

# The Marvin Messenger

## 9th F-35 AME Summit Stresses Affordability

### Special Points of Interest:

- 9th F-35 AME Summit
- MEC Awarded LRIP 10 for F-35 AME
- MLS receives additional Stryker & Abrams Contracts
- “Big Army” Looks to Flyer 72 to Meet Mobility Needs
- Rapid Prototyping a State of the Art Design
- Mastering & Measuring the Art of Customer Satisfaction
- Dec. Work Anniversaries
- In Memoriam: Donald Bottje & German Bracamonte
- 55th Anniversary Celebration Scheduled for March!



Participants in the 9th F-35 AME Summit Hosted by Marvin Engineering Co.

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The 9th F-35 AME Summit, held at The Marvin Group’s Material Fulfillment Center from 17-19 October, was attended by representatives from Lockheed Martin, DCMA, and all five international partners including Aerea, Ferra, Kongsberg, TAI and Terma.

The theme of this year’s summit was focused on *Affordability*, which is an issue certainly not unique to the F-35 Lightning II Program, but one for which it tends to draw significant attention.

Marvin Engineering, working in

collaboration with the international partners and Lockheed Martin, has been doing its part to help reduce risk and start realizing cost savings over the life of the program, even as it prepares for a rate ramp up of Alternate Mission Equipment (AME) to support the increased tempo and transition from Low Rate of Initial Production (LRIP) of the aircraft itself to full production rate.

Despite a lull in procurement of AME between LRIP 9 and the recently awarded LRIP 10, the

pace of AME being manufactured by MEC and the international partners, and qualified here in Inglewood prior to customer delivery, is going to increase significantly to meet operator needs.

Among the equipment covered under this classification are multiple configurations of the aircraft’s Air-to-Air and Air-to-Ground Pylons, Advanced Rail Launcher and a variety of internal Weapons Bay Adapters used

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## From the President's Desk...

As we wind down yet another year, I want to pause for a moment and acknowledge some significant collective achievements of our various business units in 2017.

At the end of August, Marvin Engineering received the single largest contract in its five plus decade long history, for Alternate Mission Equipment (AME) on the F-35 Lightning II via Low Initial Rate of Production Lot 10 (LRIP 10). The F-35 Program is widely reported as the most expensive weapons systems program in history, and what is unquestionable is its importance to the security of the United States and our allies who have already begun operating this advanced aircraft.

MEC is very proud to support Lockheed Martin and its customers in provisioning stores carriage and release systems that enable the F-35's combat capabilities. Working with our international partners, we have made significant investments in equipment, facilities and people to support the upcoming transition to full rate production of the aircraft starting in 2019.

Marvin Test Solutions, with whom MEC has a very collaborative relationship, has also secured the largest contract in its history, working on a very important armament tester program for the U.S. Air Force in collaboration with a major prime contractor. We are also anticipating that its innovative MTS-235 test set will start to gain additional sales as it is the

identified depot-level solution for the F-35, and was designed to fit into a compact footprint for those operators who are interested in an I-Level armament tester which can be deployed in more austere environments.

Marvin Land Systems has also been recognized with major contracts from a major customer, General Dynamics Land Systems (GDLS), whose Stryker and M1A2 Abrams platforms are being upgraded as security concerns, particularly in Europe, continue to mount.

MLS has designed an innovative low-profile, quiet-running Auxiliary Power Unit (APU) for the Abrams tank which gives the vehicle a "silent overwatch" capability and eliminates the need to run the fuel-intensive main turbine engine to run electronics, or to rely on batteries. It continues to contribute various sub-systems to the environmental controls used in multiple variations of the Stryker 8x8 wheeled vehicle.

Flyer Defense continues its growth trajectory, which really took off in late 2013 when the Flyer 72 was selected as the GMV 1.1. winner by U.S. Special Operations Command. Its partnership with another division of General Dynamics, Ordnance and Tactical Systems (GDOTS) has been mutually beneficial. Another 300 Flyers are being procured to equip 5 Airborne Brigade Infantry Combat Teams which form the backbone of the Army's



*Howard Gussman, President of  
The Marvin Group*

available "rapid reaction" capabilities. Flyer and GDOTS are currently pursuing other requirements for wheeled light tactical vehicles in both the U.S. and abroad.

Finally, I am reminded this holiday season due to a number of recent events, including the untimely loss of members of our extended Marvin family, of the importance of maintaining our health and not neglecting those relationships with family and friends. While we are working for the warfighter, let's not forget those closest to us as well.

To a great 2018 and Happy Holidays to all!

## F-35 LRIP 10 for Alternate Mission Equipment Awarded

On 31 August 2017, Marvin Engineering was pleased to receive a Purchase Order from Lockheed Martin Aeronautics for Alternate Mission Equipment (AME) associated with LRIP 10.

The LRIP 10 AME is the largest single contract in MEC history and will be the first such order which will be able to take advantage of

MEC's newly installed robotic coatings capability, located in the High Bay of the 261 Building, adjacent to the F-35 Assembly Cell.

While F-35 AME manufacturing was in something of a lull during 2017 due to a gap between LRIP 9 and 10, this order represents the tip of what is expected to be a surge

in production needs, with LRIPs 11 and 12 expected to be awarded within a year.

The F-35 aircraft itself is scheduled to enter full-rate production in 2019, and given the importance of the external pylons, missile rails and weapons bay adapters to the plane's warfighting capabilities, the quantity of AME produced by

MEC and the international partners will continue to grow to meet demand. Lockheed Martin is currently projecting more than 2,400 aircraft of the three variants to be operated by the U.S. Air Force, Navy and Marines, with more than 700 additional aircraft procured by allies.

# U.S. Military Sales in Fiscal 2017 Reach Nearly \$42 Billion

As of the conclusion of the U.S. Government’s fiscal year 2017 at the end of this past September, completed military sales to international customers tallied \$41.93 billion, which was nearly a 20 percent increase over the previous year’s total.

Of this total, the breakdown via sales channels was as follows:

- \$32.02 billion via Foreign Military Sales (FMS)
- \$6.04 billion via Foreign Military Financing (FMF)
- \$3.87 billion via other DoD means

Geographically, FMS/FMF sales were focused all over the globe, although the run-away geographical region where sales were dominant, as might be expected, includes the volatile Middle East:

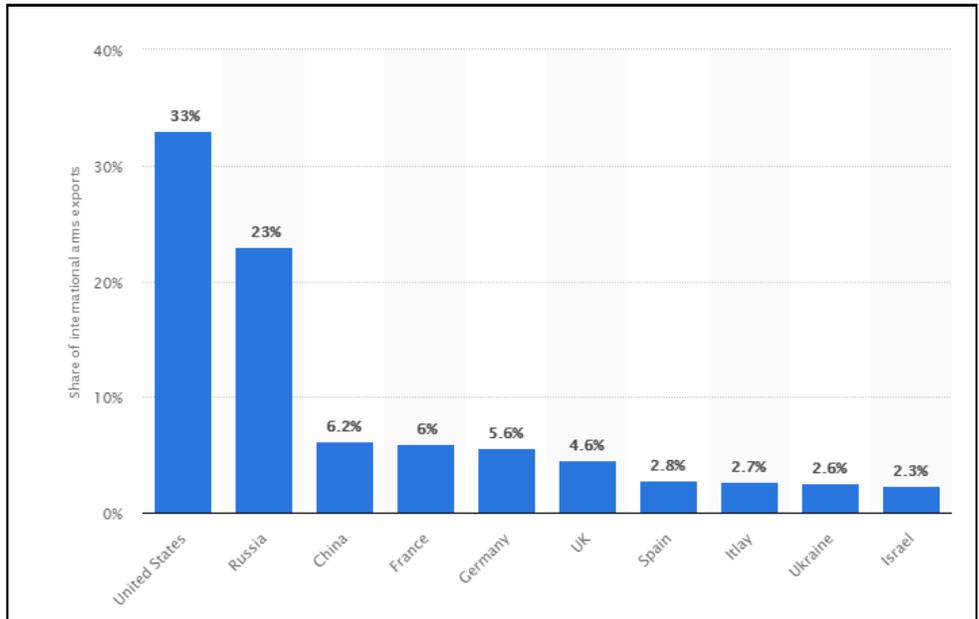
- Approximately \$22 billion in Central Asia/Near East
- \$7.96 billion for Indo-Pacific
- \$7.3 billion for Europe
- \$641.6 million in the Western Hemisphere
- \$248.6 million in Africa

In recent years, defense-related sales have been somewhat volatile, recording \$33.6 billion for Fiscal 2016, more than \$47 billion in Fiscal 2015 and \$34.2 billion for Fiscal 2014.

While some might extrapolate that based on this recent trend, 2018 could see a dip in sales, early forecasts suggest this may not be the case, since a number of large deals have still not been signed, including a significant arms package for Saudi Arabia.

The U.S. is currently the largest exporter of major weapons systems in the world, commanding a third of the global market share,

trailing by Russia at 23 percent, and more distantly by China at 6.2 percent, France at 6 percent, and Germany at 5.6 percent of global market share.



Top Global Exporters of Major Weapons Systems, 2012–2016 (Statista.com)



F-15 (Boeing) and F-16 (Lockheed Martin) aircraft, both of which saw sales in FY 2017

# The Resurrection and Recovery of Receiving Inspection

By Jamie Avina

In May and June of this year, Receiving Inspection in Inglewood was averaging ten to thirteen days to process inspection jobs; our goal at the time was five.

A multitude of factors contributed to this problem. The organization invested heavily in state-of-the-art measuring equipment, but we were challenged with creating new CMM programs. We were in the midst of migrating from Virtual DMIS to PC-DMIS and only had one full-time offline programmer to support the overwhelming demand. Additionally, our huddles were not all hands, so we did not fully engage all the people in our group.

Our huddles were scheduled for 9:15AM daily, but I would routinely be called into meetings and was not always available to

attend. The unintended message that this sent to the group was that these huddles were not so important. The reality was that the trajectory we were on was failing to meet the needs of the organization, I was failing my team as a leader, and I was failing the organization, and to be in this state was emotionally taxing.

My executive leadership challenged me to develop a recovery plan. It needed to have a quick turnaround time, and it needed to happen without compromising quality.

This is where I deeply reflected on the situation, I turned to my Lean Black belt training for solutions and implemented the following:

**June 21st:** A value graph and roadmap were created which initially focused on quick hits and was submitted to my direct

executive reports; I made a personal commitment to reduce the average days by one day per week, which would have us reach our goal of five days the first week in August. There was no guarantee that the implementation plan would yield the desired results, but we implemented what we felt were the best options available. The morning huddles became all hands and mandatory. I turned down meetings so that I could drive the huddles daily. In addition, they became the vehicle that instilled the mindset of holding the individual's performance accountable to the team.

**June 29th:** Executive leadership helped in getting support with models and removing larger roadblocks which hampered our ability to process product in the most efficient manner. We consolidated the CMM program-

ming function under QC which allowed for rapid response time to any CMM issues. Following the servant leadership model, the staff tasked management to provide the tools and implement their ideas to improve the flow.

**July 14th:** We procured additional CMM probes to standardize the CMMs set-ups. This was a result of the team's ideas.

**August 8th:** The team reached their goal of an average of five days to process product.

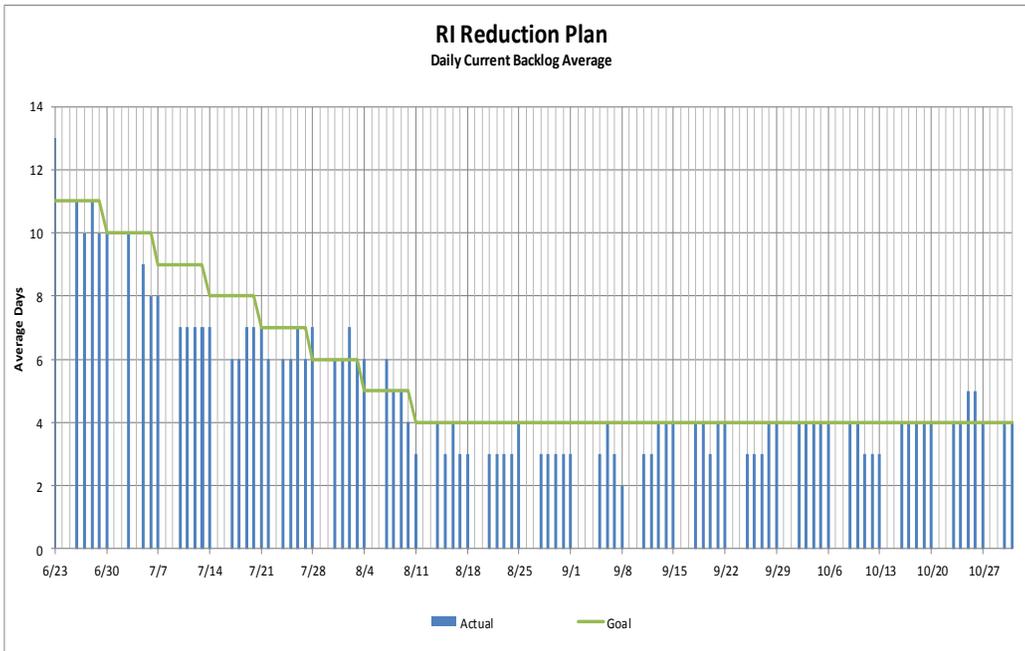
**August 10th:** We reached an average of four days. Shortly after, the VP of Quality, Lynne Kunster, put out what we thought was an unattainable challenge; if the team hit an average of two days, she would dye her hair pink. To support this challenge, the Executive VP, David Gussman, joined Lynne to color his hair as well.

**August 11th:** The team achieved an average of three days.

**September 8th:** The team hit an average of two days. This was a historic number for the organization. This was no easy feat, but this challenge is driven by a team who became aligned, engaged, and truly understands the expectation and impact their performance has on the organization. The team's determination to succeed went above what most thought was realistically possible.

The lesson that we collectively learned is that with focus, determination and communication, we were capable of achieving more than we ever expected of ourselves, and from each other.

Now it is up to us to sustain this



## Demand for Abrams & Stryker Upgrades Good for MLS

Although some pundits were prematurely announcing the irrelevance or obsolescence of “heavy iron” on the battlefield, after years of counter-insurgency focused efforts the U.S. Army is again focusing on upgrading and achieving “overmatch” with its primary ground vehicle platforms.

In September, General Dynamics Land Systems (GDLS) received two contract awards from the U.S. Army to upgrade the M1A2 Abrams, the latest variation of its M1 series main battle tank which first entered service in 1980. The Abrams, which has been steadily upgraded in the ensuing period, has a proven combat record in part due to improvements in protection, firepower, electronics and more.

Marvin Land Systems (MLS) has designed an innovative, low-profile

Auxiliary Power Unit (APU) which is incorporated into the SEPv3 upgrade, which is being initially performed on 45 vehicles to again improve armor, communications and provide an alternative source of power to the main turbine power plant or batteries. The APU provides power to critical systems without the need to run the more noisy and high fuel consumption turbine, allowing for “silent overwatch” which enhances combat capabilities.

GDLS is also in the process of upgrading its wheeled Stryker vehicles, which are configured for a variety of roles. Among the upgrades rolling out for this vehicle are improved electrical power systems, vehicle survivability upgrades, and for “Dragoon” configured vehicles, a 30mm cannon to provide increased firepower.



## MTS Personnel Recognized at 2017 IEEE AUTOTESTCON

This past September, two Marvin Test Solutions’ veteran employees received prestigious awards at the 2017 IEEE AUTOTESTCON Conference and Exhibition held in Schaumburg, Illinois. This is the first time that individuals from the same company have been awarded these distinctions.

Mike Dewey, MTS Director of Marketing, was named the winner of the 2017 Slattery Award by the National Defense Industry Association (NDIA) Systems Engineering Division (SED) Automatic Testing Committee (ATC).

The Slattery Award honors the memory of John Slattery, an engineer with the General Dynamics Electronics Division and former Chairman of the MATE Users Group Control and Support Software Committee. It is presented annually to recognize an individual who best

characterizes John Slattery’s contributions to the industry, including technical excellence, innovation, and professional contributions to the advancement of the industry, as well as his peers and colleagues.

Mike Dewey has over 30 years of industry experience, holds multiple patents and has written extensively on automatic test topics for publication in industry journals.

Mike Frey, MTS Business Development Director, received the 2017 Frank McGinnis Award from the AUTOTESTCON/IEEE Committee.

The Frank McGinnis Award is presented to recognize a career of outstanding leadership, professional management, individual initiative and technical contributions in automated test engineering, as well as active participation in



Mike Frey (Left) & Mike Dewey (Right), recipients of the 2017 Frank McGinnis Award and 2017 Slattery Award respectively

AUTOTESTCON.

Mike Frey has been a member of the ATE community for nearly 4 decades, starting with a USAF flying career in FB-111A, , KC-135, and OV-10A, and holds the distinction of being the first B-1B Avionics Squadron Commander, where he was instrumental in bringing the aircraft to IOC in 1986.

## Acknowledging Our Veterans and Their Service



By Lisa Gussman-Zairi

The Marvin Group proudly observed Veterans Day at company headquarters on Friday, November 10, 2017. Our extraordinary Veterans came out in full force. The assembly began with lots of excitement and handshakes between brethren and Executive Leadership. The festivities featured heartfelt words of praise, recognition and a special gift in honor of their bravery and selfless commitment to our country. A particularly special moment was when each of the Veterans stated their name, sector and years of service.

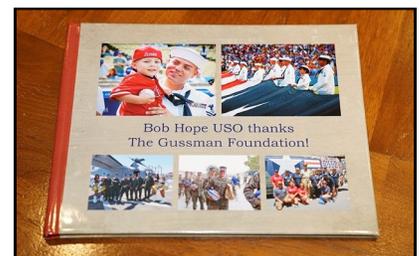
Bob Kurkjian, the Executive Director of the Bob Hope United Services Organization (USO), graciously attended the assembly to help us honor our veterans and presented Madeline Gussman with a beautiful photo album as a thank you for her continued support of the Bob Hope USO.

It is with great pride and admiration that the Marvin Group continues to support all Veterans not only by way of the products they produce but also in ownership's acts of charity to the warfighter.

Your Marvin Group veterans:

Aaron Marrero  
Alex Cruz  
Alex Galvan  
Alfredo Robles  
Aharon Enriquez  
Angelo Cerutti  
Bobby Thomas  
Bret Aguilar  
Brian Danhieux  
Carlin Stevenson  
Charles Strickland  
Christian Quinones  
Christopher Spickler  
Donald Fields  
Donreid Wanzo  
Dorian Thompson  
Dustin Parsons  
Edward Martinez  
EJ Chiartano  
Emmanuel Sanchez  
Ernesto Montoya  
Ernie Gutierrez  
Eugene Nichols  
George Ossa  
Jeremiah Astilla

Jerry Friedman  
Joe Ford  
Jorge Pantoja  
Joseph Rhoades  
Louis Alva  
Lowell Parsons  
Mario Delgadillo  
Mark Gomez  
Marlon Cardona  
Matthew Koegler  
Matt Reynolds  
Michael Olmos  
Michael Vega  
Peter Chu  
Randy Harden  
Reginald Little  
Richard Willoughby  
Rick Alo  
Robert Calima  
Robert Kirk  
Sal Fernandez  
Santos Renovales  
Sergio Velasquez  
Steve Rodriguez  
Steve Sargeant  
Steven Sprague



Tyler King  
Victor Guerrero  
Vincent Williams  
William Cherry

## U.S. Army Signals Interest in Flyer 72 for Mobility Needs

With the successful contract award to General Dynamics Ordnance and Tactical Systems (GD-OTS) and Flyer Defense of the GMV 1.1 requirement for U.S. Special Operations Command (SOCOM) back in 2013, the Flyer 72 emerged as a highly capable, mission flexible platform ideal for use by elite troops, light infantry and expeditionary forces requiring mobility and exceptional off road performance.

This did not go unnoticed by the larger U.S. Army, which in addition to its specialized GMV 1.1 requirement for the elite special operators of SOCOM, is also pursuing two other tactical wheeled vehicle requirements. These consist of a Light Reconnaissance Vehicle (LRV), to be equipped with a 30mm automatic cannon; and a troop-carrying Ground Mobility Vehicle (GMV), which was formerly known as Ultra Light Combat Vehicle (ULCV) and should not be confused with the GMV 1.1. The troop-carrying GMV calls for the ability to safely transport a squad of 9 individuals with their combat gear, something a standard HMMWV is not capable of.

While there are a number of competitors in this space, and the Oshkosh Defense awarded Joint Light Tactical Vehicle (JLTV) has been earmarked as the eventual HMMWV replacement across U.S. Armed Services, GD-OTS and Flyer seized upon the opportunity to demonstrate the

flexibility of the Flyer platform to meet the GMV requirements. With its 72 inch wide chassis and a 126 inch wheelbase, the Flyer 72 Advanced Light Strike Vehicle (ALSV) was sufficiently robust and appropriately sized to accommodate up to 9 passengers without compromising vehicle performance.

Due to delays in the GMV Program, procurement has been split into two phases and the U.S. Army has placed an order for 300 Flyer 72 units in the GMV configuration. This was done to support 5 airborne infantry brigade combat teams via the SOCOM GMV 1.1 contract vehicle.

The Flyer family of ALSV's consists of two distinct chassis, the 72 inch wide Flyer 72, and the 60 inch wide Flyer 60. The latter was deliberately sized to allow internal carriage in the V-22 Osprey, the tilt wing aircraft which has steadily been proving its capabilities and usefulness as a hybrid design offering features and benefits of both fixed and rotary wing aircraft.

Both base chassis of the Flyer lineup can be rapidly configured to perform a variety of missions including light strike, reconnaissance, rescue/recovery, C4/ISR, general mobility, anti-armor and more. Flyers feature optional armor kits which protect up to NATO STANAG Level 1 standards, and can mount at various stations a variety of light, general purpose, and heavy machine



*Flyer 72 in 9-Passenger Ground Mobility Vehicle (GMV) Configuration*



*Various Configurations of the Flyer Vehicle Family in Convoy Formation, August 2017*

guns, automatic grenade launchers, anti-armor missiles and even the 30mm chain gun adapted from the AH-64 Apache.

The Flyer 60 is capable of carrying up to 5 passengers, while the Flyer 72, in its GMV configuration, carries up to 9 individuals. Both vehicles offer highly capable off road performance, superior to the current

HMMWV, with generous approach and departure angles, ground clearance, and a unique "center steering" arrangement rather than left or right hand driver positioning.

An electric drive version of the platform has been demonstrated and is undergoing further development.

## Recent Customer Visits to The Marvin Group



Missile Defense Agency (MDA) and THAAD Program Office Team Visiting The Marvin Group

The last few months have been busy ones here in Inglewood, with a number of customer visits occurring to catch up on existing business and to discuss potential future business.

Among the companies visiting since September were:

The Missile Defense Agency (MDA) and THAAD Program Office, to discuss The Marvin Group's support for specialized shelters. The Terminal High Altitude Area Defense (THAAD) system is receiving additional interest in the United States and among allies due to rising ballistic missile threats from countries such as North Korea, Iran, and even insurgent groups that certain nation states are overtly or covertly supporting.



Terma Delegation Visiting Marvin Engineering Co.

Terma, the Danish company which is a key MEC partner for F-35 AME, paid a visit independent of the 9th F-35 AME Summit to discuss ongoing collaboration between the companies. A Memorandum of Understanding (MOU) was publicly announced between the two companies at this summer's Paris Air Show.

The U.S. Navy visited MEC, with representatives from PMA-201, PMA-265 and DCMA, to discuss naval readiness requirements and support that MEC is providing to naval aviation, including the LAU-127 and BRU-32 programs for the fleet's F/A-18 Hornets and Super Hornets.

The F-35 Joint Program Office (JPO) conducted a visit to Inglewood ahead of the F-35 AME Summit for briefings on our horizontal sustainment solutions and ongoing support for the program.



U.S. Navy's PMA-201 and DCMA Visiting Marvin Engineering Co.

SAAB of Sweden was also in town to discuss potential MEC support on development of further armament solutions for its JAS-39 Gripen fighter. The Gripen is a light-weight, multirole fighter which was designed to replace the earlier Saab 35 Draken and Saab 37 Viggen. The aircraft entered service with the Swedish Air Force in 1997 and its most recent "E" model (single seat) and "F" model (tandem seat) are in the process of rolling out. Other Gripen operators include the Czech Air Force, Hungarian Air Force, South African Air Force, and Royal Thai Air Force. The Brazilian Air Force has an order pending for as many as 100 of the latest model Gripens.

A number of other European, African and Asian nations have expressed interest in the Gripen which, in some instances, has been leased to operators as an incentive.

## Welcome To Our New Hires!

Please give a warm welcome to the latest hires from across The Marvin Group:

Ahmed S. Abo Tehein  
Eric Acosta  
Jessica E. Aguilar  
Juan J. Alvarez  
Ricardo Ambrosio  
Kevin S. Anglim  
Rogaciano Aviles  
Jacob A. Ayala  
Erik Batista

Valentin Cardoso Juarez  
Robert J. Cave  
Tianxiao D. Chen  
Maria G. Diaz  
Thinh Do  
Lisa Durette  
Gabriela Escobar  
Daniel Garcia  
Scott Haas  
Michael E. Jarkow  
Gevork Kazanchyan  
Robert L. Kirk

Jose Lara  
Reginald Little  
Juan E. Lopez  
Juancarlos Mariano  
Kevin Martinez  
Sergio A. Melendez  
Kenny Mok  
Abran Morales  
Tuan Nguyen  
Anthony Ocampo  
Bryan K. Overton II  
Raymond Pohja

Shai Raiter  
Jason Rico  
Jesus Rosales  
Kenneth Ross  
Marisol Serna  
Christopher Spickler  
Gloria Stanley  
Albert Tang  
An Thai  
Emily Trinh  
Reginald J. Washington  
Cynthia Zuniga

## BRU-32 Kaizen Continues the Lean Journey

By Michael Lutu

The Lean Team has recently turned their focus to two of Marvin Engineering's major ongoing programs: BRU-32 and LAU-127. The Lean Black Belts are working closely with the Ejections and Launcher IPTs to improve our performance and better support the needs of our customers. These two programs were the subject of two recent visits from our Lean education partners, UTEP (University of Texas, El Paso) and Lean Sensei. The work with UTEP is a component of Marvin Engineering's participation in the DoD Mentor-Protégé Program via the Office of Small Business Programs and under the sponsorship of the U.S. Air Force.

Back in August of this year, we had a week-long value stream mapping event with some continuous improvement experts from UTEP, conducted as part of our technology and knowledge transfer effort under the mentorship of Lockheed Martin Aeronautics.

We made a high-level process map to show how information and material flow on the LAU-127 Program we're currently working. From there we were able to identify areas of the process that had significant opportunity for improvement. This allowed the Lean



Black Belts to see where they could apply Lean tools and methodologies like waste reduction and 5S to improve our performance.

In September, we took a similar approach on the BRU-32 Program, when Lean Sensei came to our facility for a similar event. We followed the same process to identify opportunities within the BRU-32 current state of manufacture. We saw that there were common themes among both programs which mostly revolve around shared resources and competing priorities.

As a result of this discovery, the teams are preparing smaller *kaizen* projects that focus on the major areas of improvement.

Both LAU-127 and BRU-32 are of vital interest to the U.S. Navy, as this armament is integrated on the F/A-18 Hornets and Super Hornets which form the backbone of the carrier air wing.

We look forward to building upon the great efforts done by everyone involved so far. Stay tuned for more updates on our improvement progress on both of these critical programs!

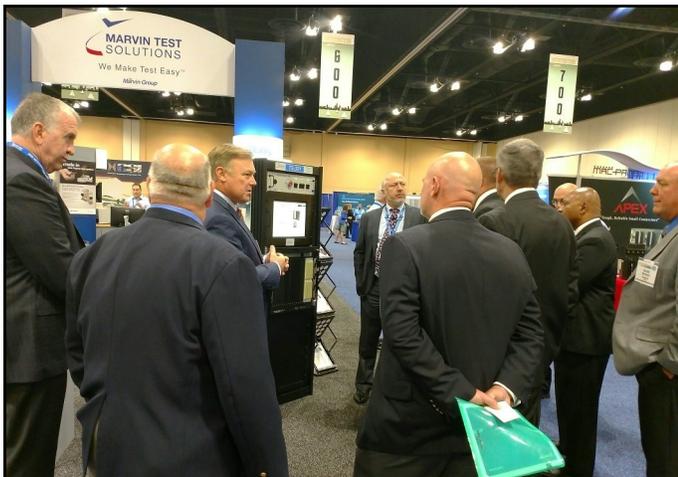
## Trade Show Roundup for Autumn 2017



2017 F-16 & Proven Aircraft Worldwide Review



2017 F-16 & Proven Aircraft Worldwide Review



2017 AUTOTESTCON



2017 Air Force Association (AFA) Air, Space & Cyber Conference

This autumn has been a busy trade show season for the companies of The Marvin Group, which have sent delegations to exhibit at or walk a number of domestic and international Aerospace/Defense trade shows.

Among the shows that have been covered these past few months are the F-16 & Proven Aircraft Worldwide Review; the Air Force Association's Air, Space & Cyber Conference; AUTOTESTCON; the Association of the United States Army (AUSA) Annual Meeting; Seoul ADEX; NDIA Air Armament Symposium; and Combat Helicopter.

Upcoming shows as of the time this was going to print include the

Logistics Officer Association (LOA); F-15 Worldwide Review; and the Dubai Airshow, which concludes the 2017 tradeshow calendar.

Early shows planned for attendance in 2018 include the U.S. Air Force's WEPTAC (ACC) and Singapore Air Show.

The Marvin Group makes every effort to connect with current and prospective customers throughout the world, and we're looking forward to another busy tradeshow calendar next year as well!

## New MEC Robotic Coatings Capability Reaches IOC

Marvin Engineering has reached an important new milestone following an on-site visit in late September from Lockheed Martin Aeronautics. Subject matter experts viewed the newly installed paint robot in the 261 Building's High Bay.

The Lockheed Martin team, led by Ron Franks, visited MEC under the auspices of the DoD's Mentor-Protégé Program. Officially kicked off in April, the program has recently passed the halfway mark of the initial year.

The four booths which comprise the robotic coatings capability represent the first automated technology deployed at The Marvin Group, and are a significant investment of capital and resources by ownership. The robot has been deemed to have achieved the state of Initial Operating Capability (IOC) and will be used on production products very shortly.

This additional capability has been deployed in advance of production rate increases on the F-35 Pro-



gram, which will be entering full rate production in 2019 and is winding down the final LRIP (Low Rate Initial Production) phases. MEC has formerly relied on labor and time-intensive manual application of coatings, which would not have been optimal to support the upcoming rate increases for the pylons, launchers

and weapons bay adapters that

ners are supplying to Lockheed Martin.



## Calibration Lab Stays Dialed In with New Certifications

Recognizing the work of the hard-working team members in the Calibration Lab, including Ringo F. Monfort, David Arredondo, Jr.,

and Heriberto Maldonado, Jr. who all earned Certificates of Completion for the multi-topic Interval Analysis course *ISO/*

*IEC 17025 Uncertainty Management* which will help ensure that they can perform their jobs with full

knowledge and confidence. Congratulations on a job well done!



## The Marvin Group Sweetens the Season of Giving



2017 Salvation Army Thanksgiving Food Drive

By Miriam Madrazo

Thanks to all of you that donated to our Thanksgiving Canned Food Drive supporting the Inglewood Chapter of The Salvation Army.

All of your donations mean a great deal to families in need throughout our Inglewood community. We had a mix of good food items donated.

As we continue into the holiday season, we are once again partnering with the Inglewood Chapter of The Salvation Army to collect toys to share during this Christmas season.

There are many in our community that are

less fortunate than us so your toy donations will help put a smile on a child's face and make some of their wishes come true.

Not only will you make a child happy but their families as well. There are many in our community that are unemployed or have to work multiple jobs to care for their families so our donations will help them know that others care and want to help.

Thank you for your thoughtfulness and generosity in donating unwrapped toys at the following locations:

- ◆ 261 Building, Main Lobby
- ◆ 250 Building, Main Lobby
- ◆ 498 Oak Street, just inside the employee entrance



## Marvin's Marvels Once Again Rally for Charity

By Lisa Gussman-Zairi

This year Marvin's Marvels celebrated their 10th Year Anniversary and the team came out at the top once again.

In 2008, Marvin's Marvels was formed in memory of Marvin Paul Gussman. Marvin Gussman, the founder of The Marvin Group, had passed away that year after a two year battle with pancreatic cancer.

His grandson, Joshua, heard about the LA Cancer Challenge, a 5K/10K walk/run that raised funds for The Hirshberg Foundation for Pancreatic Cancer Research and shortly thereafter Marvin's Marvels was created.

Marvin's Marvels is a team consisting of supportive friends, family and co-workers who come together each year to remember Marvin and the many others who have fought and are fighting this deadly form of cancer. Our 2008 team consisted of 40 members and raised \$18,606. This year we



had 99 team members and raised \$51,648.

We couldn't have achieved this without the kindness and generosity of our team members. Thank you for your continued support.

Marvin's Marvels will, "Never Give Up!"



## 9th F-35 AME Summit Stresses Affordability (Cont'd)

(Continued from Page 1)

for a variety of precision guided munitions.

The first day of the summit was focused on kickoff messages from key MEC personnel to the audience, including remarks from Jerry Friedman, Chairman of The Marvin Group; Howard Gussman, President of The Marvin Group; John Talebian, Vice President of Engineering for MEC; and Pete Tarantino, MEC Subcontracts Manager for the F-35 Program.

Present were a dozen attending

Lockheed Martin personnel including Tom Owen, VP of Sustainment Strategies; Stephen Sheehy, Director of Sustainment Strategies; Bryan (Jubal) Arey, Senior Manager; Andy Duff, Armament & SMS Lead; and Brian Vohl, AME Manager.

During the afternoon session, several other MEC personnel also spoke including Mike Jolly, VP of Operations; Larry Katz, VP of Procurement; Randy Harden, Director of Manufacturing; Jesse Andrade, Director of Procurement; and Brad Grover,

Program Manager, among others.

On the second day of the event, attention shifted to briefings from the international partners and a facility tour which highlighted the newly installed Robotic Paint work area and F-35 Assembly Cell.

Tom Burkert, MEC's Program Director for the F-35, served as the host throughout the event.

Marvin Engineering was initially engaged by Lockheed Martin to manage the five international

partners in 2003 and held the first of these summits in 2004. While the summit was not held between 2005 to 2009, this event has been held annually since 2010 and is highly valued by all participants.

Following a long-standing tradition, Madeline Gussman hosted a beautiful evening reception on the first night at her home in Beverly Hills, which was well attended by all invited guests.

## Sep, Oct & Nov Work Anniversaries Across The Marvin Group

### Over 40 Years of Service

Jesus N. Torres (42)

### 30 to 40 Years of Service

Fernando M. Loza (39)

Melecio S. Ortega (39)

Carrie I. Lovelady (38)

Carmen E. Guerra (37)

S. John Talebian (36)

Luis O. Santos (33)

Rafael Sanchez (32)

Francisco J. Perez (31)

Steven T. Dart (31)

Jose A. Moreira (31)

Jesus Villalobos (31)

Guadalupe Martinez (30)

Leandro Garcia (30)

### 20 to 30 Years of Service

David Manor (29)

Loofie Gutterman (29)

Maria Teresa Martin (28)

Emigdio Guerra (27)

Gary D. Kaufman (24)

Boris Kiselev (23)

Ann Marie M. Duus (23)

Craig J. Snaguski (23)

John Keel (22)

Shirley Wawee (22)

Todd Kiyama (22)

Saliu Garba (22)

Uri Shohet (22)

William J. Hennings (22)

Romelio Diaz (21)

Vicente Gonzalez (21)

Margarita Martinez (21)

Jesus Andrade (20)

### 10 to 20 Years of Service

Blanca A. Yuman (19)

Omar Campos (19)

Jose L. Erickson (19)

Leticia Garcia (19)

Macrina H. Prado (19)

Marguerite English (18)

Richard Arbues (17)

Charlene Killebrew (16)

Lorena Vidauri (16)

Anabella B. Ajuchavez (16)

Jose L. Martinez (15)

Teresa Ceja De Cardona (15)

Arnulfo Gonzalez (15)

Norma Mendez (15)

Guadalupe Beltran (15)

Carlos Zurita (15)

Emanuel J. Chiartano (15)

Gilberto Gonzalez (15)

Rosalba Rodriguez (15)

De Muro (15)

Scott Short (15)

Jose J. Avendano (15)

Dafna Gutterman (14)

Miguel Olmos (14)

Peter Tarantino (14)

Sally Kapp (14)

Scott A. Kruth (13)

Edson F. Campos (13)

Marissa A. Hibner (13)

Mark Gomez (13)

Juan Ibarra (12)

Armik Shahnazarian (12)

Lupe Chavarria (12)

Jayesh Patel (12)

Steven D. Holley (12)

Mark Ragoza (11)

Michael J. Weber (11)

Janet Kubota (11)

Steve Rodriguez (11)

Edwin A. Perez Rivera (11)

Arturo M. Valdez (11)

Charles C. Strickland (11)

Lupe Lopez (11)

Jaime E. Martinez (11)

Veronica Villegas (11)

Dmitriy Reznikov (11)

Allyn I. Richardson (10)

Ricardo Quiroz (10)

Maheep Singh (10)

Michael L. Baron (10)

Luis Ruiz Aquino (10)

Juan L. Ceja Pulido (10)

Brian D. Moore (10)

### Under 10 Years of Service

Jack A. Reitinger (9)

Alfredo Arroyo (9)

Mikhail Kaganovich (9)

Alejandro Reyes (8)

Barbara Moore (8)

Jessica P. Rodriguez (7)

Lee Tobias (7)

Jeremiah T. Astilla (7)

Luis Rodriguez (7)

Hector J. Olmos (7)

Ronald Glynn (7)

Timothy J. Grabowski (6)

Tesbee Calkins (6)

Michael Lutu (6)

Young B. Kim (6)

Stephen L. Maraella (6)

Steven R. Sprague (6)

Clemente A. Conrado (6)

Anh-Thy H. Nguyen (6)

Carlin B. Stevenson (6)

Ann E. Lee (6)

Lisett Torres (6)

Miguel Negrete (6)

Christin Stevenson (5)

Susan A. Ogawa (5)

Terrence J. Fogarty (5)

Jamie Drouet (4)

Gaetano G. Galleti (4)

CindyLou C. Lopez (4)

Ivan Nizkorodov (4)

Claudio S. Howard (4)

Santos G. Renovales (4)

Rosario D. Aquino (4)

Samuel Zubia (4)

John A. Guest (4)

Joseph E. Rhoades (3)

Tri Tran (3)

Myra Calderon (3)

Darcette Ortiz (3)

Maria T. Roman Cebreros(3)

Jaime Villarreal (3)

David Alan Boyer (3)

Andres Silva (3)

Dakota Ray Chavez (3)

Hala Abdalla K. Botrous (3)

Jessica De La Torre (3)

Christopher B. Hoang (3)

David Y. Plascencia (2)

Christopher Porche (2)

Jesus Rojas Yanez (2)

Marlon A. Cardona Solis (2)

Fred Gross (2)

Lucia Perez (2)

Miguel A. Rodriguez (2)

Jack R. Murphy (2)

Francisco Tantoco (2)

Victor Hernandez (2)

Lydiana Guzman (2)

Sindy Hernandez (2)

Taylor Richardson (2)

Erik Kipp (2)

Dorian Thompson (2)

Jose Arquieta (2)

## Rapid Prototyping a State of the Art Design

*By Gerrit Dykstra, MTS Project Manager*

MTS manufactures the top-of-line O-Level Armament Circuits Preload Test Set, the MTS-3060 SmartCan™. The SmartCan™ design began in 2008 and was first shipped in 2011, representing a revolutionary improvement upon the existing preload test sets that have been used to test the F-15 and F-16 armament interfaces. Since the release of the SmartCan™, new components have been created which could improve the functionality of the SmartCan™ and new requirements of potential customers have been identified.

In January of 2017, the Israeli Air Force (IAF) entered into a contract with MTS to receive up to 150 SmartCans™ - double the number of SmartCans™ that have been shipped in the life of the product. With the goal of creating a product that would represent the cutting edge in armament preload testing for all military aircraft in all branches of the services, MTS President Loofie Gutterman approved the effort to design the new SmartCan™ called the SmartCan™ Gen II. This new design adds new features, improves speed, measurement accuracy and battery life, and adds new communication protocols—all inside the same miniature form factor that comfortably fits in the operator’s hands.

The challenge of adding these new features was increased by the tight schedule. The contractual requirement was 12 months. This tight schedule did not allow for redesigns. The design had to work the first time.

The team needed a way of rapidly learning if their design concepts were sufficient to the requirements, and decided to use rapid prototyping to experiment on small sections of the circuit design. The team partitioned the design into smaller functional blocks, and developed conceptual designs for each block, identifying those blocks which were especially high uncertainty—and thus, high risk.

The team then used a rapid prototyping service to build small, simple PCBs that focused just on the functional blocks in question. Rigorous experimentation was performed on each prototype to ensure it would meet the most stringent requirements. If the experiment discovered a design flaw, tweaks to the design could be performed in the lab and experimentation could continue with the updated design.

By rapidly prototyping the high risk elements, the team could go from risky concept to proven design in a matter of weeks. This sort of aggressive design improvement and risk reduction was key




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*“By rapidly prototyping the high risk elements, the team could go from risky concept to proven design in a matter of weeks”*

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to the team meeting its challenging schedule of designing a state-of-the-art test set in handheld form factor and getting the design right the first time.

Moving forward, the SmartCan™ team intends to help spread the lessons learned in this development process throughout Marvin Test Solutions to help keep us one step ahead of the competition in our goal to become the dominant player in test equipment for the markets we specialize in.

## Work Anniversaries Across The Marvin Group (Cont'd)

Daniel Bernal, Jr.	(2)	Amit Summer Galai	(2)	Thomas A. Finkle	(1)	Jeffrey Dale	(1)
Christine C. Richard	(2)	Bryan Camarillo	(2)	Hector Yescas	(1)	Charles Minter	(1)
Oscar Gallegos	(2)	Cesilia L. Salgado	(1)	Catherine Ogawa	(1)	Tamara Ann Moyer	(1)
Clayton Kirby	(2)	Cody Gambill	(1)	Huan Nguyen	(1)	Zachary Theodore	(1)
Bryant Tran	(2)	Jose Rafael Hernandez	(1)	Angel Zaragoza	(1)	Alvaro Sanchez	(1)
Brijida Cruz	(2)	Jacob Newberry	(1)	Richard S. Vincent	(1)		
Andrew D. Palomares	(2)	Edward G. Martinez	(1)	Ennio E. Morales	(1)		
Johnny Green	(2)	Garry C. Summers	(1)	Carlos Quintanilla	(1)		

## December Work Anniversaries Across The Marvin Group

### 20 to 30 Years of Service

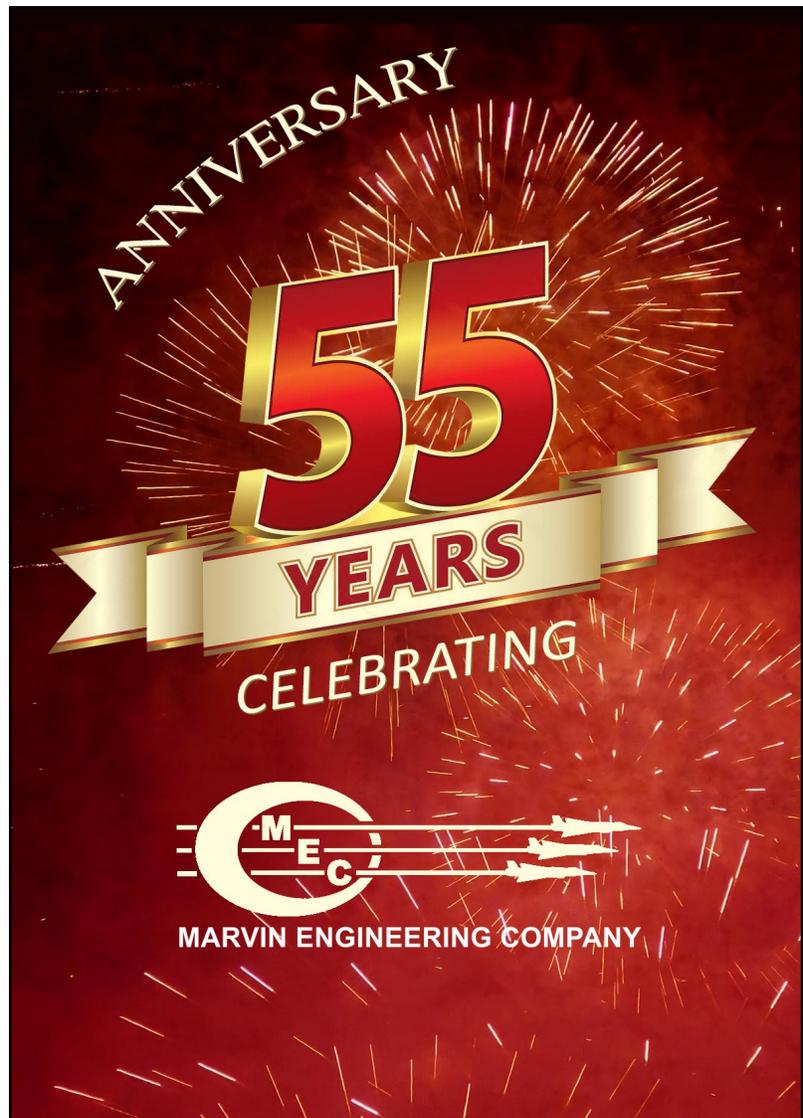
Dawn Desanto	(23)
Olga Rodriguez	(22)
Santa Rosa Nava	(22)
Guadalupe Avendano	(21)
Shannon C. Sharpe	(20)

### 10 to 20 Years of Service

Zvi Sharon	(16)
Michael N. Hershewe	(16)
Marisol Guillen	(12)
Gloria Duran	(11)
Danny Hernandez	(11)
Alex O. Galvan	(10)

### Under 10 Years of Service

Stanley Gray	(9)
Nieves Martinez	(7)
Marshall A. Davalos Salazar	(7)
Robert Murphy	(7)
Nicolas Bricteux	(7)
Marvin R. Minor	(6)
Harrison Sanchez	(6)
Dustin Parsons	(5)
Kimberly E. McNeil-Clark	(5)
Jesus Trejo Mendez	(5)
Timoteo Villalvazo	(5)
Ruben Martinez	(5)
Michael Buchmayr	(4)
Jaime Espinal	(3)
Christopher Nassiri	(3)
Francisco Castro	(2)
Sam Cornejo	(1)
Armando Madrid	(1)



On **Saturday March 10, 2018**, The Marvin Group will be hosting a very special 55th Anniversary Family Celebration and Health Fair at our Inglewood headquarters.

Preliminary details can be found on page 19, and more information will be published as soon as it's available.

Employees from all business units are welcome to attend and the event is open to family members and guests.

We are looking forward to a big turnout so please save the date!

## Mastering & Measuring the Art of Customer Satisfaction at MTS

*By Merielle Liao, CSS Manager, Marvin Test Solutions*

Customer satisfaction is our number one goal at Marvin Test Solutions. The two groups who support our customers on a daily basis before, during, and after each sale are the Customer Sales Support (CSS) and Customer Technical Support (CTS) Teams.

The CSS Team, comprised of the CSS Manager, CSS Engineer and Sales Administrator, is one of the first points of contact for customers. Communicating with a customer or prospective customer may start with a follow-up from a Website registration or a trade show lead, with the CSS Team contacting the customer regarding his or her interest in a specific product, coordinating visits with the sales rep and regional sales manager, fulfilling quote requests, as well as facilitating the overall sales process. And after the sale, the CSS Team follows up with the customer to ensure their satisfaction and to make sure they have everything they need.

With every order, upon shipment, a questionnaire is sent to the customer, asking them to rate MTS' service and performance (on a scale from 1 to 5) MTS makes it a priority to ensure the customer is satisfied with the provided service, with the goal to maintain a rating of 4 (Satisfied) or 5 (Very Satisfied). Based on customer feedback to date, CSS has consistently received an average rating of 4.5 (Chart 1 on following page) with the group always focused on improving the performance of delivered service.

The CSS Team also works in conjunction with the CTS Group, which includes the CTS Manager and applications engineers. The CTS Team provides technical support to our customers, which entails onsite customer visits, customer training on MTS hardware and software, pre and post-sale technical support, and supporting the customer with any technical questions or concerns they may have.

To track and manage customer inquiries and support, our CTS Team uses an in-house, Web-based tool called M@GIC. Via

M@GIC, a customer can create incidents and post requests which are then fulfilled by CTS, with tracking and notification of the incident's status managed by the M@GIC tool.

After an incident is closed (the request has been addressed/completed), the customer is able to provide feedback regarding MTS' performance associated with the specific incident. The CTS Team's performance also has the goal of maintaining a 4 (Satisfied) or 5 (Very Satisfied) rating and as shown in Chart 2 (on following page) for 2017 over 90% of the survey responses were "very satisfied" with MTS' support.

Being able to quantify a customer's level of satisfaction is key to ensuring that MTS is meeting the customer's expectations and needs.

By constantly gauging our performance via customer feedback, MTS is better able to improve on the customer sales and support experience — ensuring a high level of customer satisfaction.

*(Continued on Following Page)*

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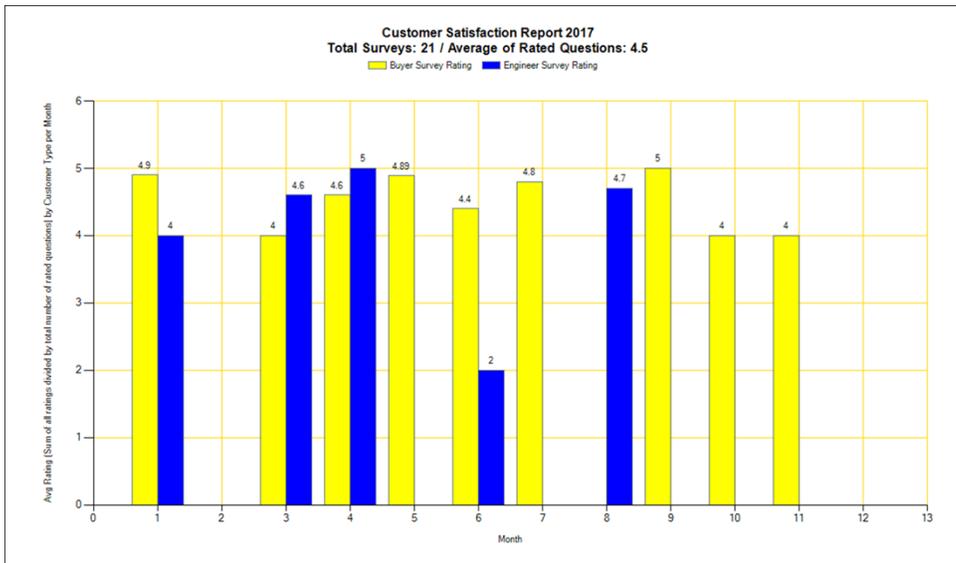
*“By constantly gauging our performance via customer feedback, MTS is better able to improve on the customer sales and support experience — ensuring a high level of customer satisfaction.”*

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*Merielle Liao, MTS Customer Sales Support (CSS) Manager*

# MTS Customer Satisfaction (Cont'd)



**RATING QUESTIONS:**

**Buyer:**

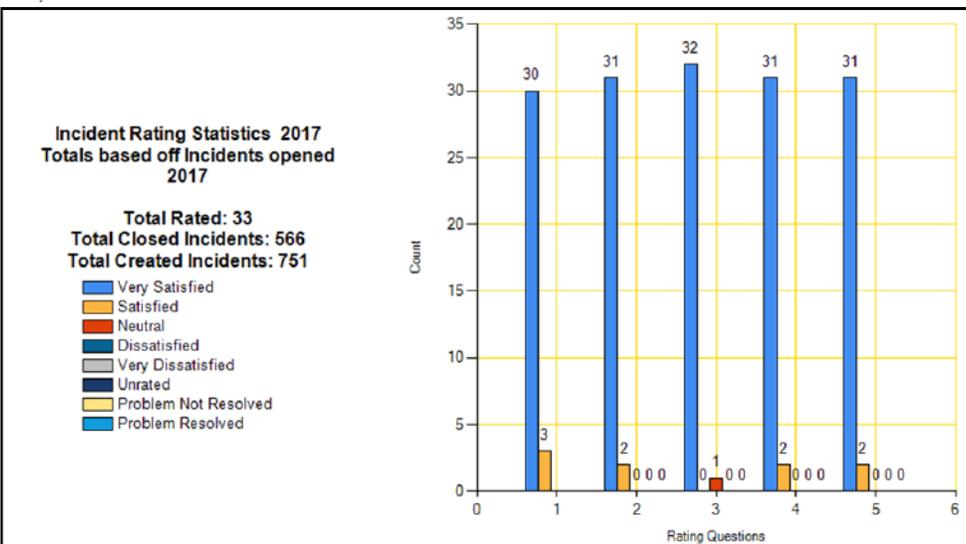
- It is very easy to interact with the MTS sales organization.
- I received my quotation from MTS within the expected timeframe.
- I am very satisfied with the quoted delivery time frame I received from MTS.
- The MTS sales process has exceeded my expectations.
- After placing my PO, I received my order in a timely manner.

**Engineer:**

- It is very easy to interact with the MTS sales organization.
- I am very satisfied with the technical support I received from MTS.
- The MTS sales process has exceeded my expectations.
- When my organization placed an order, I received it in a timely manner.
- Overall, I am very satisfied with MTS's products.

**RATING SCALE:**

- Very Dissatisfied
- Dissatisfied
- Neutral
- Satisfied
- Very Satisfied



**RATING QUESTIONS:**

1. Was your problem resolved?
2. Responsiveness to your issue
3. Technical & troubleshooting skill of support personnel
4. Communication & status of issues
5. Overall satisfaction with our performance

**RATING SCALE:**

1. Very Dissatisfied
2. Dissatisfied
3. Neutral
4. Satisfied
5. Very Satisfied

## In Memoriam: Donald Bottje & German Bracamonte

*By Lynne Kunster, VP of Quality & Jamie Avina, Quality Control Manager*

On Tuesday, November 28, 2017, Marvin Engineering hosted a memorial service in honor of Donald P. Bottje, Quality Engineering Lead for the Launcher IPT at MEC.

Marvin employees were in a sad state of shock when the news of Don's massive heart attack on Friday evening, November 10, 2017 was announced the following Monday. Don joined the Marvin Team in 2014 and soon became the backup to the Quality Engineering Manager.

Don was easy-going, well-respected, loyal to Marvin, and very passionate about quality. He loved caring for animals, and one of his hobbies was making music CDs for

friends who needed some joy in their lives. His smile, laughter, colorful ties, and positive attitude are the things we will always remember.

We were all very fortunate to have known him as a co-worker and dear friend to the Marvin family.

The unexpected passing of German Bracamonte on November 4th was another tragic loss to our company. German joined MEC as an Inspector in August 2014. He leaves behind his wife, Erika, his daughters Ashley and Vanessa, and his son, Daniel.

To lose two employees in such a short time span was an especially difficult blow, and we all extend our heartfelt sym-

pathies and condolences to the family and friends of both Don and German.

Both of you will be missed.



*MEC employees gathered for Donald Bottje's Memorial Service*



*German Bracamonte*

## Save the Date! The Marvin Group's 55th Anniversary

In recognition of the upcoming 55th Anniversary of the founding of Marvin Engineering Co., The Marvin Group is planning a special 55th Anniversary Family Celebration and Health Awareness Fair for Saturday March 10, 2018 from 11:00 AM to 3:00 PM.

A final schedule and agenda will be distributed closer to this date, but we encour-

age all employees to set aside this date to attend.

Employees are welcome to bring:

- ◆ Their spouse and children **or**;
- ◆ 2 other immediate family members (e.g. parents, in-laws, grandchildren) **or**;
- ◆ 1 guest of their choice

The event will take place at The Marvin Group's headquarters at 261 W. Beach Avenue in Inglewood.

Please look for future flyers to be posted as well as an update in this newsletter as details are confirmed!

The Marvin Group Corporate Headquarters  
261 West Beach Avenue  
Inglewood, California 90302

Phone: 310.674.5030  
Fax: 310.673.9472  
E-mail: messenger@marvineng.com  
Website: marvingroup.com

## A tradition of excellence

### THE MARVIN GROUP MISSION

*Our mission is to give the warfighters we depend on, the critical equipment they depend on. We are built on over 50-years of trust, integrity, and innovation in the design and production of integrated weapon systems and equipment for our customers world-wide. We build lasting relationships with our customers and suppliers and continually strive to be the industry standard for quality, service, and technical capability. Our future growth requires highly skilled, empowered, and diverse employees combined with our commitment to their safety and well being. In our mission to support our warfighters, we never lose sight of our responsibility to safeguard our environment, contribute to our community, and support our veterans.*

### THE MARVIN GROUP VISION

*The best people delivering confidence and security to warfighters all over the world.*

### THE MARVIN GROUP VALUES

1. Integrity
2. Partnership
3. Can-Do Attitude
4. Innovation

## QUALITY POLICY

*Marvin Engineering Co., Inc. will consistently provide products and services that meet or exceed the requirements and expectations of our customers. We will actively pursue continual improvement through programs that enable each employee to do their job right the first time and every time.*

## Ridesharing Commuter Program - Did You Know?

By Miriam Madraza

Are you part of our ridesharing commuter program?

As a responsible environmental employer, Marvin Engineering participates in the California Employee Commute Reduction Program. This is our way of helping the environment and encouraging staff to select another mode of transportation other than driving alone.

We have many staff members that drive zero admission vehicles, take a bus, train, ride a bicycle, motorcycle, ride 2 or more per vehicle or opt for the healthiest option of all, which is walking to work. These modes of transportation are our contribution towards helping reduce pollution in the environment.

If your mode of transportation is one of the above, you are eligible for our monthly subsidy and entered into a monthly raffle. If you take the bus or ride the train, your

monthly subsidy is \$25/month. If you are interested in learning more about the ridesharing commuter program, please contact Ana Cibrian in Accounting. Ana will review your eligibility and enroll you in the program if you qualify.

Thank you to all for completing our commuter survey. This helps with our annual filing confirming that we are contributing towards helping the environment.

