

513th ELECTRONIC WARFARE SQUADRON



MISSION

The 513th Electronic Warfare Squadron mission is the sole Department of Defense provider of electronic warfare support for the F-35 Joint Strike Fighter.

LINEAGE

513th Bombardment Squadron (Heavy) constituted, 19 Oct 1942
Activated, 31 Oct 1942
Redesignated 513th Bombardment Squadron, Very Heavy, 23 May 1945
Inactivated, 31 Mar 1946
Redesignated 513th Reconnaissance Squadron, Very Long Range, Weather, 6 May 1947
Activated, 23 May 1947
Inactivated, 20 Sep 1948
Activated, 10 Aug 1949
Inactivated, 20 Feb 1951
Redesignated 513th Bombardment Squadron, Medium, 25 May 1951
Activated, 1 Jun 1951
Discontinued and inactivated, 15 Mar 1965
Redesignated 513th Test Squadron, 12 Feb 1986
Activated, 1 Jul 1986
Redesignated 513th Engineering and Test Squadron, 15 Apr 1993
Inactivated, 31 May 1997
Redesignated 513th Electronic Warfare Squadron, 30 Mar 2010
Activated, 23 Apr 2010

STATIONS

Lydda, Palestine, 31 Oct 1942
Abu Sueir, Egypt, 8 Nov 1942
Gambut, Libya, 10 Feb 1943
Soluch, Libya, 25 Feb 1943
Bengasi, Libya, 16 Apr 1943
Enfidaville, Tunisia, 26 Sep 1943 (detachment operated from Bengasi, Libya, 3-11 Oct 1943)
San Pancrazio, Italy, 19 Nov 1943-19 Apr 1945
Harvard AAFld, NE, 8 May 1945
Grand Island AAFld, NE, 25 Jun 1945
March Field, CA, 1 Nov 1945
MacDill Field, FL c. 5 Jan-31 Mar 1946
Gravelly Point, VA, 23 May 1947-20 Sep 1948
Fairfield-Suisun AFB, CA, 10 Aug 1949
Tinker AFB, OK, 10 Nov 1949-20 Feb 1951 (detachment operated from Dhahran Airfield, Saudi Arabia, 6 Mar-May 1950)
Forbes SAFB, KS, 1 Jun 1951
Barksdale AFB, LA, 10 Oct 1951
Lockburne AFB, OH, 1 Dec 1957-15 Mar 1965
Offutt AFB, NE, 1 Jul 1986-31 May 1997
Eglin AFB, FL, 23 Apr 2010

ASSIGNMENTS

376th Bombardment Group, 31 Oct 1942
497th Bombardment Group, 1 Nov 1945-31 Mar 1946
376th Reconnaissance Group, 23 May 1947
Air Weather Service, 26 Sep 1947
308th Reconnaissance Group, 14 Oct 1947-20 Sep 1948
308th Reconnaissance Group, 10 Aug 1949
Air Weather Service, 19 Dec 1950-20 Feb 1951
376th Bombardment Group, 1 Jun 1951
376th Bombardment Wing, 16 Jun 1952-15 Mar 1965
Strategic Air Command, 1 Jul 1986-1 Jun 1992 (attached to SAC Combat Operations Staff entire period)
USAF Air Warfare Center, 1 Jun 1992
68th Electronic Combat Group, 15 Apr 1993-31 May 1997
53rd Electronic Warfare Group, 23 Apr 2010

WEAPON SYSTEMS

B-17, 1942-1943
B-24, 1943-1945
B-24H
B-24J
B-29, 1945
B/RB/WB-29, 1950-1951

C-47, 1950
C-54-1950-1951
B-29, 1951-1954
B-47, 1954-1961
EB-47, 1961-1965
B-52
B-1
KC-135, 1992-1997
F-35, 2010

COMMANDERS

Maj John M. Toomey, 31 Oct 1942
Cpt John B. Holst, by 31 Jan 1943
Maj Frederick W. Nesbitt Jr., 11 Mar 1943
Maj Richard F. Hurd, 19 Aug 1943
Cpt Henry B. Gibbons, 18 Feb 1944
LTC Edwin P. Schmid, 28 Feb 1944
Cpt Elman J. Beth, 13 Jul 1944
LTC Paul P. George, by 31 Aug 1944-unkn
Maj Aulevain M. Dodd Jr., by 3 Jul 1945
Maj Allen E. Haveman, by 22 Dec 1945-unkn
Not Manned, 23 May 1947-20 Sep 1948
Unknown, 20 Sep 1948
Cpt Earl A. Shaeffer, Jul 1949
Maj Carlos D. Bonnot, 2 Mar 1950
Cpt Charles H. Silvernail, 29 Apr 1950
LTC Arthur A. McCartan, May 1950
LTC James E. Mills Jr., 1 Jun 1951
LTC Paul C. Holden, 28 Feb 1952
LTC James S. Abrams, by 31 May 1954
LTC Robert S. Milner, by 31 Oct 1945
Maj George T. Grammas, by 31 Jan 1956
LTC William M. Williams, 1 Dec 1957
LTC Robert L. Bennett, 11 Aug 1958
Maj Roy A. Bahls, 1 Dec 1958
LTC Robert A. Stuempfle, 19 Nov 1959
LTC C. N. Rice, 19 Aug 1962
LTC Francis H. Dolan, 13 Apr 1964-15 Mar 1965
Unkn, 1 Jul 1986
LTC Andrew W. Mikluscak, 1 Jun 1992
Col Mark W. Smith, 15 Apr 1993
LTC John H. Gray, 16 Aug 1994-31 May 1997
LTC Timothy G. Welde, 23 Apr 2010

HONORS

Service Streamers

None

Campaign Streamers

World War II

Egypt-Libya

Air Offensive, Europe

Tunisia

Sicily

Naples-Foggia

Anzio

Rome-Arno

Normandy

Northern France

Southern France

North Apennines

Rhineland

Central Europe

Po Valley

Air Combat, EAME Theater

Armed Forces Expeditionary Streamers

None

Decorations

Distinguished Unit Citations

North Africa and Sicily [Nov] 1942-17 Aug 1943

Ploesti, Rumania, 1 Aug 1943

Bratislava, Czechoslovakia, 16 Jun 1944

Air Force Outstanding Unit Award

1 Jul 1987-30 Jun 1989

1 Dec 1994-30 Nov 1996

Air Force Organizational Excellence Award

1 Jan 1992-31 Dec 1993

EMBLEM



Over and through a black diamond, point to base, a gold stylized falcon riding an aerial bomb of the last toward dexter base. (Approved, 6 Jan 1944)



MOTTO

NICKNAME

OPERATIONS

Combat in European Theater of Operations, c. 1 Nov 1942-15 Apr 1945. Not fully manned or equipped, 1 Nov 1945-31 Mar 1946. Not manned or equipped, 23 May 1947-20 Sep 1948.

The 513th Reconnaissance Squadron, VLR, Weather was activated effective 10 August 1949 at Fairfield-Suisun AFB. Because of the pending movement of the 308th Group and its squadrons from that base, the 513th was manned as a "paper organization" with complete manning delayed until subsequent to the movement to Tinker AFB.

On 20 March 1950, the 2078th Air Weather Reconnaissance Squadron (Special) was discontinued at Tinker AFB, Oklahoma. All of the personnel of this unit were transferred to the 513th Reconnaissance Squadron, VLR, Weather, which had moved to Tinker AFB in the status of a "paper organization". Almost immediately the 513th was alerted for a special project at Dhahran, Saudi Arabia. Flight B of the squadron deployed to Arabia, leaving Flights A, C, and D at Tinker AFB.

Effective 19 February 1951 the 513th Reconnaissance Squadron, VLR, Weather, which was then in the process of deploying from Tinker AFB, Oklahoma to the Pacific area to support Operation GREENHOUSE, was inactivated at Tinker AFB, Oklahoma.

Practiced electronic countermeasures with B-29 from 1952 until conversion to jet aircraft in 1954. Between 1954 and 1965, the 513 Bombardment Squadron flew a long series of simulated combat bombardment missions to maintain readiness as a unit of the Strategic Air Command, testing electronic warfare devices and radar techniques, using B-47 and EB-47. Between 1992 and 1997, conducted operational test and evaluation of B-52, B-1, and KC-135 and support systems. Activated in Apr 2010 with an electronic warfare mission, flying the F-35.

USAF activated the 513th Electronic Warfare Squadron at Eglin AFB, Fla., April 23, according to an April 29 release. The new unit, commanded by Lt. Col. Tim Welde, will provide EW support to Air Force, Navy, and Marine Corps pilots for the new F-35. Once fully staffed, it will comprise some 130 personnel, in a 50 percent USAF and 50 percent Navy and Marine Corps mix. The unit also will test F-35 EW capability in the new US Reprogramming Lab, currently under construction with a projected completion date this summer, followed by hardware delivery in spring 2011. Meanwhile, said Welde, "Our engineers are currently developing threat models and 5th generation mission data; our technicians are undergoing maintenance training as well as prepping the lab." Command of the unit, part of the 53rd Wing at Eglin, will rotate between USAF and Navy. 2010

The 53rd Wing's 513th Electronic Warfare Squadron was awarded the Outstanding Scientist/Engineer Team of 2017 for their work on the F-35A Lightning II Initial Operational Capability delivery at Eglin Air Force Base, Oct. 25, 2017. "I'm extremely proud of the work these Airmen, military, civilian and contractors alike, do every day with their Navy teammates," said Col. David Abba, 53rd Wing commander. "Winning this award is a testament to the incredible work they are accomplishing together for the warfighter." This Air Force Science, Technology, Engineering and Math annual award recognizes the efforts and achievements of scientists and engineers who make significant contributions to technology and engineering.

For the last seven years, 513th EWS Airmen and Sailors of the F-35's U.S. Reprogramming Laboratory have been doing just that. They make the F-35 the fighter every aspiring pilot dreams of flying. How they accomplish that feat is quite complex. While impressive to behold, the aspects that make the F-35 a multi-role fifth generation aircraft and provide the warfighter global precision attack capability against current and emerging threats, are not its looks. It's what's on

the inside that counts. Supercomputers, referred to as sensor fusion, make up the F-35's brain. That brain provides the fighter with unique capabilities, making it more lethal, survivable and adaptable than any fighter aircraft on Earth, according to the Secretary of Air Force Public Affairs. However, without 513th EWS personnel inputting critical mission data into the F-35, sensor fusion wouldn't work as intended. The aircraft wouldn't know what threats to search for or when.

"America, our allies and coalition partners need the F-35's unmatched capabilities, so we can fight and win in highly contested areas," said Abba. "The 513th Electronic Warfare Squadron allows the F-35 to realize its potential." In the electronic warfare world, engineers refer to this ability to understand the world, the ability to sift through stimuli and make informed decisions about how to react, as mission data software. This software helps compile countless pieces of information about the environment the F-35 will fly into. It also creates within the F-35's brain the means of deciphering that environment. The men and women of the 513th EWS program this essential mission data software, thus teaching the F-35 how to distinguish between stimuli and making it efficient, intelligent and lethal.

"It's great to be doing this work," said 1st Lt. Jeffery Bintz, 513th EWS mission data engineer. "Every day, I know my efforts are being used to create the best fighter known to man." Over the years, circumstances surrounding the maturation of the F-35 required Airmen, Sailors and Marines to adapt and innovate. One situation requiring innovation involves the constantly evolving aircraft software load. To use an iPhone analogy, the aircraft software load is similar to iOS. The mission data is similar to an iPhone's contact list and apps. The iOS is required for an iPhone to turn on, but the contact list and apps are what help translate this technology into a functional format. In this way, mission data interacts with the aircraft software in order to enable the F-35s sensor fusion and thus give pilots unprecedented battlefield situational awareness.

Similar to iPhone technology, the operating system of the F-35 continues to be updated. However, unlike the simple update transition with an iPhone between iOS versions, the F-35 situation is more complex and time consuming for the app creators. With each new version of the F-35 operating system, the 513th EWS team must reprogram the previous mission data and build, package and input it anew. Basically, they must rewrite all the apps and retype the contact list. There is no automatic transfer and update of mission data. Compounding this manually intensive situation is the software tool, known as the mission data file generation tool. It is used to program mission data, but has no "edit" or "save as" function.

Confronting these challenges, among many others, enabled the 513th EWS to achieve accomplishments garnering Air Force recognition. Innovation and utilizing the resources provided are standard operating procedures for the 513th EWS. Their focus remains steadfast: to provide the most operationally exceptional mission data for the world's most advanced fighter. "When I'm programming, testing and re-testing the mission data, I know this work is not only for the Air Force, but for the Navy, the Marine Corps, and all our other coalition partners," said Bintz. "I love to hear the F-35s flying and know it was my brains that provided a little piece of the success of that great fighter."

Air Force Historical Research Agency. U.S. Air Force. Maxwell AFB, AL.

The Institute of Heraldry. U.S. Army. Fort Belvoir, VA.

Air Force News. Air Force Public Affairs Agency.

Unit yearbook. *376th Bombardment Wing (M)*. 1954.