

JUNE 2018



THE WOLVERINE



Combat Systems

RATES OF COMBAT SYSTEMS • MEET THE DIVISIONS • HISTORY OF CIWS
CRUCIAL COMMUNICATIONS • MEET IC3 STANFIELD

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COMBAT SYSTEMS

USS Gerald R. Ford's (CVN 78) Combat Systems Department operates major systems onboard to include the Navy's first phased array RADAR suite installed on an Aircraft Carrier, Dual Band Radar (DBR); the command's largest and most complex system, the Machinery Control and Monitoring System (MCMS); and the Consolidated Afloat Network and Enterprise System (CANES), which is an evolving enterprise information environment covering unclassified, secret and top secret domain.

Additionally, Combat Systems Department is responsible for the operation and maintenance of all surveillance, navigation and air traffic control RADAR suites, ship's self defense system (SSDS), cooperative engagement capability (CEC), close-in weapons system (CIWS), NATO sea sparrow missile system (NSSMS), rolling airframe missile (RAM) system, all ship's internal and external communications systems (HF, VHF, UHF SATCOM, SHF, EHF, HYDRA, WIFCOM), electronic keying material system (EKMS), the host base security system (HBSS), and non-classified/secure internet protocol routing network (NIPRNET/SIPRNET) as well as a variety of secure and non-secure network software that supports all of these systems.

THE WOLVERINE

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FRONT COVER PHOTO

by Mass Communication Specialist 3rd Class
Cat Campbell

ATLANTIC OCEAN (Dec. 14, 2017) -- Fire Controlman 3rd Class James Meisch prepares to load live rounds into the Close-In Weapons System (CIWS) during an ammunition upload.

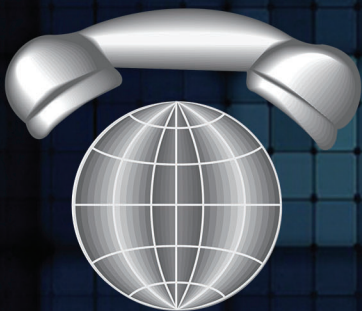
USS Gerald R. Ford

COMBAT SYSTEMS



Electronics Technicians maintain and calibrate the advanced equipment Ford uses for communications, detection and tracking, recognition and identification, navigation, and electronic countermeasures.

Fire Controlmen operate and ensure the accuracy of weapons systems onboard Ford by maintaining a wide range of complex equipment, including radars, computers, weapons-direction equipment, target designation systems, gyroscopes, and rangefinders.



Interior Communications Electricians operate and repair electronic devices used in Ford's interior communications systems, like SITE TV, the 1MC and other PA systems, electronic megaphones, and other announcing equipment, as well as gyrocompass systems.

Information Systems Technicians ensure the operability of Ford's command, control, communication, computer, and intelligence systems using state-of-the-art multimedia technology.



“We work as one to serve all. Every division and every rate in combat systems works together to serve the ship.”

- ITC Gregory Charles

COMBAT SYSTEMS

meet the divisions

Story and graphic by Mass Communication Specialist 3rd Class Cat Campbell

USS Gerald R. Ford's (CVN 78) Combat Systems Department is comprised of 196 Sea Warriors across the IT, ET, FC, and IC ratings, maintaining the highest level of Combat Systems readiness in direct support of the TYCOM, Commander Carrier Strike Group, Commander Destroyer Squadron and the ship's overall warfighting mission readiness.

Radio Division

Directly supports Ford's Command and Control by providing external communications via 95 external HF, VHF, UHF, UHF SATCOM voice and data encrypted circuits, five internet protocol RF bands, and 10 robust point-to-point individual systems, directly supporting the full radio frequency spectrum in support of ship-to-ship, air and shore operations. They are directly responsible for official Naval Message traffic to include processing and dissemination of all shipboard official records traffic.

Cyber Security Division

Responsible for maintaining the integrity and security of all shipboard networks using the Host Based Security System (HBSS), Assured Compliance Assessment Solution (ACAS) and the Threat Management Gateway (TMG). The Information Systems Security Manager (ISSM), along with the Information Systems Security Officers (ISSO), tracks vulnerability compliance, system accreditations, user training, the Cyber Security Workforce (CSWF) and issue of SIPRNET Public Key Infrastructure (PKI) tokens.

ADP Division

Ensures tactical and non-tactical information gets relayed onboard and off-ship by administering and maintaining the Consolidated Afloat Network Enterprise Services (CANES), including the administrative functions and maintenance of 11 networks, 3,061 classified and unclassified user accounts, 84 wireless access points (WAPS), 21 network switches and 801 end point workstations.

Combat Data Systems and Tactical Networks Division

Directly supports all departments onboard CVN 78 in everything from the control and monitoring of 27 different shipboard Hull, Mechanical and Electrical (HM&E) systems onboard, driving the ship, to landing and launching aircraft, utilizing the Machinery Control and Monitoring System (MCMS), Ship's Steering Gear Control System (SGCS), navigation and air traffic control management and distribution systems.

Radar and Surveillance Division

Responsible for maintaining and operating Ford's Ship Self-Defense System (SSDS), Cooperative Engagement Capability (CEC) and tactical data links. CS6 maintains Ford's air, surface, navigation and air traffic control RADARs to include the Navy's first Dual Band RADAR (DBR) system on an aircraft carrier. These systems provide the tactical picture for conducting flight operations, and command and control displays for the ship, Destroyer Squadron, and Strike Group Commanders and ensure safety of ship's surface navigation and flight operations.

Ship Self-Defense Weapons Division

Responsible for the vital mission of Ford's air warfare, self-defense and tactical warfighting capability. Fire Controlmen assigned to four work centers support this mission by operating and maintaining the Phalanx Close-In Weapons System (CIWS), NATO Sea Sparrow Surface Missile System (NSSMS) and Rolling Airframe Missile System (RAM).

Interior/Exterior Communications Maintenance Division

Responsible for the maintenance and repair of communication systems throughout the ship to include: Sailor telephones, announcing systems, public address system, satellite television and distribution, along with all HF, VHF, EHF, UHF and SHF (NMT and CBSP) communication groups, GBS, SATCC and all portable communications (HYDRA and PRC radios).

Be Smart

WHEN USING SOCIAL MEDIA

- ACTIVELY MANAGE YOUR PRIVACY SETTINGS
- NEVER GIVE OUT YOUR LOGIN INFORMATION
- DON'T USE THE SAME PASSWORD ON MORE THAN ONE SITE
 - PICK A UNIQUE, STRONG PASSWORD
- DON'T ACCEPT FRIEND REQUESTS FROM PEOPLE YOU DON'T KNOW
- THINK BEFORE YOU CLICK: NEVER CLICK SUSPICIOUS LINKS, EVEN IF THEY COME FROM A FRIEND OR COMPANY THAT YOU KNOW
 - BLOCK UNWANTED INDIVIDUALS
- IF YOU THINK YOUR ACCOUNT HAS BEEN HACKED, **REPORT IT**
- POST WITH CARE. THE COMMUNITY IS GROWING AND BE AWARE OF HOW VISIBLE THE CONTENT WILL BE
 - BE WARY OF PEOPLE YOU MEET ONLINE

PROTECT YOURSELF!



IF IT FLOATS OR FLIES, IT SINKS AND DIES

A Brief History of the Close-In Weapons System

Fire Controlman 3rd Class James Meisch (left), and Fire Controlman 2nd Class Jaemondjoemart Reyes (right), both assigned to USS Gerald R. Ford's (CVN 78) combat systems department, prepare to load live rounds into the Close-In Weapons System (CIWS) during an ammo upload. (U.S. Navy photo by Mass Communication Specialist 3rd Class Cat Campbell)

The crown jewels of the U.S. Navy have undoubtedly been the aircraft carriers. With that type of recognition comes the need to ensure they are protected. Protection comes organically or from other ships in a Carrier Strike Group. Of the organic ways in which a carrier can protect itself, the MK 15 Close-In Weapons System (CWIS) offers an accurate and deadly solution. For USS Gerald R. Ford (CVN 78), CWIS offers an inner layer point defense capability against anti-ship missiles (ASM), aircraft and littoral warfare threats that have penetrated other fleet defenses.

"This fast-reaction, detect-through-engage, radar guided, 20-millimeter gun weapons system delivers a devastating 4,500 rounds per minute of armor piercing discarding sabot rounds against ASM and aircraft," said Fire Controlman 2nd Class Joel Flanigan, from Gulf Breeze, Florida, assigned to Ford's combat systems department. "The system is also capable of firing 3,000 rounds per minute against asymmetric threats."

In 1973, USS King (DDG 41) was outfitted with the very first prototype of the weapons system, but after initial testing the Navy decided that a new variant was required to improve reliability and performance.

Then, in 1977, the Phalanx system successfully

completed its Operational Test and Evaluation (OT&E) onboard USS Bigelow (DD 942), and shortly after the system was put into production in 1978.

Once in production, the Phalanx system was slated to be installed on 23 Naval vessels and 14 foreign military systems, and in 1980, the first ship to receive the completed system was USS Coral Sea (CV 43).

The first iteration of the system was the Block 0 configuration, which was equipped with first-generation, solid-state electronics with the capability to engage against surface targets.

Nearly 10 years later, the first upgrade was made available to naval vessels with the Block 1 configuration in 1988 on the USS Wisconsin (BB 64). This overhaul provided the ships' CIWS system with improved radar, computing power, rate of fire, and a maximum engagement elevation to plus 70 degrees.

"You have to realize that we are not the only Navy out there," said Fire Controlman 2nd Class Kyle Morgan, from Gastonia, North Carolina, assigned to Ford's combat system's department. "Every day, our surface-to-surface capabilities are improving, but so do our adversaries and we need to keep developing new innovations and technologies to defend our ships more effectively."

Since then, the Phalanx program has continuously made efforts to upgrade in order to keep the system effective and up-to-date.

"These improvements were intended to increase the system's effectiveness against the emerging threat of supersonic anti-ship missiles," said Flanigan.

In 1992, the Raytheon Company acquired the contracting rights, and seven years later the Block 1B configuration was outfitted to USS Underwood (FFG 36).

This new configuration came with the forward looking infrared (FLIR) sensor, which in turn made the weapon more effective against surface targets. Additionally, it provided ships a defense against small vessel threats, and slower low-flying aircraft.

"The introduction of FLIR was definitely a game changer," said Fire Controlman 1st Class Shelby Edson, from Farmington, Missouri, assigned to Ford's combat systems department. "Thermal imaging gives us the ability to target surface and air contacts at night that you would not be able to see otherwise."

In addition to FLIR, the Block 1B configuration introduced an automatic acquisition video tracker, optimized gun barrel, and Enhanced Lethality Cartridges for more accurate targeting against disproportionate contacts.

Another system upgrade is the Phalanx 1B Baseline 2 radar, which improves detection performance, reliability, as well as reduces maintenance requirements. It employs surface mode to more effectively target and destroy threats closer to the water's surface.

Most recently, in April 2017, Raytheon tested a new electric gun variant, which will allow the CWIS to fire at

varying rates to conserve rounds. This new configuration replaces various parts and reduces the overall weight by 180 pounds.

"Implementing something like this into the fleet would enhance the CIWS's effectiveness, which in turn would lessen the maintenance requirement for the equipment," said Edson. "Also, more controlled firing would lower the chance of a mishap and increase the safety of the

"You have to realize we are not the only Navy out there. Every day, our surface-to-surface capabilities are improving, but so do our adversaries and we need to keep developing new innovations and technologies to defend our ships more effectively."

-Fire Controlman 2nd Class Kyle Morgan

evolutions for the ship."

The implementation of these state of the art upgrades ensures Ford's forward deployed protection of power.

For more information regarding the Phalanx CIWS visit the Naval Heritage and History Command's website at www.history.navy.mil, and the Raytheon Company's website at www.raytheon.com/capabilities/products/phalanx/.

Fire Controlman 2nd Class Amber Franklin (left), and Chief Warrant Officer Daniel Frey (right), both assigned to USS Gerald R. Ford's (CVN 78) combat systems department, act as safety observers during a Close-In Weapons Systems structural test fire. (U.S. Navy photo by Mass Communication Specialist 3rd Class Cat Campbell)





CS-9: Crucial to Communications

Story by Mass Communication
Specialist 3rd Class Liz Thompson

Interior Communications Electrician 3rd Class Vanessa Steed, assigned to USS Gerald R. Ford's (CVN 78) combat systems department, makes a 3IV (integrated voice network) phone cable extension. (U.S. Navy photo by Mass Communication Specialist 3rd Class Liz Thompson)

Bells are rung, the word is passed, the 1MC announcement ends. As every other Sailor onboard USS Gerald R. Ford (CVN 78), you are now properly made aware of what is to come or what is going on onboard. Nearly all forms of announcements you hear on ship – from the 1MC to handheld HYDRAs (hierarchical yet dynamically reprogrammable architecture) to the television in your shop – are all maintained by the few Sailors who belong to Combat System's CS-9 division.

"We in CS-9 maintain communication equipment that allows for a variety of needs and wants that the everyday Sailor requires," said Chief Interior Communications Electrician Omar Drammeh, CS-9's leading chief petty officer.

The most recognizable announcing system is the ship's 1MC, one main circuit.

"Where would we be without the 1MC?" asked Drammeh. "The system is used for dispersing information to the crew by sounding alarms and passing word throughout the ship. We provide the means for the mass distribution of information for training purposes while also

having the ability to raise morale."

The job of CS-9 consists of many different facets and many different communication systems.

"People usually think of just the 1MC when it comes to communication systems," said Interior Communications Electrician Seaman Frank Mejias. "Some people may not realize there are multiple MC systems and that is not even the half of our job."

MC systems service different areas of the ship. The 1MC is the general ship announcing system, while the 2MC is dedicated to engineering, the 3MC dedicated to the hangar bay, 5MC dedicated to the flight deck, and 6MC is dedicated for CVN communications from ship-to-ship.

"We also do maintenance and are responsible for HYDRAs, sound-powered telephones and their networks, all the ship's 3IVs (integrated voice network), public announcing system, and more," said Mejias.

The portability and easy-to-use interface of HYDRAs make them a go-to form of communication.

"Everyone with a HYDRA radio can understand the importance of our CS-9 technicians," said Drammeh. "Our

HYDRA equipment is essential to the ship's readiness of information and casualty response time."

CS-9 also plays a part in operating the internet services onboard.

"The equipment we operate facilitates internet services underway [for both personal] and work-related activities," said Drammeh. "Furthermore, our Line of Sight gear and associated patching units are maintained constantly to ensure clear communications for flight operations, unregs and other numerous evolutions."

In the event that all other forms of communication fail, the ship will use sound-powered telephones – which CS-9 also maintains.

"The sound-powered telephones allow lookouts, as well as repair lockers, to communicate effectively with one another," said Drammeh.

really cool to have the freedom to move anywhere on ship."

The weight of importance on their job is apparent to those in CS-9 and should be recognized around ship as well.

"I feel empowered and honored to be trusted with such an important job," said Steed. "From regular announcements to something as important as a MEDEVAC, I am there to make sure that the word gets passed and do the checks to make sure all systems will operate when they are needed."

When in need to alert the crew of a casualty or in the event of another motion picture movie premiere, remember the importance and significance of the small division of CS-9.

"We have the capabilities of being able to save the ship when you think about it. If we do our job and make sure all forms of communication are intact then we reduce the time it takes to report and respond to any and all casualties."

-Interior Communications Electrician 3rd Class Vanessa Steed

In a shipboard casualty, the timely ability to effectively communicate is crucial.

"We have the capabilities of being able to save the ship when you think about it," said Interior Communications Electrician 3rd Class Vanessa Steed. "If we do our job and make sure all forms of communication are intact, then we reduce the time it takes to report and respond to any and all casualties."

With the essentials of work-related communications covered, CS-9 also provides Ford Sailors with a form of entertainment.

"We operate all TVs onboard," said Mejias. "Not only are our TVs used for official purposes, what we do with the TV network allows for Sailors to watch movies, shows and even real-time sports games."

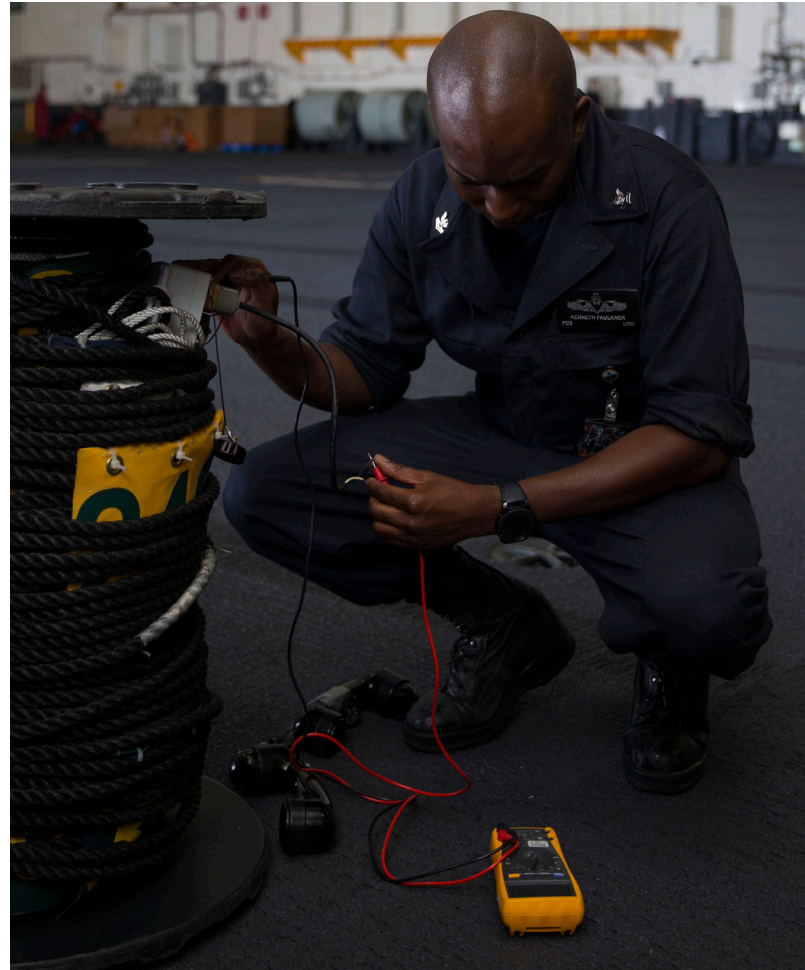
As any division onboard, CS-9 proves that they are vital to our mission.

"Without us, there are no communications on ship, besides message blanks and word of mouth," said Mejias. "Without CS-9, we wouldn't get underway. The ship has a definite need for communications on ship whenever we go out."

In all forms of communication and in all spaces, CS-9 should be noticed for what they do.

"We have equipment in every part of the ship and in every space," said Steed. "I think it is amazing to see all parts of the ship that not many could normally see. It is

Interior Communications Electrician 2nd Class Kenny Faulkner, assigned to USS Gerald R. Ford's (CVN 78) combat systems department, conducts an operational test on a phone and distance line in preparation for an underway replenishment. (U.S. Navy photo by Mass Communication Specialist 3rd Class Liz Thompson)



The Dirt Path Less Traveled



Story by Mass Communication Specialist 3rd Class Connor D. Loessin

Interior Communications Electrician 3rd Class Glenn Stanfield rides his dirt bike through an open field.
(Courtesy photo provided by Interior Communications Electrician 3rd Class Glenn Stanfield)

Riding a motorcycle takes a certain amount of dexterity and awareness, much like working on the flight deck of USS Gerald R. Ford (CVN 78). One has to keep their head on a swivel, paying attention to everything within sight. The faster the bike goes, the more room for error, but Interior Communications Electrician 3rd Class Glenn Stanfield loves the adrenaline rush associated with speed.

For Stanfield his rush comes from a dirt bike, rather than the traditional street bike.

"Anybody can ride a street bike," said Stanfield.

"You've got to worry about other drivers, but on a dirt bike, the terrain is constantly changing. It's a physically demanding sport."

At an early age, Stanfield quickly became aware of the seemingly euphoric feeling of pavement rushing past him.

"My dad used to have a three-wheeler and he would let me get on the back of it as a kid and he would race down the street," said Stanfield.

As he got older, he became more involved into a sport

that he loves to this day.

"One year for Christmas, I got a go-cart and my parents got me all of my riding equipment," said Stanfield. "We had a decent amount of land back in Brighton, Tennessee, and my dad would cut a race track out of the weeds and I would act like I was racing other people just to try and get faster."

However, a go-cart didn't quench his thirst for speed, so Stanfield set his sights on its two-wheeled counterpart, the dirt bike.

"Growing up, I would always watch motocross and it was always something I wanted to do. I've always had that competitive edge and I love getting that adrenaline rush."

- Interior Communications Electrician 3rd Class Glenn Stanfield

"Growing up, I would always watch motocross and it was always something I wanted to do," said Stanfield. "I've always wanted to race dirt bikes or race four-wheelers. I've always had that competitive edge and I love getting that adrenaline rush, so I got my first dirt bike at 18."

He found that riding not only gave him an enjoyable hobby, but also a means to

deal with his problems.

"I would ride it around the track and use it as a stress

reliever," said Stanfield. "Whenever I got mad or upset about something, I would just go out and ride it and forget about everything. Dealing with challenges at work, at home or with friends was made a lot easier to deal with riding the rough terrain."

Joining the Navy, Stanfield had to hang up his helmet for a bit as he pursued a new start. However, the need for speed remained.

"When I got to the Ford back in December of 2014, I was able to convince my wife to let me get a street bike so that I could get back into riding a dirt bike," said Stanfield. "I eventually traded my street bike for a dirt bike."

As he got back into his favorite sport, he started to involve his wife Renee into the pastime.

"She used to ride four-wheelers growing up and we used to ride street bikes together, but it got boring," said Stanfield. "Roads rarely change. Everyone uses a road, but not everyone can ride a dirt bike. She always wanted to get back into it, too. And I didn't want to ride by myself. I want her to get the same enjoyment out of it that I get. I like to involve her in everything that I do. Of course, she's a big part of my life, but Renee is amazing."

Riding dirt paths together has strengthened the bond

between the two.

"There were times when we started out that she wouldn't go as fast because she was learning," said Stanfield. "But once she got the hang of it, it made me really happy. She takes the time out to be a part of everything that I do, and for that I'm thankful."

As with any sport, using the proper personal protective equipment (PPE) helps to keep the rider safe.

"I always ride with all my PPE," said Stanfield. "I make sure my wife rides with all her PPE. I don't like to play with safety in these high-risk activities."

With his wife enjoying the sport by his side, Stanfield is able to set a realistic goal of when he can be competitive.

"I think I still have at least a year of practice before I want to think about competing," said Stanfield. "The last time I was on a dirt bike I was 18 and I'm going on 25 now, which isn't great considering most professional dirt bike riders are retiring at 28. They've been riding their entire life, but I've got a lot of practice to do before I can even match their IQ in riding. Like how to

ride a rut, what rut to take, how to throttle out and so on. I'm getting there, slowly but safely."



Interior Communications Electrician 3rd Class Glenn Stanfield (right) poses for a photo with his wife on their dirt bikes. (Courtesy photo provided by Interior Communications Electrician 3rd Class Glenn Stanfield)

Interior Communications Electrician 3rd Class Glenn Stanfield rides his dirt bike. (Courtesy photo provided by Interior Communications Electrician 3rd Class Glenn Stanfield)





COMBAT SYSTEMS