



*A KC-10 fuels an F-22 in September, before strike operations against ISIS targets in Syria.*

USAF photo by TSgt. Russ Scaif

# With the Raptors Over Syria

By Amy McCullough, News Editor

## The F-22 unexpectedly went to war on a night of dynamic combat.

Ramp space was limited in late September 2014 at an undisclosed operating base in Southwest Asia as the F-15E Strike Eagle and F-22 squadrons located there prepared to change out.

In fact, group and wing leaders at the undisclosed base had “asked and received permission” to let the F-22s head home to the 1st Fighter Wing at JB Langley-Eustis, Va., a week early to help ease the congestion on the ramp. The aircraft were configured for the long trip, complete with two extra fuel tanks, the normal configuration to fly across the ocean, when word came from the combined air operations center that the jets were needed for combat.

Maintenance immediately got to work, and within 24 hours airmen had downloaded and reconfigured the Raptors with two 1,000-pound Joint Direct Attack Munitions and everything else the pilots might need to face either an air-to-air or surface-to-air threat.

Up until that point, no one expected the F-22 unit, which was in the Middle East for strategic deterrence and as a safeguard for possible contingency operations, would make its combat debut against ISIS. The brutal-but-primitive terrorist organization lacked an air force for the predominantly air-to-air Raptor to destroy.

“It was awesome to see them work and get the jets reconfigured, and then we kind of sat in that mode, not sure if we were going to execute or not,” one of the pilots involved in the operation told *Air Force Magazine*. The unit received notice a day or two later that the operation would take place late on Sept. 22

through the early morning hours of Sept. 23 local time, he said.

The F-22 was part of the initial US-led air campaign against ISIS in Syria, which was conducted in three waves. The US did not know, at first, what Syria’s response would be to the presence of American combat aircraft in its airspace. Although ISIS lacks an air force, the Syrians certainly have one—and a fairly advanced integrated air defense system as well.

The USAF crews started doing some generic planning, mapping out the closest airfields and coming up with a basic fuel plan, but the real planning couldn’t begin until the airmen received their targets about 24 hours before takeoff. They were tasked with hitting an ISIS command and control facility about 50 miles from Aleppo.

There is a “joint team that looks at those targets and then says what’s going to be the best resources to put against that target,” said Maj. Gen. Jeffrey L. Harrigian, assistant deputy chief of staff for operations, plans, and requirements on the Air Staff. It made sense to use the F-22s “in the areas where they’re concerned about being highly defended, and originally, the first couple nights that was a concern until we understood how the Syrian integrated air defenses would work.”

Although the F-22, as a platform, didn’t have any combat experience, the crews “had been preparing since Day One,” said the pilot, who asked not to be identified because of security concerns.



*SSgt. Joshua Morgenstern approaches an F-22 in the maintenance area of a base in Southwest Asia last June. Raptor maintainers kept the aircraft combat ready in support of Operation Enduring Freedom, Combined Joint Task Force-Horn of Africa operations, and—eventually—Operation Inherent Resolve.*

Early in the deployment, the F-22s trained with the F-15E Strike Eagles based in the area, until President Obama authorized the use of force against ISIS in Iraq in early August and the Strike Eagles' operational tempo significantly ramped up.

### HEATING UP

"They were busy all through August and in to September, so [the F-22 unit] stopped participating. We were doing a lot of training with them prior to this time and we basically were on our own at that point, doing our own training in-house with the limited number of aircraft we had," added the pilot.

The aircrews also had spent some six months leading up to the initial air campaign studying Syria's surface-to-air missiles and aircraft. "We would try to generate all of our scenarios around those specific mission sets. ... A lot of our training when we got in theater was focused specifically on countries we were concerned with: Iran and Syria," he said.

Around June or July, "as things started heating up," the F-22s also shifted from a daytime training schedule to a night flying schedule. "We weren't sure what would happen, [and] it made sense for us to at least start preparing," said the pilot.

The F-22s were one of three cells scheduled to launch around 9 p.m. Eastern Standard Time Sept. 22. The lead group included F-15Es, the second

group consisted of partner aircraft, and the third included the Raptors, all from an undisclosed base in the region. Each cell was made up of four fighters and a tanker, said the pilot.

Anticipation was high and everyone wanted to be part of the historic event.

"The weapons folks don't often get a chance to load live munitions on the F-22, so those guys were out there, very excited," said the pilot. "We had four weapons crews total and three of the four were out there on the line. All of them wanted to be out there."

There was supposed to be a five-minute separation between each of the

cells, but the first F-15E had an engine malfunction on takeoff and had to execute a high-speed abort that ended up closing the runway for about 20 minutes, said the pilot.

"It's a 1,200-mile drive to get from where we were to the target. It took a little over two hours to drive direct ... to the target area and we had planned about 30 minutes of slop to allow for contingencies and various other things," he said. "So we lost almost all of that [flexibility] on the ground before we even got airborne. ... That was our biggest challenge out the door on the F-22 side, being the back end



*A 27th Expeditionary Fighter Squadron pilot climbs into a Raptor under a maintenance sunshade in Southwest Asia in June 2014.*

of the train as the front end is starting to have problems.”

At that point, the flight plan was still on track, but the time line was compressed. Everybody was rushed to make up time and that caused some problems for air traffic control, which was trying to de-conflict the aircraft and reconnect the three cells of fighters with the tankers.

The F-22s were held low and slow, delaying the mission another four to six minutes. Once the Raptors climbed to their cruising altitude of 28,000 feet, they were met with another challenge: The winds were “significantly higher” than they had expected, said the pilot.

“We had been flying there for six months and there had been virtually no wind at altitude the entire six months, then once we got to altitude the winds were about 60 to 80 knots [70 to 92 mph], which is not a big deal for short distances, but when you are flying 1,200 miles and you’ve got a two-hour drive, that creates a significant difference in your flight plan route.”

The unexpected wind speeds added another five or 10 minutes, making it more challenging to meet the planned time on target.



SrA. John-Anthony Centano, SrA. Nicholas Banducci, and SSgt. Colby Bostwick perform heavy maintenance on an F-22 in Southwest Asia.

## Going to the Mountain Top

In early August a distraught Iraqi Yazidi made an emotional appeal to parliament in Baghdad on behalf of her people—a mostly Kurdish-speaking religious minority group—who had been brutally pushed from their homes by ISIS terrorists and were now isolated and starving on top of a barren mountain in northern Iraq.

“An entire religion is being exterminated from the face of the Earth,” she said, according to the *Washington Post*.

Almost immediately after the plight of the Yazidi became known, the US began flying humanitarian assistance operations in support of those stranded on the mountain. Air Force C-130s and C-17s dropped thousands of pounds of food and water, as US, coalition, and partner aircraft conducted strikes on the ISIS fighters.

Months later, however, there were still many Yazidis calling Mount Sinjar home and despite the humanitarian operations, they still needed help.

On Oct. 25, 2014, a U-2 Dragon Lady took to the sky above Mount Sinjar, tasked with using its optical bar camera to not only update the enemy order of battle, but also the location, layout, and disposition of the nine refugee camps still scattered around the mountain, Lt. Col. Jason Arnold, director of operations for the 480th Intelligence, Surveillance, and Reconnaissance Wing at JB Langley-Eustis, Va., told *Air Force Magazine* in December.

The U-2’s OBC is a film-based system that produces incredibly high-resolution images. “Because it’s film, and it’s an older system, it’s inherently unclassified,” allowing the US to share the gathered information with partner nations capable of helping with the airlift operations, said Arnold.

The 9th Intelligence Squadron at Beale AFB, Calif., is the only unit in the Defense Department capable of processing such film, and for some unexplained reasons, the film was delayed in getting there.

The 10,500 feet of negatives—nearly two miles’ worth of extremely delicate film—arrived at Beale six days later, said Arnold. The airmen knew they didn’t have much time if they were going to provide relevant information to mission planners. What normally takes 12 to 24 hours to process, took just six.

The film then went to a group of geospatial intelligence analysts, who quickly looked through all 1,500 frames of the Mount Sinjar area “looking for refugee locations, the camp layout, and doing an analysis of the slope of the group, and the surrounding areas to figure out where it was safe to airdrop those food and supplies,” he said.

In just over 12 hours, the geospatial analysts were able to put together 47 intelligence products. They were sent electronically to the combined air and space operations center downrange.

“It was really inspiring,” commented Arnold. ■

## AVOIDING AN “INCIDENT”

“To make matters worse,” Iraqi air traffic controllers “started vectoring us toward Iran instead of toward Syria,” said the pilot, who said the Iraqis were not organized to deal with that many aircraft simultaneously operating in their airspace.

The US pilots had to figure out a way to meet the mission objectives without causing an international incident by blatantly ignoring host nation directives.

“Fortunately, we managed to get going in the direction I needed to go and I didn’t need to ignore their direction. It just took another minute here, another minute there, but it’s all cumulative, and it all adds up, and it all gets us much further behind than what we can afford,” he said.

The original plan was for the F-22s to fly toward the northern “two-thirds” of Iraq where they would hit an air-refueling track, then flow in to the west and hold on the western border of Syria.

However, once they passed Baghdad it became clear that wasn’t going to work.

“Even going direct [to the target], I wasn’t going to make it unless I started going much, much faster,” said the pilot.

The four-ship of F-22s got as much fuel as possible from a KC-10 circling midway through Iraq, then peeled off and started to climb directly toward the target area.

About 200 miles from the Syrian border, the F-22s went to afterburner, accelerating to Mach 1.5, and started the climb up to 40,000 feet—the intended cruising altitude for the 15-minute flight into Syria.

“We were pulling the power back to try to keep the jet from accelerating past 1.5 because 1.5 was actually the sweet spot for us to hit the time on target exactly on time,” said the pilot.

The CAOC did not want the F-22s to get there early. Although it was not “overly crucial” for all three cells to simultaneously hit their targets, that was definitely the “desired impact,” the pilot said.

Despite all the delays early on, things were starting to come together. The timing was actually looking good and the F-22s had enough fuel to strike the target and get out of Syria before they had to hit up another tanker.

The plan was for two Raptors to go in and take out a command and control center while the second two provided air cover. All four were configured the same way and could switch roles if necessary.

## More Air Strikes,

For the Air Force, the operation to degrade and ultimately defeat the ISIS terrorist organization actually began on June 11, 2014—some three months before the launch of the initial air campaign—when President Obama first authorized intelligence, surveillance, and reconnaissance flights over Iraq.

It had been nearly three years since combat operations in Iraq ended and most of the 480th Intelligence, Surveillance, and Reconnaissance Wing at JB Langley-Eustis, Va., had long since moved on to other operations across the globe. The 480th is the lead wing for the service’s Distributed Common Ground System and is responsible for exploiting the majority of the intelligence coming from Iraq and Syria. However, at the time there were few Iraq experts left.

“We maintained our current level of support to all the combatant commanders across the globe. ... All we did was layer on an additional set of requirements for our airmen. They took it with great aplomb,” said Lt. Col. Jason Arnold, the wing’s director of operations. “Those airmen were asked to exploit missions that they hadn’t really seen before, but that didn’t decrease the quality of products we were providing.”

Within 24 hours of the first medium-altitude ISR operations over Iraq, the airmen of the 480th successfully sorted through the information and created a set of intelligence products that were then handed over to the Kuwaiti crown prince. In the weeks that followed, thousands more intelligence products were exchanged with five other Gulf partner nations.

“We didn’t have the same basing rights or overflight rights back in June that we did when [the Iraq war] was in full swing several years ago, so we were really building those relationships anew,” said

USAF photos by TSgt. Russ Scalf



An F-22 takes off for a mission over Syria as part of a large coalition strike package against ISIS targets on Sept. 23, 2014.



SrA. Jared Mast signals an F-22 Raptor pilot to stop at the end of a runway inspection area at a base in Southwest Asia last summer.

“My two-ship was the first in the country and the farthest into the country at that point. We were the leading edge, making sure there was no air threat for the follow-on package,” said the pilot. “Then my three and four would follow up in that max-range airspeed ... and they would hang out as long as possible to ensure we have actors on station in case Syria launched any airplanes.”

With the F-22’s advanced integrated avionics, the pilots had “very good situational awareness” and “we were not ever worried about being attacked [by] the Syrians,” said the pilot. “It was obvious when we got about halfway through Syria that [their air force was] not going to respond to us,” the pilot said. He “wasn’t convinced” that air defenses would stay dark, though, until the mission aircraft actually got to the

target area and didn’t see any air or surface threat become active.

Despite Syria’s passive defenses, the F-22 pilots kept their guard up throughout the entire operation, keeping an eye out for threats not only to themselves, but also to the F-15Es, F-16s, and B-1s operating nearby.

Around 4 a.m. local time, within five seconds of the desired time-on-target, the JDAMS hit the target, an impressive

## More Intel, More Partners

Arnold. “We certainly aren’t in there doing this alone. Those intel products were used as a type of currency to buy us the basing rights and access we needed so eventually the F-22 [and other aircraft] could go across the border into Syria.”

The rate of overall air strikes has increased since air operations expanded to Syria from some five per day to around 15 per day. Both the number of deliberate and dynamic targets also has increased, Air Forces Central Command spokesman Lt. Col. Edward T. Sholtis told *Air Force Magazine*.

As partner nations began contributing more aircraft and aircrews to the mission, the USAF burden has decreased. Overall, Air Force support has declined from about 70 percent of all sorties in late September to about 60 percent in late November.

As of Nov. 25, US and coalition aircraft had flown more than 10,000 sorties—some 45 percent of them kinetic close air support or interdiction sorties, 30 percent of them tanker sorties, 15 percent ISR, and 10 percent “other types of support sorties, not including intertheater airlift,” said Sholtis.

Partner nations have conducted about one-third of the close air support or interdiction sorties, while the US continues to fly about 90 percent of the air refueling sorties.

“Overall, air refueling represents nearly a third of all aircraft sorties and remains an essential component of wide-ranging and persistent air operations against [ISIS],” he said. “The majority of the US Air Force tanker presence in the CENTCOM area of responsibility historically has been in the Gulf region, and that remains the case.”

KC-135s from the 340th Expeditionary Air Refueling Squadron at Al Udeid AB, Qatar, are among the tankers flying “many

sorties per day.” The squadron is operating 24 hours a day, seven days a week, said squadron commander Lt. Col. Van Thai.

“As the linchpin in most air operations, manning and jets have increased,” said Thai, adding that the squadron tries to support everyone, though it must prioritize where the fuel goes.

Maj. Gen. Jeffrey L. Harrigian, assistant deputy chief of staff for operations, plans, and requirements on the Air Staff, said airpower has been “indispensable” to the anti-ISIS operation, since dubbed Operation Inherent Resolve.

In Iraq, the coalition air campaign is providing Iraq’s new government time to stand up and for the Iraqi security forces to recapture “several tactical operational objectives,” giving them the confidence they need to defeat ISIS, said Harrigian.

Syria has provided an opportunity for airpower to show what it can do. After 13 years of combat operations in Iraq and Afghanistan, “we became very, very good at what we were doing in an environment where we owned the airspace,” said Harrigian. “We could develop targets, we had several forces on the ground. This environment is different.”

This new campaign required “innovative” targeting, he said, noting the Air Force had to rethink how it was going to determine where to strike, where the enemy was located, and how it would use its capabilities. Then it had to educate the joint force on how to leverage those capabilities and “develop these updated target decks.”

For example, in northern Iraq, where the mostly Kurdish Peshmerga is based, joint terminal attack controllers are working from an air operations center trying to develop an understanding of the environment and then they are relaying that information to an MQ-1, MQ-9, F-16, or various other platforms.

In the south, however, the relationship is different because the JTACs are working “hand-in-hand” with their Iraqi counterparts, who are pointing out where their forces are, so the JTACs can call in a Predator or Reaper to get eyes on the ground, and they can determine the appropriate weapon to deliver, said Harrigian.

There are fundamental differences in how airpower supports the Iraq portion of the joint operations area and Syria, Harrigian said, “but from an airman’s perspective, whether it’s Iraq or Syria, we’re able to do that really on the same mission if we have to, and that’s what we bring to the fight and that’s how we operate.”

Without boots on the ground, the onus falls on the airmen of the 480th to quickly and accurately process available intelligence and get that information to the supported commanders for target discovery, said Arnold.

The 480th also has been exploiting weapon systems video from the targeting pods of aircraft “with pointy noses,” a job that previously would have been done at the fighter units or wings.

“When we have a JTAC on the ground, they can point across the street and say, ‘That is the building that the bad guys are in.’ In this case, we’re using persistent ISR, many different flavors, in order to identify the targets for strikes,” said Arnold. “Our airmen are the ones exploiting it as it comes off the jet, so we are able to layer many different types of intelligence on top of one another. I’m talking about signals intelligence, geospatial intelligence, ground moving target indications—all the different types of ints that are out there, we layer them all together and we do analysis fusion and we provide a finished product.” ■



*SrA. Steven Hughes and SSgt. Stephen Halbert connect a liquid coolant supply hose to a Raptor in Southwest Asia on June 17, 2014. At that point, no one expected the F-22s, which were in the region for strategic deterrence and as a safeguard for possible contingency operations, to lead the attack on ISIS.*

USAF photos by TSgt. Russ Scalf

feat given the distance and repeated delays the F-22s encountered.

During a Sept. 23 briefing at the Pentagon, Army Lt. Gen. William C. Mayville Jr., director of operations on the Joint Staff, showed before and after pictures of the command and control facility. He noted that the GPS guided munitions hit only the right side of the building, where the command center was located. That area was completely destroyed.

In a Sept. 25 press conference, Pentagon spokesman Rear Adm. John Kirby said the F-22s did “very, very well the other night, very well.”

### RAPTOR EYES ON SITE

Adrenaline was still running high as the first two F-22s quickly left Syria and headed to a tanker to fill up. The third and fourth F-22s stayed on station for about 60 minutes and continued to provide offensive counterair for the remainder of the strikes.

The assumption was that because of the long drive back to the tanker, the first two Raptors would top off just before the third and fourth F-22s would start running out of fuel and had to head to the tanker themselves. That way there were always Raptor eyes on site, said the pilot.

“It was a relatively uneventful night. We saw a lot of flashes with [night vision



*Amn. Matthew Sutton signals for the removal of the wheel chocks from a Raptor at a forward base in Southwest Asia in June.*

goggles] as the bombs were going off in various target areas, but we didn’t see a whole lot of action from Syria or their ground forces,” said the pilot. “It looked like the vast majority of the action was coming from the coalition bombs.”

With the sun just starting to rise in the east, the Raptors had successfully made it out of Syria and Iraq and were

heading back toward the Persian Gulf when they got a call from an AWACS saying the CAOC needed them to turn around.

Although they didn’t immediately know why, a B-1 needed an escort as it went in for a reattack, but at this point the F-22s had just enough fuel to get back to their home station. The tank-



SrA. Patrick Mooneyham verifies the pressure in a stored energy system on an F-22 in Southwest Asia.



ers they had launched with were in the same boat.

“Gas is always my biggest concern. We had looked at the fuel plan early on and we knew that there was extra gas available for contingencies, but we were completely off the script now ... so I had no idea where the tankers were,” he said.

They quickly determined that only two F-22s were needed for the B-1 escort follow-on mission, so the third and fourth jets headed back without the tanker.

The remaining two pilots started running through a list of nearby airfields in case they had to divert. Though there were plenty to choose from, there weren’t many where the pilots felt comfortable landing an F-22, given the security concerns associated with the aircraft.

“A lot of that is going through my mind as we turn north, not really knowing where to go, knowing that I have to support the mission, ... but then may very well be going to a divert someplace where I don’t want to go,” he said.

After flying north for about 10 minutes, the AWACS controller informed the pilots there was a KC-135 “over on the Iranian border” with enough fuel for them to top off. It wasn’t until they got to the tanker that the two pilots learned the details of their new mission: Escort a B-1 to the western side of Syria so it can reattack some targets missed during the initial bombing campaign. The new target was the farthest point west so far for the pilot.

The first of the initial air campaign’s three waves was mostly unmanned and included more than 40 Tomahawk Land Attack Missiles fired collectively from USS *Arleigh Burke* and USS *Philippine*

*Sea*, striking targets in the vicinity of Aleppo.

The F-22s participated in the second wave along with F-15Es, B-1s, and F-16s, striking ISIS headquarters, “training camps, barracks, and combat vehicles,” said Mayville in September.

Carrier-based aircraft from the Persian Gulf and partner F-16s made up the third wave and focused on “targets in eastern Syria, to include [ISIS] training camps and combat vehicles” in the area around Dayr az-Zawr,” stated Mayville.

By the time the F-22s left the KC-135 along the Iranian border, the third wave was just kicking off, said the pilot.

Deconfliction was not a problem for the F-22s, which were operating solely in an air-to-air capacity now, because they could climb higher than the other aircraft, but the B-1 had to worry about the other aircraft taking off.

The Raptors provided air coverage for the B-1 for another 30 to 45 minutes before refueling for a third time and then heading home.

“There was a lot going on in the mission, a lot to deal with, a lot of changes and contingencies that I didn’t have to deal with in my previous combat experience, as limited as it was,” said the pilot, who previously flew F-15s. “It was a great experience all in all.”

As of Dec. 10, 2014, F-22s had flown less than 100 total combat sorties from their undisclosed operating base, including about a dozen strikes in which multiple weapons were employed, said Air Forces Central Command spokesman Lt. Col. Edward T. Sholtis.

Though it took nearly a decade for the fifth generation aircraft to see combat, the pilot said he doesn’t think the Air Force will suddenly start using the aircraft more freely. The fact is the Raptor is still intended primarily to respond to threats in the air, not on the ground.

“I don’t think it’s going to change the perspective. When there is a threat that requires the F-22, whether it’s an air threat or a surface-to-air missile threat, they will continue to use it. That’s my guess,” he said. “I don’t think it will be as big of a deal [next time it participates in a contingency], but I don’t think that means we’re just going to start using F-22s for any mission, and I think that’s held true in the time since I left.” 🌟