

43rd FIGHTER SQUADRON



MISSION

LINEAGE

43rd Provisional Squadron organized, 13 Jun 1917
Redesignated 43rd Aero Squadron, 26 Jun 1917
Demobilized, 17 Apr 1919

43rd Squadron (School) authorized, 10 Jun 1922
Organized, 7 Jul 1922
Redesignated 43rd School Squadron, 25 Jan 1923

43rd Aero Squadron reconstituted and consolidated with the 43 School Squadron, 1924

Redesignated 43rd Pursuit Squadron, 1 Mar 1935
Inactivated, 1 Sep 1936
Disbanded, 1 Jan 1938

43 Pursuit Squadron (Interceptor) constituted, 22 Dec 1939
Activated, 1 Feb 1940
Redesignated 43rd Fighter Squadron, 15 May 1942
Redesignated 43rd Fighter Squadron, Single Engine, 12 Apr 1944
Redesignated 43rd Fighter Squadron, Two Engine, 13 Jan 1945
Redesignated 43rd Fighter Squadron, Single Engine, 8 Jan 1946
Inactivated, 15 Oct 1946
Redesignated 43rd Tactical Fighter Squadron activated and organized, 8 Jan 1964

43rd Pursuit Squadron and 43rd Tactical Fighter Squadron consolidated, 27 Mar 1964.
Consolidated squadron designated 43rd Tactical Fighter Squadron

Redesignated 43rd Fighter Squadron, 26 Sep 1991

Inactivated, 1 Jan 1994
Activated 1 Oct 2002

STATIONS

Camp Kelly (later, Kelly Field), TX, 13 Jun 1917
Wilbur Wright Field, OH, 25 Aug 1917
Ellington Field, TX, 18 Dec 1917-17 Feb 1918
South Carlton, England, 16 Mar 1918 (detachments at Hooten Park, Grantham, and Beaulieu,
after 14 Aug 1918)
Codford, England, 14 Oct 1918
St Maixent, France, 25 Oct 1918
Issoudun, France, 1 Nov 1918
Bordeaux, France, 6 Jan-18 Mar 1919
Hazelhurst Field, NY, 5-17 Apr 1919
Kelly Field, TX, 7 Jul 1922-1 Sep 1936
Albrook Field, CZ, 1 Feb 1940
La Joya, Panama, 13 Jul 1942
Howard Field, CZ, 9 Feb 1944
Chorrera, Panama, 6 Apr 1944
Howard Field, CZ, 29 Aug 1944
France Field, CZ, 10 Jan 1945-15 Oct 1946
MacDill AFB, FL, 8 Jan 1964
Elmendorf AFB, AK, 15 Jul 1970-1 Jan 1994
Tyndall AFB, FL, 1 Oct 2002

DEPLOYED STATIONS

Clark AB, Philippines, 20 Aug-31 Oct 1965
Cam Ranh Bay AB, South Vietnam, 1 Nov 1965-4 Jan 1966

ASSIGNMENTS

Unkn, 13 Jun-24 Aug 1917
Fairfield Aviation General Supply Depot, 25 Aug 1917
Unkn, 18 Dec 1917-24 Oct 1918
Air Service Replacement Concentration Barracks, 25 Oct 1918
3rd Aviation Instruction Center, 1 Nov 1918-5 Jan 1919
Unkn, Jan-17 Apr 1919
10th Group (School) (later, 10th School Group), 7 Jul 1922
Air Corps Advanced Flying School, 16 Jul 1931

3rd Wing (attached to Air Corps Advanced Flying School), 1 Mar 1935-1 Sep 1936
16th Pursuit (later, 16th Fighter) Group, 1 Feb 1940
XXVI Fighter Command, 1 Nov 1943
6th Fighter Wing, 25 Aug-15 Oct 1946
15th Tactical Fighter Wing, 8 Jan 1964
21st Composite Wing, 15 Jul 1970
343rd Tactical Fighter Group, 15 Nov 1977
21st Tactical Fighter Wing, 1 Jan 1980
21st Operations Group, 26 Sep 1991
3rd Operations Group, 19 Dec 1991-1 Jan 1994
325th Operations Group, 1 Oct 2002

ATTACHMENTS

405th Fighter Wing, 20 Aug-31 Oct 1965
12th Tactical Fighter Wing, 1 Nov 1965-4 Jan 1966

WEAPON SYSTEMS

R-4
JN-4, 1917-1918
DH-4
DH-4B
DH-4M
Spad XIII
SE-5A
MB-3
MB-3A
AT-4
AT-5
AT-5A
P-1, 1928-1935
P-1A
P-1B
P-1C
P-1D
P-1E
P-1F
ZP-1C
ZP-1B
ZP-1F
PW-9, 1929-1931
PW-9A
PW-9B
PW-9C
PW-9D

P-12, 1932-1936
P-12B
P-12D
P-36, 1940-1941
P-36A
P-40, 1941-1942, 1943-1945
P-40C
P-40E
P-40N
P-39D
P-39K
P-39Q
P-39, 1942-1944
P-38, 1945-1946
P-38D
P-38L
P-47N
P-47, 1946
F-84, 1964
F-4, 1964-1982
F-4E
F-15, 1982-1993
F-15A

COMMANDERS

Unkn, 13 Jun-22 Aug 1917
Cpt James B. McCalley, 23 Aug 1917
1Lt David B. Lindsay, 18 Oct 1917
Maj William B. Peebles, 28 Nov 1917
1Lt Dudley S. Norton, 15 Dec 1917
1Lt G. Sandford, 7 Jan 1918
1Lt Edward H. Clouser, 15 Jan 1918
1Lt Carlos B. Stevens, 16 May 1918
2Lt Thornton T. Perry, 18 Aug 1918-unkn
1Lt James B. Carroll, 1 Jun 1922
1Lt Walter D. Peck, 1 Aug 1922
Cpt Arthur B. McDaniel, 1 Sep 1922
1Lt James A. Woodruff, 4 Oct 1924
Cpt Albert Guidera, 1 Dec 1924
1Lt Lotha A. Smith, 1 Sep 1925
1Lt Alvan C. Kincaid, 24 Apr 1926
Cpt Harold H. George, 23 Mar 1927
Cpt John K. Cannon, 1 Aug 1929
1Lt Dale V. Gaffney, 7 Jul 1930

Cpt Jahn C. Cannon, 28 Jul 1930
Maj Louis N. Eller, 27 Jul 1931
Inactive, 1 Sep 1936-20 Jan 1937
Maj Richard W. Pears, 20 Jan 1937-1 Jan 1938
1Lt Robert Baseler, 1 Feb 1940
Cpt Walter W. Gross, 6 Aug 1940
Cpt George H. MacIntyre, Nov 1940
Maj Archibald W. Moore, Dec 1941
Maj James K. Johnson, 7 Jan 1943
Cpt Lloyd B. Duggan, 20 Aug 1943
Maj Chester B. Wine, 5 Jan 1944
Maj Lee E. Miles, 1 Mar 1944
Maj Donald K. Rogers, 11 May 1944
Maj Malcom L. Moss, 18 Jan 1945
Maj Bruce H. Hinton, 29 Jan-15 Oct 1946
None, 8 Jan-unkn Feb 1964
LTC Dwaine A. Sandborn, Feb 1964
LTC Walter V. Woods, 1 Jul 1965
LTC Casper S. Bierman, 6 Jan 1968
LTC John S. Stoer, 1 Aug 1969
LTC Robert D. Janca, 1 Nov 1969
LTC Thomas J. Humphrey, 1 Apr 1970
Col Dean E. Salmeier, 26 Jul 1971
LTC Richard M. Desing, 9 Jun 1972
LTC Delbert J. Haselhorst, 1 Aug 1973
Col Edward P. Schmit Jr., 31 May 1974
LTC Wilfred K. Abbott, 1 Jul 1975
LTC John K. Ek, 3 Jul 1976
LTC Charles A. Martindale, 1 Jul 1977
LTC Thomas R. Lalime, 17 Nov 1978
LTC Doyle D. Baker, 1 Jan 1980
LTC Ronald L. Matz, 1 Mar 1981
LTC John A. Borchert, 26 Oct 1981
LTC Henry R. Hutson, 13 Dec 1982
LTC Robert L. McMahon, 24 Oct 1983
LTC Richard L. Hagelin III, 8 Feb 1985
LTC Peter R. Loken, 30 Aug 1985
LTC John P. Marty, 30 Oct 1987
LTC John M. McNabb Jr., 13 Oct 1989
LTC John J. Catton Jr., 15 Jul 1991
LTC Robert G. Craig, 31 Aug 1992
LTC John E. Vandendries Jr., 28 May 1993-1 Jan 1994

HONORS

Service Streamers

Campaign Streamers

Armed Forces Expeditionary Streamers

Decorations

EMBLEM

MOTTO

NICKNAME

HONORS

Service Streamers

World War I Theater of Operations

World War II American Theater

Campaign Streamers

Vietnam: Vietnam Defensive

Armed Forces Expeditionary Streamers

None

Decorations

Air Force Outstanding Unit Awards

1 Jan 1965-1 Jun 1966

1 Jan-31 Dec 1969

1 Jan-31 Dec 1970

1 Jan-31 Dec 1971

1 Jan-31 Dec 1972

1 Jan-31 Dec 1974

1 Jan-31 Dec 1975

1 Jan-31 Dec 1978

1 Jul 1982-30 Jun 1983

1 Oct 1985-31 Dec 1986

1 Jan 1987-31 Dec 1988

EMBLEM



43rd Fighter Squadron emblems



43rd Tactical Fighter Squadron emblem



43rd Fighter Squadron emblem: On a disc Azure, a poised American Hornet (Vespa Maculata) rampant gardant Proper on a scalloped ovate field of the first, fimbriated Yellow, all within a narrow border Black. Attached above the disc, a Yellow scroll edged with a narrow Black border and inscribed "VESPA MACULATA" in Black letters. Attached below the disc, a Yellow scroll edged with a narrow Black border and inscribed "43RD FIGHTER SQUADRON" in Black letters. **SIGNIFICANCE:** Ultramarine blue and Air Force yellow are the Air Force colors. Blue alludes to the sky, the primary theater of Air Force operations. Yellow refers to the sun and the excellence required of Air Force personnel. The American Hornet (Vespa Maculata), also known as the Yellow Jacket, personifies the speed, agility and hard-hitting capabilities of the unit, and illustrates the Squadron's ability and readiness to aid and protect not only brother units of the Air Force, but all Arms and Services of the United States. The scalloped ovate field, in the shape of a cloud, represents its effective habitat, the sky. (Approved, 22 May 1924)

MOTTO

NICKNAME

OPERATIONS

Earmarked for service as a pursuit unit, trained in US, Aug 1917-Feb 1918 and England, Mar-Oct 1918.

Divided into flights on August 14. Moved to France from Codford on October 21 for service at the 3rd Aviation Instruction Center, Issoudon.

Arrived in France shortly before hostilities ceased on 11 Nov 1918, but never became operational before demobilization in 1919.

Authorized in the Regular Army on 10 June 1922 as the 43rd Squadron (School), assigned to the 10th School Group, and allotted to the Eighth Corps Area. Organized on 7 July 1922 at Kelly

Field, TX. Redesignated as the 43rd School Squadron on 25 January 1923. Consolidated on 8 April 1924 with the 43rd Aero Squadron (a WWI unit organized in July 1917 at Kelly Field, TX; demobilized on 17 April 1919 at Hazelhurst, NY; reconstituted on 8 April 1924). Relieved from assignment to the 10th School Group on 15 July 1931 and attached to the Air Corps Advanced Flying School. Reorganized and redesignated 43rd Pursuit Squadron on 1 March 1935 and assigned to the 3rd Wing. Inactivated on 1 September 1936 at Kelly Field, TX. Organized on 20 January 1937 with Organized Reserve personnel as a RAI unit in the Eighth Corps Area at large. Demobilized on 1 January 1938.

Participated in exercises, operations, and readiness tests of Tactical Air Command, 1964-1970; provided air defense augmentation for the Philippine Islands, Aug-Oct 1965; combat in Vietnam, Nov 1965-Jan 1966; replacement training unit for F-4 aircrews, 1966-1970. Provided air defense in Alaska, 1970-1993.

Further improvements were made to the force structure with the arrival of F-15As in 1982, upgraded to "C" models during 1986-87. The first F-15s arrived on 1 March 1982. By 4 October of that year, the Eagles had replaced the F-4Es on alert at the forward operating bases. The last Phantoms departed on 16 November 1982, ending another era in AAC's history. The 54th Tactical Fighter Squadron was activated 8 May 1987. It joined the 43rd Tactical Fighter Squadron as the second F-15 unit assigned to the 21st TFW.

Despite a diminished number of personnel and aircraft, the arrival of the 43d TFS in June 1970 from MacDill AFB, Florida had signaled a new and flexible role for Elmendorf based units. The squadron gave AAC an air-to-ground capability.

Personnel at Tyndall began preparing for the F/A-22 well before the first Raptor was flown to the base in September 2003. The 43rd Squadron was activated in October 2002 and moved into its own building two months later. The 43rd is one of four training squadrons that fall under the 325th Fighter Wing at Tyndall. The other three—the 1st, 2nd, and 95th—provide initial F-15 qualification training for new fighter pilots as well as conversion and recurrency training for existing pilots. As the designated instructional center for active-duty F-15 pilots, the 325th FW was the obvious training location for the Air Force's new air dominance fighter. Lt. Col. Jeff Harrigian, the commander of the 43rd, came to the unit from Tyndall's 95th FS, where he was the operations officer.

"We had a total of twenty-two people in the 43rd when our first F/A-22 arrived last September," he explains. "Our initial seven instructor pilots came a few months earlier so we could get a head start on building a syllabus. These initial pilots had to learn how to fly the new jet as well as become subject matter experts in specific areas of employment and instruction." The first two F/A-22 pilots at Tyndall (Harrigian and Maj Steven Luczynski) received their flight instruction at Nellis AFB, Nevada, where F/A-22 tactics development is taking place. Then they began producing their own Raptor pilots. Maj Michael Hoepfner, an experienced F-16 pilot, became the first Tyndall graduate of this training last January.

"Our first challenge was to understand the airplane," notes Harrigian. "Starting a new squadron with an existing airframe has its challenges, but I can borrow those procedures

because it has been done before. Starting a new squadron with a new aircraft is much more difficult. No one gave me a playbook." Harrigian approached his task by handpicking his immediate personnel. The first seven instructor pilots are all graduates of the Air Force's Fighter Weapons School.

Four of these were former Weapons School instructors. Five come from the F-15, and two from the F-16. The squadron will grow to an initial staff of seventeen instructor pilots by the end of 2004, with ten of the total coming from the F-15C community, three from F-15E, and four from F-16. The 43rd will have a full complement of twenty-eight F/A-22s and about an equivalent number of instructor pilots when fully staffed. Ten to fifteen students will be enrolled in the training at any one time. Pilot training accounts for only one factor of the Raptor instructional equation at Tyndall. Future Raptor maintenance technicians receive their training here as well.

The 372nd Training Squadron Detachment 4 (an AETC unit attached to Sheppard AFB, Texas) offers sixteen different courses that comprise four main maintenance training branches—avionics, crew chiefs, engines, and weapons. "Most of our students are transitioning from the F-15 and F-16," says TSgt. Kelly Martin, an F/A-22 maintenance instructor at Tyndall. "The students arrive highly motivated. Most of them have signed up for the Raptor. They want to see the airplane up close. They've seen all the high-tech Air Force ads on television, and they want to work on this fighter."

The expectations of the high-tech television ads are met with a high-tech, paperless instructional approach. Students take their courses in classrooms equipped with flat-panel monitors that display instructional material in full color and high graphical detail. Animated graphics allow students to disassemble an engine on the screen. "The computer-aided instruction reduces the time we need an actual aircraft for training," notes Martin. "We can show students the location of assemblies and how to access them before they see the airplane." Much of the training centers around a rugged and weather-resistant laptop called a portable maintenance aid. "The PMA replaces a library of technical data with a seven-pound laptop computer," Martin says. "We use it in the classroom, on the aircraft, and for any task the maintainer performs."

The PMA can be used separately or integrated with the classroom computer system. Maintainers can perform operation checks on the aircraft without climbing into the cockpit. Pilots fill out the aircraft forms on the computer. PMAs will eventually have RF capability so crew chiefs can transmit information directly to expeditors or maintenance control from the ramp. They will be able to order parts while standing by the aircraft without going to the support sections. The maintenance status of a particular airplane can be checked just by logging on to the system. "The F/A-22 is very easy to work on," notes Martin, an experienced maintainer who has been working on the advanced fighters for about two years. "The jet tells us what is wrong with it after it lands. It tells us what part needs to be replaced. The biggest challenge we face involves the access panels. We have to be more careful with them so we don't damage the stealthy coatings. Still, this airplane is a huge step forward in terms of maintenance."

More than \$60 million of new construction related to the Raptor at Tyndall so far translates into new squadron buildings, maintenance hangars, a low-observable repair facility, and additions

and updates to existing training buildings. With all the spending and attention focused on the F/A-22, Tyndall leadership is quick to emphasize that it takes an entire team to accomplish the air dominance training mission. "When we added the Raptor side to our academic and simulation building, for example, we refurbished the Eagle side," explains Brig. Gen Larry New, the commander of the 325th Fighter Wing. "We took the same approach with our maintenance facility. We renovated the entire building instead of just the F/A-22 section. We want everyone who works at Tyndall to feel that they are part of the same team. We are going to be operating the Eagle in the Air Force for the better part of the next two decades. We can't forget about it or give it some second-class status."

New also realizes that while the F/A-22 may enjoy a high profile within the Air Force, many are relatively unaware of the new fighter. We need to educate people about the Raptor," he says. "A lot of people in high places around the country don't even realize the F/A-22 is flying. We are well into fielding the weapon system. We need to remind them why we are building the Raptor and what the aircraft means to the future of the United States in terms of our warfighting capability and our ability to defend our interests." The Raptor's appearance at Tyndall has generated more curiosity than envy from F-15 pilots at the base. "Many Eagle pilots have flown against us and they want to understand the performance of the airplane—how it maneuvers," explains Harrigian, who ferried the first Raptor from the factory to Tyndall. "The next biggest question I get relates to avionics. F-15 pilots want to know what the cockpit looks like and how the airplane presents information to the pilot. They ask if it is easy to fly, if it flies like an F-15."

Harrigian's own first impressions? "This airplane is incredible," he says. "The performance is awesome. The first time I rolled the airplane I thought, 'wow this thing is responsive.' It is like flying a Cadillac that reacts like a Porsche. The cockpit is very comfortable. The F/A-22 is a heavy airplane that flies like a small airplane. The takeoff roll is impressive. A standard military power takeoff in the Raptor feels like an afterburner takeoff in the Eagle. I got used to the side stick placement after about two rides.

A more significant difference is the sensitivity of the controls. Ever so slight of a movement with the stick and the flight controls react immediately. My stick is constantly moving when I fly an Eagle, especially when flying close formation. The stick is dead still in the Raptor unless I'm maneuvering aggressively." Instructor pilots at the 43rd, aside from learning the F/A-22, must deal with a clash of cultures of sorts as those with differences in reflexes, thought patterns, and terminology ingrained from years of flying either the F-15 or the F-16 work together to form a common syllabus for a completely new aircraft type.

"We see some terminology differences between F-15 and F-16 pilots," notes Harrigian. "They have differing mindsets about what mutual support means. The F-16 is a small airplane and F-16 pilots need to stay closer together to keep each other in sight. Eagle drivers, on the other hand, with their larger airplanes, tend to get farther away from each other." "An F-16 pilot thinks differently about tactical problems than an F-15 pilot," Stapleton adds. "As an F-15 pilot, I don't have as many limits on aircraft identification or weapons. I rely on beyond-visual-range identification and lots of AMRAAMs. My biggest tactical problem involves airborne threats defeating my missiles. F-16 pilots, who didn't have identification capability until recently, are more concerned with getting their bombs on target and getting out unscathed." "The Raptor

enjoys the best of both worlds," says Harrigian. "F-16 and F-15 pilots might recommend different approaches for a given scenario.

We ask if either approach applies to the Raptor. We have found that bits and pieces from each are appropriate. We also often take completely different approaches thanks to this airplane's capabilities. We want to use lessons learned from legacy platforms, but we don't want to hang onto them for no reason. We try to get all of these mindsets on the table and create something that we can call the F/A-22 paradigm."

The foundation of that new paradigm relates to doing away with sensor management tasks that demand a lot of time and effort in current fighter platforms. "F-16, F-15, and F/A-18 pilots spend a lot of time working sensor management, that is, making sure their radar search volumes are located in the right airspace," says Stapleton. "They have to work mutual support issues with the sensors and populate their datalinks with the right information. Seventy-five percent of their effort goes into sensor management and twenty-five percent goes into actually employing the systems getting the airplane where it needs to be and putting the weapon on a target.

"The Raptor is 180-degrees different," Stapleton continues. "The airplane does so much of the work at a digitized level behind the screen that I, as a weapon system operator, can sit back and think about the kind of operational effects that the commanders want to achieve. I have time to consider how to provide the right amount of mutual support to the other joint coalition forces. Not spending all my time thinking where the radar should go, in and of itself, is going to break open a whole new dynamic in air warfare. We will see this airplane reach its true potential as soon as some of our younger guys start operating it. They will come up with stuff that we haven't even considered."

Instructor pilots at the 43rd have to build a syllabus for generating new pilots who will break those old paradigms. "We're not just flying a new airplane," Harrigian explains. "We are determining the skills required to fly the airplane. We have to create a building block approach for teaching someone to operate the Raptor. The F/A-22 performs significantly different from an F-15 and an F-16. So we spend some time in the early training to get the pilots accustomed to these differences. We show them how the airplane reacts to inputs and how it flies throughout the envelope. Then we fly one against one against a dissimilar aircraft. We're using the same generic training philosophy that we use for the F-15 and F-16.

We build upon what the student has already learned and then add another task each step of the way." Tyndall pilots are working on syllabi as they prepare for the summer arrival of their next seven instructor pilots, as well as for the fall arrival of the first students who will form the first operational F/A-22 squadron at Langley AFB, Virginia. The basic course, called the B-course, will last about six months and is designed for a pilot right out of a T-38 and lead-in fighter training. Experienced fighter pilots take a three-month transition course. (The unit will also offer a separate transition course, basically instrument rating instruction, for senior officers.) A separate two-month course, upgrading instructor pilots, prepares instructors for teaching at the 43rd. All student pilots go through about eight 1.5-hour sessions in an F/A-22 simulator before strapping into the Raptor cockpit.

"That first flight can be fairly intimidating," Stapleton says. "Working through the PMA, instead of touching actual Air Force forms with grease on them, can put off your sense of balance. But I quickly found the F/A-22 to be a forgiving, powerful, and capable airplane." The

superior capability of the F/A-22 will have a dramatic effect on training. "When I prepare a wingman to go to war in an F-15, I have to face the fact that the F-15 is at parity with some existing aircraft. None of them can beat the F-15 in all performance dynamics, but a lot of potential adversaries have two or three advantages that I have to take into account. We can beat them because we have better training. An F/A-22, on the other hand, gives me vastly superior capability. So my job as an instructor is to make sure our pilots perform the Raptor to its full potential. "Getting a new airframe is an event to be celebrated," Stapleton concludes in his briefing. "As you can see from our 1978 vintage F-15s sitting out here, new airframes don't come around very often. Their software, however, evolves. The Raptors you see on the ramp today are awesome. Even with an elementary version of the software that we are flying, we are still kicking everyone's butt. That tells me that this airplane will only get better."

The 43rd Fighter Squadron at Tyndall AFB, Florida the F-22 Raptor school house reached the 5,000-flying-hour mark collectively on 20 September. Tyndall is the second base to achieve the 5,000-hour milestone with the Raptor. The Air Force Flight Test Center at Edwards AFB, California, was the first. The first local sortie for the Raptor at Tyndall took place 31 October 2003. The 43rd has increased its annual flying hours every year since, In fiscal year 2006. the 43rd F-22s spent 2,770 hours airborne for a fifty percent increase over FY05, Since standing up as the only F-22 flying facing squadron. the 43rd FS has produced seventy-four F-22 pilots.

In 2002 AETC was completing preparations for standing up the F/A-22 FTU. The first pilot selection board met in July 2002 and chose seven instructor pilots with recent FTU experience from the F-15 and F-16 communities. On 25 October 2002, AETC stood up its first F/A-22 squadron, reactivating the 43rd Fighter Squadron, assigned to the 325th Fighter Wing at Tyndall AFB. The first aircraft to be delivered to the 325th Fighter Wing was scheduled to arrive at Tyndall in 2003.

25 Oct 02 The Air Force activated the 43rd Fighter Squadron as the first flying unit in the Air Force to fly the new F/A-22 Raptor.

On 8 April 2009, an F-22A assigned to the 43d Fighter Squadron, Tyndall Air Force Base, Florida, experienced brake failure during a rollover tire check, departed its parking spot, and traveled 1642 feet before colliding with a Canadian CF-18. The mishap pilot (MP) safely egressed from the aircraft and sustained no injuries. The F-22A's integrated forebody, left nose gear door, lower fuselage, and left inlet cap were damaged, with repair costs estimated at \$981,574.00. The CF-18's missile rail, nitrogen receiver, and horizontal stab were damaged with an estimated repair cost of \$153,498.00. No private property was damaged. After an uneventful NIGHT-1 sortie, MP landed and taxied to his assigned parking location. The crew chief marshaled him in and the recovery assistant chocked the right wheel. After removing the chocks to perform an aircraft rollover and tire check, the brakes failed and the aircraft began accelerating out of its parking spot. MP attempted to switch the brakes to MANUAL and also attempted to set the parking brake, without any effect. He impacted the CF-18 at low speed, having turn off his engines in order to slow the speed of the aircraft. The Accident Investigation Board President determined, by clear and convincing evidence, the cause of the mishap was two unrelated

failures in the aircraft, an IVSC (Integrated Vehicle Subsystem Control) A2 processor failure due to a voltage wraparound test failure internal to the processor card and a simultaneous short in the Brake Solenoid Valve B2 wiring harness. Subsequent Lockheed Martin testing revealed the wraparound failure was attributed to excessive noise levels caused by a faulty C259 capacitor. The Board President also found by clear and convincing evidence that because the A2 failure did not alert the Mishap Pilot (MP) through an ICAW (Integrated Caution Warning Advisory System) to this particular failure mode, this was causal to the mishap, as an ICAW would have led MP to abort the Mishap Aircraft. The Board President found a substantially contributing factor to the mishap was the implementation of TCTO (Time Compliance Technical Order) 1F/A-22-813, which installed a manual tow brake valve in the right wheel well. As a result, the pilot was unable to potentially use the last possible method to bring the aircraft safely to a stop.

Pilot Error Caused F-22 Accident at Tyndall An F-22 was forced to make a belly landing during a training sortie on May 31 at Tyndall AFB, Fla., due to the student pilot's failure to advance the aircraft's engines to military power before he initiated landing gear retraction, Air Education and Training Command officials announced Thursday. The incident occurred during a touch-and-go landing at the northwest Florida base, which is home to the Air Force's F-22 schoolhouse. "Without sufficient thrust, the aircraft settled back to the runway, landing on its underside," skidding along the runway to a stop, states the AETC release, dated Nov. 14, that cites the findings of the command's accident investigation board. The pilot, assigned to Tyndall's 43rd Fighter Squadron, "was able to safely exit the aircraft, suffering only minor injuries," states the release. However, the Raptor suffered damage that will take an estimated \$35 million to repair. A Tyndall spokesman previously told the Daily Report that the student pilot was on only his second solo F-22 flight when the mishap occurred. 2012

A chafed electrical wire arced on an F-22, leading to an internal fire that caused the aircraft's crash during a training mission at Tyndall AFB, Fla., last November, announced Air Combat Command. The pilot safely ejected, sustaining no significant injuries, but the F-22 was destroyed, according to ACC's Aug. 9 release that discusses the findings of the command's newly issued accident investigation board report. Total costs from the loss of the airplane and restoring the crash site are estimated at \$149.6 million, states the release. The F-22 belonged to Tyndall's 43rd Fighter Squadron. The accident investigators found that the chafed wire arcing led to a generator on the aircraft going offline. When the pilot attempted to restart the generator, the ensuing arc ignited misting hydraulic fluid, starting a fire in the F-22's left accessory-drive bay. These events led to an unrecoverable situation for the pilot. The investigators also found that weather "substantially contributed" to the mishap, as "a solid, undercast cloud layer" limited recovery options, states the release. 2013

Air Force Order of Battle

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Sources

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