ecosystem.

Because of the past 80 years or so of aggressive fire suppression, the vegetation is allowed to build up in unnatural proportions. For example, on the Front Range of Colorado, the grasslands transition into the Ponderosa Pine Forest. In this ecosystem, periodic and/or anthropogenic fires of low to moderate intensity would clean out the forest floor and remove ladder fuels. The fire frequency in this environment is estimated to be one fire in every 15 years. This frequent occurrence kept the forest from becoming overgrown and choked with downed and dead material. Additionally, it limited competition among the plants and aided the forest by keeping out insect infestations and fungal blights. When fire is removed, trees crowd each other and soon the sunlight is unable to reach the forest floor. Shrubs and grasses are unable to grow, and bio-diversity diminishes. What develops is a densely populated forest of unhealthy trees.

When a wildfire occurs in this setting, the results can be disastrous. Heavy fuel loads equate into larger and hotter fires. The massive amount of heat translates into a high mortality rate within the plant community. These fires become impossible to suppress because of their high rate of spread and BTU output. Unfortunately, homes are built in these forest settings. When these fires burn, all resources are concentrated on the structures and not the forest.

Inadequate resources / training

The urban interface situation is a dilemma for the fire departments and emergency management organizations. Training programs are driven by what fire departments respond to the most. Statistics reveal that up to 70% of all fire department responses are for medical emergencies. Equipment and training therefore are directed in this area. In this era of shrinking budgets, how can this problem be fully addressed by acquiring the

appropriate equipment and training to perform the job safely and effectively. Most urban interface incidents require large amounts of equipment and personnel to be mobilized in a short time. For example, in the Santa Barbara fire which burned more than 600 homes, 25 strike teams of engines were ordered to protect structures. A strike team consists of 5 engines and a leader. A total of 125 engines were ordered and still homes were ravaged by fire.

The urban interface fire is one of the most dangerous incidents which any firefighter or fire department may encounter. Evacuation and suppression operations usually occur simultaneously. Homeowners arrive to save pets and valuables while fire equipment is arriving. Air suppression resources are limited during these fires. Most urban interface fires occur when there is extreme fire danger and high winds. Airtankers and helicopters discontinue flying in winds of excess of 25 miles per hour. Engines constructed to navigate the wide streets of cities are no match for the narrow winding roads associated with mountain living. These engines usually lack the off-road capabilities and mobility needed in these situations.

Tactical operations during an urban interface fire are very different than normal operating procedures during structure fires. Hydrants, which normally have an endless supply of water may be compromised by the virtual numbers of engines utilizing the system. The ability to remain mobile is essential because of the rapid spread of the fire, especially by flying embers ahead of the flaming front. Many times engines are placed miles ahead of the fire to extinguish spot fires emanating from the main fire. Structure protection becomes the main responsibility of patrolling strike teams of engines. These strike teams are assigned to "triage" an entire subdivision before the fire hits. The basic philosophy of triage is to treat the homes which are savable and forget the one's that are not. There will never be enough resources to protect an entire subdivision, so do the best you can with what you have.

### Combustible homes in an combustible ecosystem

Historically, communities are planned with the priority on aesthetics. Homes that blend into the environment are a key element in the planning process. Hiding homes among the vegetation has been a common practice for years. Wood roofs, siding, decks and fences, yard accumulations and firewood all contribute to the combustibility of structures in the interface. Simply, what makes a home aesthetically pleasing in or near wildlands is usually what causes it to burn. Public safety must take priority over aesthetics. Planning departments and emergency response agencies have historically ignored each other during the initial stages of planning a community. Some communities have developed covenants which outline certain construction materials that must be strictly followed. For example, wood shake shingles are required in certain subdivisions throughout the country. As mentioned above, wildfires are a reality in the urban interface, whether natural or caused by man. When these fires occur homes are quickly threatened.

### Solutions

The land management agencies in the United States have been remiss in actively managing our public lands. The forestry practices of the past have proven to diminish and even destroy valuable ecosystems. There is no major consensus of what needs to be done to return our forests and wildlands into a mere replica of what they historically have been. Returning fire to vast ecosystems in an appropriate time frame can be politically sensitive. The debate of what is "natural" continues to be tossed around in academic circles.

Today, emergency responders are forced to choose what homes are savable and which are not. Since 1987, the majority of firefighter fatalities have occurred on wildfires. The question is, are firefighter's going to continue to risk their lives to protect homes in the urban interface?

Constructing homes in wildland areas without the input of emergency services personnel is a huge mistake. Planners, architects and fire departments need to be involved in the initial phases of development. It is time to adopt mandates not only on public lands to manage vegetation but also regulations necessary to provide a community a safe infrastructure.

All of the above seem to be the answers to the problem. Realistically, these programs will take a considerable amount of time to initiate. Millions of dollars must be committed to these programs. What can homeowners do to protect themselves from the urban interface disaster?

1. Home protection systems

In all my years in the fire service one product seems to rise to the top. The Intellagard System. The Foam System is simple, user friendly, relatively free of breakdown and there is no fuel to change or go bad.

The system utilizes Class A Foam. This technology, relatively new to the wildland firefighting arena, expands the capability of water by making water wetter. Basically, water becomes a more efficient extinguishing agent by penetrating into the wood and not running off. Another property of Class A Foam is the ability of water to cling to vertical surfaces. These vertical surfaces on your home may be your roof, siding, eaves and decks. By forming a bubble you trap water, the water penetrates and clings to these surfaces. The bubble action also provides another advantage to firefighting by insulating and separating fuels.

There are many home protection systems on the market. Most utilize gas pumps to pump water from your pool or other water source. After the recent fire storms in Southern California I witnessed that some of these pump systems have failed due to the heat or the gas had turned to varnish in the tank. On one gas pump

the suction hose had been melted through.

The Intellagard System is not only being installed in communities, but also on fire engines. The system has been field tested by the Boulder Fire Department with remarkable results. The system is utilized on initial attack, structure protection and during prescribed fires to pre-wet and pre-treat fuels.

At the most recent Class A Foam seminar in Boulder, many fire equipment companies from the United States displayed their foam systems. The quality and consistency of the Intellagard system matched the most expensive systems on the market. Not only is this technology being utilized in the wildland urban interface arena, but many municipal fire departments across the country have adopted this technology for structure firefighting.

The flexibility of the Intellagard System is another advantage above all other home protection systems: A new Class A Foam has been developed strictly for structure protection. The engineering of the Intellagard System allows it to provide high expansion Class A Foam via a motionless mixer. The motionless mixer agitates the foam solution further, therefore contributing to a much more effective bubble structure. This bubble structure allows more water to be trapped and contributes to the durability of the foam.

Terra Foam has the ability to provide a high level of protection by forming a barrier between the structures and the fire. The consistency of the Terra Foam is unlike regular Class A Foam. The expansion of the Terra Foam that the Intellagard System provides is unparalleled by any other system. The advantage of the Terra Foam is its ability to cling to smooth surfaces and durability. This is a huge advantage in protecting structures since firefighter's can treat homes and retreat to a safety zone as the fire hits. The durability is remarkable. In tests in Laguna Beach, the Terra Foam was applied at 8:00am and was still clinging to vertical surfaces at 4:00pm.

The most extreme wildland fire behavior in the world is exhibited in California and Australia. The vegetation contains resins or oils that add to the flammability of the fuel. Just recently, the State Fire Marshal of California, Ronnie Coleman, mandated the utilization of Class A Foam on all fires.

For the money, ease and relatively free maintenance schedule the Intellagard System is worth every penny. If a fire department is aware you have this system your home may survive even the most severe of these fires due to the confidence in the system. The system may allow any fire department to make a stand at your residence.

Marc R. Mullenix  
Wildland Fire Coordinator

September 14, 1999

**BOEING**

To: Intelagard  
John Breedlove  
Dennis Smagac  
26 Garden Center  
Broomfield, CO 80020

From: Boeing-Irving Co.  
Chip Willis  
3131 Story Road West  
MC, TR-23  
Irving, TX 75038

Subject: Your foam backpack unit

I would like to commend you on an outstanding piece of equipment. For those of us in the emergency response world, it's a real satisfaction when we find a piece of equipment that performs as advertised. When that piece of equipment performs better than advertised, outstanding sometimes does not lend justice to its performance.

We have been extremely pleased with the performance of your foam backpack unit. In each application we have tried, we have actually enjoyed using the unit. For emergency responders to say we enjoy a piece of equipment is extraordinary. I honestly have not had one complaint from anyone on the team about the unit. There have been a couple of times when members have fought over who was going to use it next.

**BOEING**

The easy use, comfort, and capability have really amazed everyone. As an industrial emergency response team along with lending outside aid, we respond to a variety of calls. So far we have found the foam backpack unit to work extremely well in laying ground cover for grass and brush fires as well as in HAZMAT incidents. The foam has allowed us to reduce the PPM exposure and set up a suppression barrier until we could immediate the incident.

We have even had neighboring departments wanting to barrow the unit for wild land fire training. After a short time they have considered purchasing their own unit. I'm sure they will be as happy with their unit as we are with ours.



Chip Willis  
Fire/Safety Coordinator  
Boeing-Irving Co.  
Irving, TX