

SHAPING A NEW PILOT CULTURE: WYNNE AND BERKE DISCUSS THE WAY AHEAD FOR AIRPOWER

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The current Chief of Staff of the USAF has prioritized an IOC for the F-35 and the acquisition of the F-35.

In Japan, [he noted](#) that:

“The F-35 is flying, it is a real thing, and progress is real,” he said.

Several countries, including Russia and China, are working on fifth generation fighters, he said, and even if the United States does not go to war with these countries, it will inevitably have to confront the military technology they sell to others.

Extending the service lives of fourth generation aircraft, and even supplanting the force structure with generation “4.5” fighters, does not solve the problem.

“When a fifth generation fighter meets a fourth generation fighter—[the latter] dies,” said Welsh. “We can’t just dress up a fourth generation fighter as a fifth generation fighter; we need to get away from that conversation,” he said.

To get an insight into why the COS of the USAF thinks along these lines, a recent and historic discussion between the founder of the concept of the 5th generation aircraft and a key shaper of its reality met at Eglin AFB.

In a meeting at the 33rd Fighter Wing in early September 2013, Secretary Wynne and Lt. Col. Berke discussed the evolving impact of 5th generation aircraft on combat operations. Wynne as Secretary of the USAF together with the Chief of Staff of the Air Force led an effort to put non-USAF pilots into an F-22 to jump start USAF thinking and to gain better joint force understanding the transition.

Lt. Col. Berke was a key player in the effort, as a USMC pilot, he went to Nellis to train on the F-22. Lt. Col. Berke is now the F-35B squadron commander for the USMC at the 33rd FW, and is the only F-22 and F-35 pilot in existence.

His background is truly unique (and can be found at the end of the article). Suffice it to note that he has accumulated over 2800 flight hours in the F/A-18, F-16, and F-22, and F-35.



The meeting at Eglin was the first time that the formulator of the 5th generation aircraft concept had met Lt. Col. Berke and provided them with an historic opportunity to look backwards, and more importantly forward to the evolving impact of the new aircraft on combat.

The discussion began with Wynne explaining his thinking about the necessity for the cross-assignment.

“It boiled down to the fact that I believed the USAF needed to better understand and explain that 5th generation aircraft are not simply replacement aircraft for the 4th generation. I believed that bringing in pilots from other services and Air Forces might well jump start USAF thinking as well as spread the word to others.”

Berke then underscored that he had come to Nellis at a good time, because the USAF was beginning to understand that the F-22 was not simply the next iteration of the Eagle and that they would have to focus more than they had on how the 5th generation would work with legacy aircraft to shape more effective combat capability overall.

Secretary Wynne had considered early on that there was an inherent advantage to leveraging legacy aircraft as the first shooters in any serious engagement to better use the stealth characteristics of the fifth generation. This means the

relearning of basic pilot instinct to shoot first to protect those following. Here it is shoot from follow platforms, and save ordnance for the final fight.

Berke saw this as well. “I got to Nellis at the time when the F-22 community was beginning to really understand the necessity to better integrate the F-22 within the overall air force. When I was there, the most significant tests we were doing were integration tests.”

Berke underscored that “a strike force of Raptors working with Hornets, or Eagles or Vipers are going to do better in an overall air combat effort than simply training to operate by themselves.”

He also highlighted that this experience was central to his work at Eglin in shaping an approach for the roll out of the F-35B to the USMC.

When asked about the evolution of the F-22 into the most lethal SEAD (Suppression of Enemy Air Defense) aircraft ever built, Berke underscored that F-16 pilots were key players in shaping thinking about this evolution for the F-22 and its contribution to the overall air combat effort.

In other words, already the cross fertilization of legacy with 5th generation aircraft have shaped a new approach to the crucial SEAD mission, one highlighted by recent Syrian events as well.

Wynne emphasized that the Berke approach was central to the “renorming of airpower” and that a key aspect of the transition is leveraging 5th generation aircraft is reshaping the sensor-shooter relationship.

“The fifth generation pilots are going to have to be trained that firing first is not their core con-ops. Giving validated targets to other shooters is the ‘to be’ condition. This is reversing decades of training and experience where the instinct is to fire first and ask questions later.

With 5th generation aircraft you are setting up the air space for air dominance, and weapons are delivered from assets throughout the managed airspace. Without the 5th generation aircraft you have to fight your way in and expend significant effort just trying to survive. With the 5th generation aircraft you are setting up the grid to shape the offensive and defensive force to achieve the results which you seek.”

Lt. Col. Berke also emphasized the core challenge of re-shaping the pilot’s instincts as evident in legacy aircraft.

“I am often asked to compare legacy to 5th generation aircraft and this is really difficult to do if you have not flown the aircraft. I love my F-18 and it will always be my aircraft. But it can never be a 5th generation aircraft.

The basic way to understand the 5th generation aircraft is that it allows you to determine where in the battlespace you will fly, without the adversary setting up force barriers which need to be destroyed before I can operate a legacy fleet.

In my F-22 or F-35 I can operate in the full spectrum of combat – RF, EO, IR, etc. – and can do so with width and depth of operational reach. The fleet is core to understanding this reality.”

He emphasized that the F-35 has more depth than does the F-22 in operating in a full spectrum environment.

“The F-35 adds layers of depth on top of what the F-22 has because there are so many different sensors looking at any field — anything in the spectrum deep, not just the radar.

It’s not just the array, it’s not just the EOTS, it’s not just the DAS.

It’s all those things overlaid.

And so you don’t just have breadth, you have huge depth in whatever part of the spectrum you want.”

By flying 5th generation aircraft, Berke underscored the challenge of shifting the pilot’s instincts.

“As a combat pilot in legacy aircraft you are working with data to execute a mission; and you fly with wing men. In the fifth generation world, you do not have wingmen and you do not have data. You have information. The data is behind the glass and the screen provides the information.

In effect you are shifting from being a tactical asset doing tactical aircraft missions to a more strategic engagement.”

And this clearly affects the direction pilot training and combat thinking must now be ingrained as a part of the 5th generation driven revolution. This must be understood in the theater command structures designing are war-winning strategy.

“There’s a burden now that the Raptor community is feeling, and that the F-35 community will begin to feel. The tactical aircraft is no longer just a tactical platform with strategic implications.

It is a tactical, operational, and strategic platform when it needs to be. There is an obligation now because the burden on the pilot has been lifted because the information is so high fidelity, it’s so accurate, and real time, and so plentiful, that the pilot now has to see himself and view himself in a larger context than we had in the past.”

In a context like Syria, the 5th generation assignment might be to retarget incoming cruise missiles to target mobile launchers as they move. **5th Generation warfare is all about movement and situation awareness.**



Ed Timperlake, Mike Wynne and Karen Roganov, the 33rd FW PAO in front of the Ready Room for the Warlords. Credit Photo: SLD

And Lt. Col. Berke hammered home again and again that his experience with legacy and then with the F-22 and F-35 simply underscored that one was describing different historical epochs in air combat capabilities and approaches, and not simply iterative changes.

“How could I possibly compare the F-35 to a F-18? I have zero criticism of the Hornet. I love that jet. The Eagle is a fantastic airplane. Those are fantastic airplanes that I know and love and will miss not flying when I retire, but it’s just a disservice to both airplanes.

Such a comparison dilutes the real capability that we're getting with 5th generation and incorrectly assigns capability to an airplane that was never designed, has no capacity to do tasks that have been designed into the new generation of aircraft.

The legacy aircraft operated in a different time with a different environment, and a different world where we didn't have the expectations or climate for a tactical platform to do the things that a 5th generation aircraft is built from the ground up to do."

Wynne observed that engaging operators from other Air Forces did expose all of the Air Forces engaged in the F-35 enterprise in the dimensional change being developed right before their eyes.

As Col Berke noted, further integration of 4th gen pilots led to exponential exploitation of the 5th gen capabilities.

Wynne added: "Sadly this is not soon enough for the F-22; but it appears that the concept of an international and joint fleet of F-35's has jumped the gap in thinking. Much like repeating rifles had to overcome years of training for sharpshooting; now the task is clear— get this new generation in to the hands of operators as quickly as possible. This transformation needs the speed of the Internet and the speed of mobile that underscores the future fight."

Having witnessed the discussion and participating from time to time in the dialogue with the architect of 5th generation airpower and a key shaper of its reality, what would we conclude?

It is clear that we are at an historical turning point in the development of airpower.

If we go back in history we might note that the lesson for the air power rivalry between the U.S. and competitive air forces is rather straightforward: the technology had to be available but it also had to be successful understood and employed; not just by the operators or Pilots but by the command authorities, sometimes extending to national leadership.

The lesson on the rivalries to date is that theater and air combat leaders must adjust during the course of an air battle or war by changing strategy and tactics, be able to exploit the enemy's mistakes or weakness. The best is to have the advantage of leveraging early the introduction of technology such as the supersonic German Jet or and early stealth designs. Aircrews must be adaptable

enough to follow changing commands from leadership and also, on their own initiative, to change tactics to achieve local surprise and exploitation of a combat advantage.

A key conclusion is always to assume a reactive enemy will in time develop the necessary technology to try and mitigate any advantages. With the worldwide proliferation of weapons even a second or third world nation might have state-of-the-art systems.

As the history of war in the air shows it was a constantly evolving process of human factors integrated into technology. The Cold War ended well for humanity and a lot of courageous pilots, bold leaders, and smart technologists deserve a lot of credit for this great victory.

The U.S. would be wise to remember the lessons learned and along the way the loss of very good men in the air who paid in their blood for America today to have the best technology available flown by best Air Force, Navy, and Marine aviators this country can produce.

Wynne underscored:

“The challenge now is to comprehend that America and the F-35 integrated international fleet has in its arsenal the wherewithal to create conditions for peace for another generation or two. Our burden is to get on with the tasks of shaping concepts of operations to take advantage of the 5th generation aircraft and the associated new tools of combat.”

For historical context see US-USSR tacair lessons learned from a hot cold war:

<http://www.sldinfo.com/the-us-vs-ussr-in-tacair-lessons-learned-from-a-hot-cold-war/>

Lieutenant Colonel Berke is a 1994 graduate of California State University at Fullerton, where he earned a Bachelor of Arts degree in Political Science and his commission in the Marine Corps as a Second Lieutenant. His military education includes The Basic School, Naval Flight Training, Tactical Air Control Party School, F-16 Transition Training, F-22 Transition Training, and Naval Fighter Weapons School.

In June 1994, Second Lieutenant Berke reported to MATSG Pensacola for Naval Flight Training in Pensacola, FL, Meridian, MS, and Kingsville, TX. In June 1997, he was designated a Naval Aviator and reported to VMFAT-101 MCAS El Toro,

CA for Replacement Aircrew Training as an F/A-18 Pilot. Captain Berke reported to VMFA-314, Marine Aircraft Group-11, MCAS Miramar in October 1998 and served as Scheduling Officer, Powerline Officer, Quality Assurance Officer, and Logistics Officer. During this tour, Captain Berke deployed aboard the USS John C Stennis to the Persian Gulf in support of Operation Southern Watch in 2000, and to the North Arabian Sea in support of Operation Enduring Freedom in 2001.

Captain Berke reported to the Naval Strike and Air Warfare Center, Fallon, NV in September 2002 for duty as a TOPGUN Instructor. During his tour, he served as an F-16 Instructor Pilot, Adversary Officer, Assistant Training Officer, and Training Officer.

In September 2005, Major Berke reported to 5th ANGLICO in Okinawa, JA. While at 5th ANGLICO, he served as Supporting Arms Liaison Team Leader and Forward Air Controller. During this tour, Major Berke deployed to Ramadi, Iraq, in support of Operation Iraqi Freedom.

In September 2006 Major Berke returned to MAG-11 MCAS Miramar, CA. After completing refresher training at VMFAT-101, Major Berke reported to VMFA-314 in December of 2006. He deployed to MCAS Iwakuni as part of the Unit Deployment Program serving as the Operations Officer and Executive Officer.

Major Berke reported to Tyndall AFB, FL in February 2008, for transition training in the F-22 Raptor. Upon completion he was assigned to the 422nd Test and Evaluation Squadron at Nellis AFB, NV as an Operational Test Pilot. He served as the Commander of the F-22 Division.

In July 2011, Lieutenant Colonel Berke reported to Eglin AFB, FL where he is currently serving as Commanding Officer, VMFAT-501. He has accumulated over 2800 flight hours in the F/A-18, F-16, and F-22, and F-35.

<http://www.mag31.marines.mil/Leaders/tabid/1001/Article/45903/lieutenant-colonelbrdavid-berke.aspx>