



Sikorsky Live Stream Event

GETT 20TH Anniversary

Who You Heard From:

Rebecca Grilli – Structural Engineering Manager – Commercial Completions

Stephanie Hicks – Industrial Engineering and Planning and Control

Cassandra Lam – Senior Engineer, Materials/Structures

Devika Mangaroo – Lead Avionics Technician for the S-92, S-76, CH-148

Alyssa Levan – Industrial Engineering Lead & Commercial Quoting/Proposals

For More Information on Sikorsky & What We Do: [Visit Our Website Here](#)

More Information on **Sikorsky Careers:** [Job Page](#)

For More **Pictures** visit Lockheed Martin Flickr: [Here](#)

For More **Videos** visit Lockheed Martin YouTube: [Here](#)

LM Career Predictor:

<https://www.lockheedmartin.com/en-us/who-we-are/communities/stem-education/career-predictor.html>

STEM Scholarship Info:

<https://www.lockheedmartin.com/en-us/who-we-are/communities/stem-education/lm-scholarship-program.html>

Mega Machines Superhero Helicopter Full Episode

<https://www.sciencechannel.com/tv-shows/mega-machines/full-episodes/superhero-helicopter>

Sikorsky, A Lockheed Martin Company – GETT Presentation Script

Slide 1 – Promotional Video

Slide 2 - Introduction

Good Morning and welcome to Sikorsky Aircraft, GETT 20th Anniversary Presentation, we are so excited to have all of you with us today and all of the women that have put this presentation together, we are going to talk to you today. I'm super excited to be able to be here, although virtually. We hope you really enjoy what we put together for you and we really hope we get to do this in person next year because we really miss all of this. What we are going to do. We are going to introduce ourselves briefly, kind of explain what we do at Sikorsky Coatesville, our background and then we will give you a virtual tour. We are going to give you quiz at the end and you will have the opportunity to win some swag from Sikorsky, Lockheed Martin. So we are super excited to have you and hope you get inspired to maybe take up a career in Aviation.

Slide 3 – Rebecca Grilli

My name is Rebecca Grilli and I am a structural engineering manager at the facility. I have delegation from the FAA as an ODA Unit Member, which means I can sign off modifications on behalf of the FAA. I've been at Sikorsky- Coatesville since March 2003, so I just passed my 18th year. I have both of my degrees in Aerospace Engineering from the University of Maryland. I was born and raised in Chester County; I've lived here all my life except when I was in Maryland going to school. I live with my husband, daughter, two dogs, a cat, a guinea pig, and some fish in West Chester Borough. I love music, cooking, hiking, and traveling. Some of my favorite adventures have been to Iceland where we got to snorkel at Silfra where the American and European tectonic plates are separating. We also got to go to Mexico and climb the Mayan pyramid at Coba. Some of my hobbies include interior design, building things, woodworking. Cooking with my family, my husband is a chef so we are always cooking lots of food. We also love hiking with the puppies and when Covid is over going to concerts and music festivals.

Up next is Stephanie to tell you a little bit about herself.

Slide 4 – Stephanie Hicks

Thank you, Rebecca.

My name is Stephanie Hicks and I am an Industrial Engineer at Sikorsky. What do I do all day? I play with data. For example: How many hours do the technicians charge to the aircraft? Are we over or under budget? My background is I was born and raised in Louisiana and I identify as Hard of Hearing. I received my first set of hearing aids when I was 4 years old, after a doctor told my parents that something wasn't right while at a Christmas party. Since, then I have broken 2 hearing aids and I've also spent 14 years in speech therapy in a mainstream school. Growing up I never had any friends with my disability until I went to college 1500 miles away in Rochester, NY. At RIT/NTID, NTID is home to the National Technological Institute for the Deaf, yes my hearing is severe enough for me to qualify. Once I graduated, I married my college sweetheart, who has normal hearing and have 2 wonderful kids who have no hearing disabilities, either. Speaking of who one of them is home with me right now due to the covid pandemic. We also moved to this area due to jobs and haven't left.

Next Cassandra will introduce herself.

Slide 5 – Cassandra Lam

Thank you, Stephanie

Hi, my name is Cassandra Lam and I'm a structural engineer here. I started in 2000, and just celebrated my 20th year this past October. Prior to that, I was with another company for 3 years working on flight simulators. I have a bachelor's degree in mechanical engineering from Binghamton, NY, and a master's in mechanical engineering from University of Arizona. I was born in Hong Kong and came to America in 1980, grew up in Queens, NY, and I've been here in Chester County for 25 years. Met my husband in college at Binghamton University and together, we have one daughter and an identical twin boys. Some of my favorites are helicopters, especially Sikorsky S-76s'. I love to travel, I've been to Italy, Hong Kong, San Diego and Mexico with my family. We also enjoy RV trips, especially the big Class A RV's. We've done three so far, been to Bar Harbor in Maine, Niagara Falls in Canada, and Pine Creek Gorge in Pennsylvania. I also enjoy kayaking, biking and hiking in my spare time. A little trivia about me is I love pandas. Both the Giant Panda and the red panda are my favorites. I've seen them in China, Hong Kong, Washington DC and San Diego. And here is a picture of us photoshopped with pandas from the San Diego Zoo.

Next up is Devika to tell you a brief introduction about herself.

Slide 6 – Devika Mangaroo

Thank you, Cassandra.

Hello, everyone my name is Devika Mangaroo. I am an Avionics technician lead currently working for the CH148 program which is the only military aircraft we currently modify at this location. I joined Sikorsky in 2012 and during this time I have been able to work on all 3 of the aircraft we currently build and modify here at this location. Before this, I was in the military working on apache helicopters basically flying tanks as we sometimes call them. I was born on the island of Trinidad which is one of two islands known as Trinidad and Tobago. I am parent to two very adorable fur babies Bella and Shadow, both of whom have mastered the look of, "I'm too cute and I do nothing wrong." I have traveled to 7 countries with favorites being England and Ireland and enjoy lots of Italian food. My hobbies include travelling, reading and when I have the time hiking. Thank you and here is Alyssa to introduce herself.

Slide 7 – Alyssa Levan

Thank Devika.

Hello, everyone my name is Alyssa Levan and I am an Industrial Engineer. I am mainly responsible for the planning of the aircraft here in Coatesville. I manage the operation hours for each area and look at the forecast hours for the next coming years. I also run the commercial quoting and estimating for all new aircraft. I have worked my entire career here in Coatesville and this is my 6th job with Sikorsky. I have been in material logistics, demand planning, and program operations. Working for Sikorsky and Lockheed allows you to always find something new and exciting to do.

I originally went to school for Interior Design and received my degree from IUP. But as I worked for Sikorsky I really loved what I did and went back to school for my MBA from Florida Tech. I am also PMP certified, which stands for Project Management Professional.

I am originally from New Jersey and moved to Pennsylvania during middle school. I currently live on an old farm with my husband, 2.5 year old son, 18 sheep, and 3 chickens. One of my favorite things to do is travel. My favorite has been Australia and New Zealand and I've traveled there twice. Once as a student ambassador and again for my honeymoon. I also really love pizza and wish I could have it every day.

In my time outside of work I have been working up to run a half marathon in October and recently did a 10k in April.

Slide 8 – Welcome to Sikorsky Coatesville

Welcome to the virtual tour of Sikorsky Coatesville, A Lockheed Martin Company. Due to the nature of our business and security we are unable to give you any live video but we have some great pictures and a video clip to share with you today. Our Coatesville site started as Keystone Helicopter and was acquired by Sikorsky in 2005. Sikorsky has a long history of aviation as it was founded by Igor Sikorsky in 1925. In 2015, Lockheed Martin acquired Sikorsky.

Slide 9 – Heliplex Aerial Shot

After our Sikorsky acquisition our facility began on improvements with state of the art equipment and workshops to become what we call the Heliplex. The Heliplex is about 235,000 sq ft and houses all the equipment, workshops, and support staff we need to build a fully customized aircraft and host our customers in world class fashion.

Slide 10 – Aircraft Supported

Here at Coatesville we produce the commercial aircraft product line: the S-76, S-92, CH-148, and support the S-70i. There are over 300 S-92's and 875 S-76's delivered around the world today. You may even catch a glimpse of one of the aircraft in some Hollywood movies.

Cassandra will now take you into more detail about each area within the Heliplex.

Slide 11 - Coatesville Capabilities

Thanks Alyssa. I get to tell you about Coatesville Capabilities.

Here in Coatesville, we wear many hats. We have Production - where we assembled the base aircraft. the aircraft frame are joined together and various avionics systems are installed and tested before the aircraft flies. We have completions- where we customized the individual aircraft. You have a selection of offshore oil, search and rescue or utility, VIP or executive configurations, or even EMS/Emergency Services. Based on the configurations, you can select the number of seats, type of seats. You can have side facing troop seats, leather interior seat, or even a day couch in an S-92. You can choose a drink cabinet, TV, satcom phone, or even a restroom. Then you can select how your helicopter is painted with the paint scheme. Next we have MRO, Maintenance repair and overhaul, and here you can bring your helicopter back for maintenance, inspections, repairs, and even upgrades. We also have a customer delivery center of excellence, where we present the customer their finished helicopter and they can get it bring it home. We have aircrafts delivered in over 40 countries.

Slide 12 – Final Assembly

Final Assembly. This is the hangar where our aircraft frames are joined together and avionics systems like the gearbox are installed and tested before the aircraft is sent to completions. All the aircrafts you see here are known as “green base models”- you will see they are mostly green from the primer before they get their paint colors. In this main picture, these are different sections of the S-92 helicopter, and they are manufactured from different parts of the world. For example, the cockpit is made from Taiwan, from a company called AIDC. And the cabin is made from India from a company called TATA. And the aft transition tailcone is made from Spain, from a company name Aernova. On the bottom left hand corner, you can see that the helicopter is together, and there’s a platform next to it set up, so you can access to the top to install the main gearbox. and the bottom right hand corner you can see a fully assembled green s-92 flying. Now how long does it take to assembly an S-92A? Well, it takes 5,600 hours or about 60 days to assemble an S-92. (This number of hours is approximately 3.8 school years for 1 student.) And for a S-76D, which is a smaller helicopter, it takes about 2000 hours or about 30 days to put one together.

Slide 13 – Video Mega Machines

Now check out one of our cool videos on one of our larger helicopter, S-92.

Slide 14 – Completions

Completions is mostly where customizations are done. After an aircraft leaves final assembly and has completed flight testing, it is then transferred to Completions center for further modifications specific to the customer needs. An aircraft is first stripped of its panels, seats, and floors to better accommodate the additional systems being added. Some options that the completions center performs include adding an additional fuel tank, exterior cameras, floatation equipment, toilets, flat screens, day beds, recliners, and even wireless internet. On basic builds a S76-D can seat up to 9 persons whereas the S92 can seat up to 19. After modifications this varies to a lesser number. Little known fact a S-76 build can take 6 to 10 months depending on configuration while a S-92 build can take 5 to 14 months depending on configuration

Slide 15 – Upholstery and Interior Shop

All aircraft interiors are fabricated or customized to the customer’s specification. In our commercial line, especially the VIP helicopters, each are unique. Most of the customization for the VIPs is done by hand - from the seat density, to all the interior finishes, including carpets, lighting, and veneers. The engineering team makes the customer’s design vision a reality all seats are made from the frame up; cushion build up for different heights and densities. VIP customers receive handcrafted leather upholstered swivel seats, along with carpeted flooring. Also, ceiling and sidewalls of the interior cabin and flight deck area are covered to match the engineering design plan.

Slide 16 – Harness Shop

In the harness shop we typically build wire bundles, other times we build avionics boxes and panels which are then installed unto the aircraft. We utilize a wiring board, which honestly looks like a giant puzzle board as you can see on this slide, it simulates the aircraft interior to accurately build and design the harness to easily integrate with the existing wire harnesses already on the aircraft.

Slide 17 – Paint Shop

An aircraft's exterior paint scheme is what makes it stand out the most. Paint schemes are designed in house by our designers and approved by both the engineers and the customer. All paints are customer specific but only high-end aviation paint is utilized. Once in the paint booth an aircraft is masked sanded and primed. This then allows for it to be painted and clear coated with a high UV protection. This process can take up to 20 days depending on the size and scope of work.

Slide 18 – Offshore Oil Interior

Thanks Devika,

As we explained you before there are several different types of configurations that we build in the Completions center. One of those is called an Offshore Oil. Offshore Oil aircraft are used to basically take rig workers to and from the Rig. On the lower left, you can see a picture of one of our aircraft landing on an oil rig down in the Louisiana Gulf Area. Workers work on the rigs for a few days at a time, and then they go back to the main land. So they are going back and forth. This configuration is pretty basic, they will be on the aircraft for a short time, a few hours at most. In these configurations there are typically 19 seats. The blue lights around the windows are called HEELS. If there is an emergency and the aircraft has to land on the water they would see where the windows were, they automatically light up and they would be able to see where the windows and exits are.

Just like in an airline, they have air gaspers and lights and speaker jacks above their heads. Basic configuration for them to go to and from work.

Slide 19 – S-92 VIP Interior

The second most popular type of aircraft that we build in the completions center is a VIP configuration. This is a picture of an S-92, which is the larger aircraft that we build. We build Head of State aircraft for many different countries and also for very rich people. This gives you a glimpse of an interior where aides would sit. On the far right you can see the VIP area with club chairs. You can see everything above is going to be gold plated for the gaspers, the cabinetry is custom made from slabs of wood. The customer gets to choose all of the fabrics, all of the leathers and all of the wood grain. They get to customize the entire interior.

Slide 20- S-76D VIP Interior

These pictures show the inside of a configured S-76 VIP aircraft, which is the smaller aircraft. These aircraft are very popular with executives. They are really quiet; you can have a conversation without using headsets due to some noise/acoustic blanket technology that we have employed. Just like the S-92A the customer can choose all of their configuration. They can have different seating configurations, different credenzas. You can see here they have a full height credenza in the S-76, with coffee carafes, phone, drawers that are going to have storage. They choose the wood grain and the leather; they can even choose the stitching. The way that the seats are stitched which is custom done in our upholstery shop which you saw earlier in the presentation. They choose everything and it is a really great aircraft for VIP configurations. Once the aircraft are completed in the Completions Center then they get transferred to the Flight Delivery Center which Stephanie is going to tell you about now.

Slide 21 - Flight Delivery Center (FDC)

Thank you, Rebecca.

All aircraft will go thru the Flight Delivery Center twice during its life span at the Coatesville facility. The first time will be after Final Assembly, where we will install the blades, weight the aircraft, test it and do first flights. Then the second time will be after Completions, where all of the new designs were added to the aircraft. For the completions we will still install the blades, weight the aircraft, test it, do ground runs, and do new design certifications. The new designs will be test by the engineers to make sure the vibrations are not to vigorous and make sure that everything works according to the plan. After this the aircraft will be ready to fly off. After this it will be ready for customer presentation.

Slide 22 - Fire Dept.

In case you were wonder about safety the Coatesville site has an onsite fire department. They are available at all times when workers are on site. They are present and on the flight ramp in full gear during all initial startups. When they are not on the flight line, they are training employees in CPR and First Aid as well as taking on many other responsibilities and duties revolving around the safety of the site.

Slide 23 - Customer Experience

Sikorsky has a world class facility for the customer. The duration of the visits varies from 1 day to multiple visits for weeks at a time depending on who is coming. Prior to the visit's aircraft are thoroughly cleaned and prepared for customer inspections and ultimately final delivery of an aircraft.

Slide 24 - Delivery Ceremonies

The delivery ceremony is held in the Flight Delivery Centers. While some ceremonies are simple with just a podium and a few representatives, others are on a grander scale. How would you like to accept at 40 million dollar helicopter? You betcha we are pulling out that red carpet, flash photography and the really nice chairs.

Next up is Cassandra with a really cool story of a Coatesville made helicopter.

Slide 25 – North Slope Borough

That's right Stephanie. North Slope Borough purchased a S-92 helicopter from us, also known as NSB. They are located above the Arctic Circle and experiences some of the harshest cold weather conditions in the world, with temperatures as low as -55 degrees C with the wind chill, covering about 95,000 sq.mile across northern Alaska. The helicopter's job is Search and Rescue, and to respond to aero medical evacuation, and in this case, you can see, they're rescuing a polar bear.

Slide 26 – Emergency Medical Services

Thanks Cassandra!

Now We've talked about all of the types of aircraft that we build and one of my favorite is the Emergency Medical Services aircraft or we call them EMS. There are pictures here of two of my personal favorites. The first on the left is the first medical interiors that we did for the D model and we built them for Arkansas Children's Hospital. They are called Angel One and these aircraft are performing life saving

missions for children in Arkansas, which is amazing. And the aircraft on the right is actually an older C model that we built many years ago in Coatesville for a hospital up in Boston. And you can see this paint job is super cool because it has the skyline of Boston on it. I love this picture because they are on the deck of the hospital on the top of the building and you can see the skyline in the background, which I think is amazing. And these aircraft are saving lives every single day and that is one of the things that make our job super special. So I hope that you enjoyed the virtual tour of our facility and what we all do and we are going to open it up to some questions.

Slide 27 – Sikorsky GETT 2021 Quiz

Please complete by Friday, May 21st 2021 at 11:59pm EST for a chance to win a prize.

- 1st 20 students to get a perfect score (on first try) will be mailed a prize.
- The school with the most responses will be mailed a prize box.
- All remaining students that take the quiz will be entered for a lottery prize drawing

<https://www.surveymonkey.com/r/KCPCW33>

General

- Competitors: Leonardo (Augusta), Bell, Eurocopter
- In over 40 countries
- Aircraft fly in all weather conditions
- Configurations and Customers:
 - VIP/HoS: Queen of England, Sultan of Johor, President of Argentina, LG Electronics, Royal Thai Air Force, Vulcan (Microsoft co-founder and NFL Seahawks owner Paul Allen), Donald Trump
 - SAR: Korea Coast Guard, Irish Coast Guard, North Slope Borough (Arctic circle in Alaska covering about 95K sq.mi.), Japan Coast Guard, China MOT
 - EMS: Arkansas Children's Hospital, Boston MedFlight, Trauma Hawks Monroe County WPB
 - OSO: Bristow, Milestone, PHI, Chevron, ERA (mostly oil operators)

S-92 Fun Facts

- Over 300 sold and has over 1.5 million flight hours (1 million reached 5/12/16)
- 1st delivery 2004 to PHI
- Require 2 pilots
- S-92 can fly 467nm with normal fuel (~537 miles) and 802nm with aux tanks (~923 miles), leaving 30 min reserve

- GWE lift off weight 27,700 lbs. (about 9 Honda civics)
- Max Passengers 19
- Hoist (over door) can hold 600 lbs. with option for second one
- Cargo Hook (belly) can hold 8000 lbs.
- When delivering KCG in country we assisted with the Ferry accident, 2014
- Movies: Mr. Deeds, Deep Water Horizon (#227 built here)
- TV: Featured in Science Channel Mega Machines

S-76 Fun Facts

- Over 875 sold and has over 7.5 million flight hours
- 1st delivery was in 1979 to Air Logistics
- Require 1 pilot
- Before S-76D; S-76A, S-76B, S-76C, S-76C+, S-76C++
- Max Passengers 12
- Hoist (over door) can hold 600 lbs.
- Cargo Hook (Belly) can hold 3300 lbs.
- Movies: Dr. Strange
- TV: Episode of Empire, took Justin Timberlake to the 2018 Superbowl