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GARDEN STATE FIREWORKS

THE SANTORE BROS.
WORLD CHAMPIONS

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Garden State Fireworks, Inc. is deeply saddened by the unfortunate sequence of events that lead to the entire San Diego display to ignite simultaneously. Garden State Fireworks has been serving customers for over 120 years and we are proud of our proven track record of providing quality and most importantly safe fireworks displays throughout the country. The safety of our operators and the audience is our number one priority in every event we perform and we would like to stress that at no point before, during or after the display was there any risk of safety for our staff or the audience. Our strict adherence to safety policies and the strength and quality of our installations allowed our equipment to withstand the simultaneous ignition without a single threat to the structural stability of same.

The San Diego Big Bay Boom is one of the most logistically complex displays in the world due to the approximate 14 mile span of the five locations involved in the display. In order to simultaneously coordinate all locations to a radio simulcast, state of the art pyrotechnic computerized systems were utilized.

In an effort to be over-prepared for any disruptions in communications, a secondary back up computer file was created for the display. The technical explanation of the creation and implementation of the back-up file requires a significant understanding of the computer firing systems themselves. Basically, if any of the five locations do not receive the initiation code, the secondary file allows each of the five locations the opportunity to independently 'manually' initiate a new sequence that will allow for seamless synchronization to all locations. Our technicians out on the barges have an independent protocol to activate this sequence if any of the automatic test sequences don't confirm open communication. Both the technical aspect and logic of this failsafe are all sound implementations of the computerized firing systems. This back up method has been executed successfully on countless occasions by our company.

After extensive forensic analysis by the hardware and software manufacturer and our own review of our implementation of the equipment, a full understanding of the simultaneous ignition has been achieved. The primary and secondary files were tested ad nauseam by our technicians in the weeks and hours leading up to the display and everything was perfect. All aspects of the display in the bay were completed and tested two full days in advance of the production and we were completely prepared to execute as normal.





Each of the five locations involved in the display have their own computer controller into which the files are downloaded. Before the two files are loaded into each of the five computer controllers, the primary and the secondary file are merged through the software to create a new file that is then loaded into each of the controllers. During the downloading process, an unintentional additional procedural step occurred in the loading process which allowed the creation of an anomaly that 'doubled' the primary firing sequence. The primary sequence then consisted of a sequence that would fire the entire display simultaneously and then proceed to fire the display in the proper sequence.

The time for the presentation arrived and all systems were ready to go. The design of the code had an additional layer of test measures built in that would provide all operators visual confirmation that all systems were receiving code a full five minutes before the production was to begin. So effectively, the production was designed to start running 'in the dark' five minutes prior to the actual launch time. All clearance was obtained from Police, Fire and Coast Guard to begin the pre-roll command sequence and prior to initiation of same, all zones and personnel were in a safe lockdown.

The command code was initiated, and the 'new' file did exactly what it 'thought' it was supposed to do. It executed all sequences simultaneously because the new primary file contained two sets of instructions. It executed the file we designed as well as the file that was created in the back up downloading process.

While this is a highly complex and technical process, it is important to understand that each display code is an event in time. Our sophisticated back up process was designed to create a primary time event and a secondary event available to initiate one or more locations that may not have received the primary code at a point later in time thereby insuring pinpoint synchronization. Instead of creating one primary event and one secondary event the process yielded two primary events.

Contrary to numerous opinions and theories, the simultaneous ignition was not due to any sabotage or massive computer hardware failure. The display sequence started exactly when it was expected to and the systems executed the file the way it appeared. Sadly, the file it executed was the double file created in the back-up plan download process.

The complex nature of delivering a display of this magnitude requires extensive planning and adherence to our safety procedures. We are proud that our extensive planning provided a safe environment under the most extreme circumstances. We are heartbroken that the people of San Diego did not have a chance to witness our efforts as intended. Our hearts go out to the Big Bay Boom committee, the people of San Diego, every volunteer, sponsor and Police, Fire, Coast Guard and emergency responder that worked so hard to make this event the massive success it should have been.



We remain confident that we did everything we could to deliver what should have been the best display in the history of San Diego. The equipment used to deliver this highly complex display is the most advanced system available to the industry. Additional measures will be taken to scrutinize future productions with the knowledge gained from this experience. Neither Garden State Fireworks nor the systems manufacturer have encountered this issue and based upon our combined analysis we are certain the situation will not occur again. We can assure our existing and future clients that this anomaly has been identified and this isolated incident is at no risk for recurrence.

We stand behind our safety policies that exceed industry performance and standards as was demonstrated in the most unforeseen circumstance. We are thankful for the support and understanding of the community, our loyal customers and dedicated fans worldwide. Garden State Fireworks looks forward to the opportunity to make good on our word of delivering the display to the people of San Diego as it was intended and we are honored to be involved in an event supporting the San Diego Armed Services YMCA.

Please contact August N. Santore, Jr. with any questions.