

Farmer's Notes – the P-51 Mustang Myth and the best fighter of WW2
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(c) 2018, Joseph A. Farmer
5madfarmers@gmail.com

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The Myth of the P-51 Mustang and the best fighter of WW2

In 1942 the USAAF 49th Fighter Group undertook the defense of Darwin, Australia. The 49th was composed of new pilots, the US had just entered the war, flying P-40 fighters. The Imperial Japanese Navy's (IJN) Japanese 202nd Air Group, under the 23rd Air Flotilla, was the Japanese unit assigned the attacks on Darwin and conducted 11 attacks from March to August of 1942. Per the 49th FG's unit records 19 P-40 fighters can be attributed as lost to Japanese aircraft (fighters and bombers) but it would be safe to assume it was mainly fighter shoot-downs. From the 202nd AG's records the Japanese lost 8 Zeros which can be attributed to combat. The ratio, and I'm admittedly ignoring IJN bomber losses and potential IJN losses to Anti-Aircraft Artillery (AAA) fire, is thus 8:19 in favor of the IJN.

In 1943 the defense against the raids on Darwin was conducted by the No. 1 Wing, RAAF. The unit, equipped with Spitfires, included veterans of the Battle of Britain. In the 10 raids conducted by the Japanese, that same 202nd Air Group, the Spitfire wing's unit loss record attributes 28 Spitfires lost to Japanese aircraft (as above, mainly to the Zeros). While the Spitfire wing claimed “63 confirmed and 13 probable” victories the 202nd Air Group's records show they lost exactly 4 Zero fighters in combat during those raids. The ratio is thus 4:28 in favor of the Zeros over the Spitfires in these 10 raids.

When reviewing the above, especially the ratio of losses for the Zeros and Spitfires, some people emote. “Maybe the Japanese didn't count aircraft which were write-offs on landing!” That could also be said for the Spitfire wing but the Zeros had to fly home whereas the Spitfires were already home. “Maybe there were other Japanese units involved and they had losses!” Due to the strange operational setup of the Japanese that isn't the case. Simplified, the IJN was responsible for the Solomons and the other islands over in that area while the IJA was responsible for New Guinea. One IJN unit, the 202nd, was based on islands *near* New Guinea and that was the only IJN unit with the range to even get anywhere near Darwin. The Japanese had carriers, true, but they didn't raid Darwin in 1943. The IJA did meet the Spitfires once, the unit records survive, and the ratio was better for the Spitfires (three Spitfires lost against 1 IJA fighter lost) but that doesn't alter that exactly 1 IJN unit was involved. “Maybe the Japanese lied!” Replacement planes and aircrew needed to be requested from the Navy to cover losses. Dead aircrew need to be recorded. Of those 4 Zeros lost, 3 pilots never returned while 1 ditched and was recovered – the records survive. The names of the Japanese pilots are known. Due to the Spitfire losses, and generally poor maintenance of the Spitfires, Air Vice Marshal Adrian Cole requested a P-38 unit for the defense of Darwin in July of 1943. None were available but let's move forward.

Let's assume, for sake of discussion, that you have an infantry unit with 1,000 men. Let's further assume that you're assigned a hill to assault, and take, which has 500 enemy men defending it. Let's review two alternative results:

- 1) You attack the hill and lose 50 men while killing 100 of the enemy. You do not take the hill.
- 2) You attack the hill and lose 700 men but kill all 500 of the enemy and take the hill.

In military terms, the first result is a cheap defeat whereas the second is a costly victory. How many men you kill, or lose, is *secondary to the result of your mission success*. There are those that review the German Panther tank, and the T-34, and will claim that the Panther was the better tank. Let's assume that a Panther tank commander managed to knock out 40 T-34s in overall combat during the war. Does anyone believe that that Panther commander, laying bricks in a Soviet prison camp in 1947 while the Soviets were having their way in Germany, would claim he was successful?

The Zero to P-40 and Zero to Spitfire ratios are unimportant. Neither unit was able to defend Darwin against the attacks and thus the request for P-38s. Which unit, P-40 or Spitfire, did "better?" They both failed in their mission. Everything else is trivia. "What's the better fighter? The Zero, P-40, or Spitfire?" Is this area the answer is the Zero as it was the only one to complete its' mission successfully.

"Can it perform the mission it was designed for successfully?" That, in the final analysis, the what determines if an item is successful or not. The P-39, P-40, Tempest/Typhoon are examples of failures. "But the Russians loved the P-39 in ground attack and the Brits loved the Tempest/Typhoon in that role as well!" If I bought a bathtub and it didn't work as a bathtub, but it did make a very nice planter in the front yard, would that bathtub thus be considered a success? That's without even considering that neither of those aircraft was, in reality, that good in the ground attack role. We'll cover that later.

The Tempest/Typhoon can be reasonably considered as "the Spitfire replacement." Due to their failure the British had no replacement for the Spitfire. Similarly the Japanese never really came up with a successful replacement for the Zero. "They improved the Spitfire!" They improved the P-39 and the Zero but that changes nothing.

First point: to even be considered a success an item must be able to perform the mission it was designed for.

There is a personality type that invariably uses the "corner case to invalidate rule" and clearly doesn't understand that it actually works in reverse. The Ford Mustang was a 2-door automobile for it's entire history. "There is a picture of one from 1963 white has 4 doors and a dealer in California also made some in the 1960s with 4 doors! You're wrong!" If millions of Mustangs were made and all but a handful had two doors the odd extreme counter example doesn't "invalidate" the claim – it confirms it. "The more extreme the counter example the more it confirms the model." The Mustang had 2 doors. Grafting a monkey's tail to a human will not result in "humans have tails" being a true statement.

That personality type just covered apparently doesn't understand the difference between "significant" and "insignificant." If I claimed that the Ford Falcon was only made as a 2-door the claim is significantly wrong. Claiming that the Mustang was strictly a 2-door is significantly right. I mention this for two reasons. One: I'm going to provide some figures in this paper. As an example I'm going to include the internal fuel capacity for the FW-190. I'm aware that there was a small optional internal tank made for that aircraft but that tank doesn't significantly affect overall fuel capacity so I'll ignore it as insignificant. Two: In the following, errors will likely exist but the question

is “are they significant to that part and are the significant overall?” Here, a “freebee.” “The P-39 had 6 .50 caliber machine guns in the wings and also carried a 50mm cannon in the fuselage.” After reading the entire paper ask yourself “are any errors in that claim significant to that aircraft and, if so, is that then significant overall to the paper?”

You’ve heard the story: the USAAF heavy bombers arrived in the ETO and initially bombed targets in France with Spitfires as escort. The P-47s were arriving and the escort of the bombers transitioned to those. Then they started sending the bombers on raids into Germany, under the mistaken assumption that they could defend themselves against fighters, and were blasted out of the sky. Due to the short range of the P-47 they then re-equipped the P-47 units with P-51s as those had the range to escort the bombers into Germany.

Strangely their theory that the bombers could defend themselves against fighters is mainly true. Shooting down the B-17 with either the ME-109 or FW-190 isn’t a trivial affair. If the Germans were limited to those two aircraft the B-17s might have had a chance. Enter the German twins (ME-110 and JU-88 families) and it’s game over. The armament of a single engine fighter is pretty limited but, with regards twins, that isn’t true. The US B-25G had a 75mm cannon in it. What effect would that thing have had on big bombers? Put that cannon in the B-26 and you truly have a big bomber killer. Escort fighters were more needed due to the German twins than the ME-109 or FW-190. The German twins were heavily armed and were deadly. Would the German single engine fighters have been able to stop the Bombers themselves? Maybe, maybe not. Doesn’t matter – the Germans had twins and those were more effective.

The B-17 raid on Schweinfurt took place in August of 1943. It was, for “bomber command,” an unmitigated disaster. To “explain away” the lack of fighter escort the “P-47 didn’t have the range, we needed P-51s” claim was made around this time. As the raid on Schweinfurt was taking place there were no P-51 groups in England. They had P-51s in the US so the airplane was a known quantity. Neither the P-47 with its’ internal fuel capacity of 305 gallons, nor the P-51, with its’ internal fuel capacity of 180 gallons, had a *combat range* of 200 miles. From Colchester in England to Dusseldorf, that’s about the shortest distance between an English and German city, is 257 miles; Germany was out of reach of the P47, true, but it was also out of reach for the P-51. To extend the range of the fighters drop tanks could be used. The P-47 was already plumbed for them whereas the P-51 wasn’t. In September of 1943, the month after the disastrous Schweinfurt raid, General Hap Arnold was briefed on “range extension options” for three fighters: the P-38, P-47, and P-51; I’ll ignore the P-38 for this. The P-51B/C with the 180 gallons it had, and 2 150 gallon drop tanks, is listed with a combat range of 500 miles. Increasing internal fuel to 265 gallons results in a range extension to 750 miles. The P-47D with 305 gallons internal and 2 150 gallon drop tanks is listed as having a combat range of 500 miles. Increasing the internal fuel to 370 extends that to 700. Again, that’s combat range. Later the P-47D would mysteriously be “downgraded” to 600 miles and the P-47M would be further “reduced” to 400 whereas the P-47N jumps to a just over 1,300 mile combat range. “Something’s fishy?” “People are lying.”

Range, combat range, and combat radius. “Range” is basically taking off and flying to another location. “Combat radius” is a circle drawn around a base - “we can cover this area.” “Combat range” is taking off, forming up so you go as a unit, and then flying some place in formation. At that location you fight and then, hopefully in some formation, fly home. As a rule of thumb “combat range” is 40% of range (range divided by two [there and back] – then lose 10% for formation and combat). The Spitfire L.F.I.X. had an internal fuel capacity of 85 (imperial – 102 US) gallons. Listed range for the aircraft, on internal fuel, is 434 miles. There was a 170 gallon (imperial) drop tank configuration for that aircraft and the range for it, with that tank, was 1,355 miles. Taking the “40%” rule I guess one could claim “542 miles” as the combat range in that configuration. One would be wrong.

I take off on the 170 gallon drop tank fuel. I fly 170 gallons away. On the 85 gallon internal fuel I then fight and fly home. See the problem? One must take the internal fuel, subtract the amount used in combat, and the remainder of the internal fuel is what can be matched by drop tanks. With two caveats: 1) Fuel efficiency is reduced when carrying drop tanks due to drag. How much depends on aircraft, tanks, and number of tanks.

2) Tanks are generally dropped before combat is joined. Failure to do so, and there is plenty of combat film showing this, results in bad things happening. If I have 150 gallons of internal fuel, with another 200 in drop tanks, running into the enemy 50 gallons from home will reduce my range greatly.

It's that #2 caveat just above. If I want to escort bombers from England to Berlin, but am met by German fighters at the German border, dropping my tank(s) will preclude me from getting to Berlin. The Germans were very aware of that and met them at the border. The counter to that is to assign fighter units the "penetration mission" - they drop tanks and meet those fighters while the rest, with tanks, continue on. No P-47s will be found reaching Berlin in the raids of 1944 but that isn't saying that they weren't on the Berlin missions – they were assigned the penetration role.

Plane	Internal Fuel	Cubic Inches	Gal/Cube
P-38F/G/H	306	3420	0.09
P-38J/L	416	3420	0.12
P-47C/D	305	2800	0.11
<i>P-47D</i>	745	2800	0.27
P-47D/M	370	2800	0.13
P-47N	556	2800	0.20
<i>P-47N</i>	996	2800	0.36
P-51A	180	1650	0.11
P-51B/C/D	269	1650	0.16
<i>P-51D</i>	569	1650	0.34
F4U-1	237	2800	0.08
F6F	250	2800	0.09
F8F	185	2800	0.07
Spitfire I	102	1650	0.06
Spitfire F Mk XIV	132	2240	0.06
Spitfire F IX	102	1650	0.06
<i>Spitfire L.F.I.X.</i>	210	1650	0.13
Typhoon	180	2240	0.08
FW190A	138	2550	0.05
FW190D	138	2135	0.06
ME-109G	106	2176	0.05
A6M	144	1700	0.08

I'm aware that some airframes are more efficient than others but this at least gives us apples to apples. Internal fuel, engine size (2 for P-38), and the gallons per cubic inch of engine. The aircraft in italics are included for comparison purposes as those are the aircraft with drop tanks. The Spitfire L.F.I.X., with the 90 (imperial) gallon drop tank doesn't even match the P-51D without any tanks at all. That Spitfire/drop tank combination has the same fuel to cubic inch as the P-47D without any tanks. That the Spitfire had no legs I already knew but that the German fighters also had no legs came as information – it does explain the footage of FW-190s with drop tanks being shot down. The P-51D, without tanks, has a ratio of .16 whereas the P-47D, also minus tanks, has a ratio of .13. “The P-51 had more range.” Clearly. The question is “how much more?” Then we get to another point so let's proceed.

Another table.

	Internal (556)	2 165 wing	1 110 belly			
P-47N	3.5	2.8	2.5			
	1946	924	275	3145	1258	
	Internal (370)	2 150 wing	1 75 belly			
P-47M	3.5	2.8	2.5			
	1295	840	187	2322	928.8	

In 1946 some extensive testing of a P-47N were undertaken and those tests included range with various fuel combinations. On just internal fuel the P-47N achieved 3.5 air miles per gallon so, with just that, a range of 1946 miles would be the math (556 gallons X 3.5 miles per gallon). Adding 2 165 gallon wing tanks reduced mileage to 2.8 air miles and adding the 110 gallon belly tank, in addition to the wing tanks, turns in 2.5 air miles per gallon. So reverse that. Burn the 110 gallon belly at 2.5 air miles per gallon (275 miles), then the wing tanks (924 miles), and then the internal fuel (1946 miles). Total range is 3145 miles. Using the “40% rule” that should result in a combat range of 1258 miles. The 1944 paper from Air Material Command listed the combat range for the P-47N at just over 1,300 miles. Presumably AMC used the bigger drop tanks in their test.

Taking the P-47M, it's the same plane other than the wings, and using the P-47N data, but with the smaller tanks used in the ETO, results in 1295+840+187=2322. Apply the 40% rule and the combat range figure is 928 miles.

In the same paper where Air Materiel Command claimed just over 1,300 for the P-47N they listed 600 for the P-47D and 400 for the P-47M. What that paper doesn't include is the fuel configuration used to bake up those numbers.

If you take the AMC figures at face value the P-47D had the range for deep escort missions but the P-47M, at 400 miles, didn't. While the 8th Air Force P-47 units were transitioning to the P-51 the P-47 groups were assigned the penetration role. The 56th Fighter Group declined to transition from P-47s to P-51s. The 56th was assigned the P-47M fighters and apparently lost track of the “limited range” narrative as, on April 17th of 1945, the 56th was assigned a bomber escort mission to Salzburg Austria. From Colchester, not far from Boxted where they were based, to Salzburg is 611 miles. A week earlier they were beating up the airfield at Werder which is on the edge of Potsdam – a suburb of Berlin.

Based on the P-47N/P-47M table above it's clear that the P-47M would have a range, with drop tanks, in excess of 400 miles. Flying an escort mission of 611 miles clearly shows that to be the case. Berlin, roughly 530 miles from Boxted, was a ground attack effort. One doesn't beat up flak defended airfields with drop tanks on the airplanes. The P-47D and P-47M clearly had the range to do deep escort missions. The P-47M actually did them in April of 1945. Let's switch gears.

Apples to apples or the best we can do. P-47M speed at 38,750 feet: 462MPH. Speed at 30,000 feet: 473MPH. Note that the first figure is "guaranteed" whereas the second is War Emergency Power (WEP). P-51H speed at 37,000 feet (military power) is 415MPH. The P-47M is 50MPH faster without WEP at that altitude. P-51H speed at 30,700 feet in WEP is 450MPH – 23MPH slower than the P-47M. P-51H at 16,400 feet (WEP) makes 435MPH. P-47M at 15,000 feet (WEP) makes 418MPH. Planes go faster as they go higher and the P-51 is 1,000 feet higher but I'll ignore that and state that the P-51 was marginally faster at 15,000 feet. P-51H achieved 358MPH at sea level and 403MPH at 10,000 feet (WEP both) so split those and claim 380MPH at 5,000 feet. P-47M, WEP at 5,000 feet, hit 384MPH. Call it even. I used the "split figure" for the P-51 as the test provides sea level and 10,000 feet whereas the P-47 test only provided 5,000 feet. The P-47M was as fast as the P-51H up to about 25,000 feet and it's progressively faster above that (turbocharger versus supercharger is the cause – see my paper on fighters and engines).

Level speed is useful if you're fighting in 2D. Sliding around an invisible table top as it were. Dive, level, climb, maneuver, accelerate. In a dive most of the WW2 propeller driven fighters are about the same (they all hit compressibility and things get interesting) excepting the Zero which was pretty speed limited so, regards the P-47M and P-51H, let's call that even. P-47M time to climb to 15,000 feet was 4.2 minutes. Convenient figure that 4.2 minutes is as the P-51 report doesn't include a 15,000 feet figure but does include a 13,800 feet figure and that's 4.2 minutes. P-47M climbs better.

We could continue with technical minutiae but let's step in with common sense. The performance difference between the P-47 and the P-51 wasn't significant. Whether a pilot shot down a German or was shot down isn't going to boil down to the plane but the situation as the plane's performance difference isn't significantly different. The highest scoring group (claims) was the P-47 group and they produced the two pilots with the highest claims and the most claimed aces – in spite of there being more P-51 groups. Does that mean the P-47 is better? What it means is it isn't worse. 6 of the 9 pilots in the 8th AF with "credited victory" counts at 20 or more were P-47 pilots – 5 of them from the 56th FG.

The P-47 clearly had the range for deep escort missions. The numbers show it and they did it. The P-51 isn't "superior" or "inferior" in performance in any real nature. The P-47 was clearly better able to withstand damage whereas the P-51 had much better fuel efficiency. Looking at the two fighters, with similar performance, the fuel savings isn't insignificant, but, looking harder, it isn't significant. Let's cover that quickly.

The 8th Air Force, based in England, transitioned their groups to P-51s. The 9th Air Force, based in France, equipped their groups with P-47s. While fuel was easy to obtain and transport in England the damaged infrastructure in France clearly made fuel problems evident. See the problem? "Well, the 9th Air Force was doing mainly ground attack and the P-47 was clearly more rugged." Yes, and that brings us to the next point. First, let's put that together another way. Transitioning the P-47s in the 8th Air Force (England) saved gas but was gas in "it's easily available" England. The P-47s, with worse fuel economy, were in "it's not easily available" France. P-47s were in France, and not P-51s, due to ability to do ground attack – not for fuel reasons.

The Soviets used the IL-2 and the Germans used FW-190s in the ground attack role. In both cases, the planes having liquid cooled engines, they armored the aircraft engines. From combat experience a liquid cooled engine will stop operating about 10 minutes after losing its' oil. From combat experience the R-2800 will, as long as the briefed manifold pressure and rpm settings are made *and not altered*, power the plane until the fuel is exhausted. That R-2800 ability makes for some amusing footage as Navy pilots would return to their carriers, with damaged engines, and it was necessary to increase power in the landing process. The engine would rapidly heat and the leaked oil would ignite. If the aircraft assigned for ground attack has a liquid cooled engine, unarmored, you're begging for trouble.

In 1943 the 8th Air Force had fighter groups equipped with P-47s. After the excessive bomber losses over Germany were encountered the narrative was established that P-51s were needed for escort which is clearly a lie as the P-47 always had the ability to use drop tanks. Refusal to properly use the P-47s for escort resulted in lost bomber crews – while the bombers were unescorted. In maintaining the narrative the P-47 groups were transitioned to P-51s for the missions over Germany. Then comes the point that isn't easily seen. As the Luftwaffe ran out of fighters the P-51 units started doing ground attack missions on the way back to base. Count the number of P-51 pilots lost in that activity. If they'd never transitioned they'd have been in P-47s; an aircraft much better suited to ground attack. Bomber command sacrificed bomber crews by refusing to use fighter escort and then sacrificed fighter pilots in maintaining their narrative. Remove the P-51s from the picture and the P-47s do escort and then, after the Luftwaffe is by and large eliminated, do the ground attack. A increased usage of fuel would be seen but a savings in pilots would also be seen.

The myth of the Mustang. If they'd have never appeared it would have been better for the pilots. Was it a "bad fighter?" No, clearly not. It was an "unnecessary fighter." It was assigned for bomber escort, and it could perform that role as well as the P-47, but had the additional role of ground attack and, in that role, was inferior.

Significant and insignificant. Remove the bombers and fighters in England. Does it change anything? No – the Soviet tanks end up in Berlin. German production hit the maximum level in 1944 and started dropping – more from a lack of workers (the Army was eating them) and material. Bombing affected transportation but the impact wasn't overly significant. The war in Europe was a ground war and airplanes weren't overly significant overall.

Best fighter in Europe? The P-47. It was able to perform its designed function and made for a good fighter-bomber in addition. The P-51 was able to perform it's designed function but was lacking in the fighter-bomber department. So a success but an unnecessary one. I'll still call it the second best. Third is a tie between the ME-109 and FW-190. They were competitive as fighters but were simply overcome by the American fighters – mainly due to numbers. The American pilots proved just as good but 100 good pilots will defeat 50 good pilots. Spitfire fans will want the Spitfire to be rated highly but the reality is when the Germans pulled their fighters (short range) back to Germany there was no way for the Spitfires to fight them. Take two poles, 100 feet apart, and chain a dog to each with a 40 foot chain and see what kind of fight you get. In late 1944, after the USAAF had broken the back of the Luftwaffe, the British decided to go back to daylight bombing. 118, 122, 126, 154, 165, 234, 249, 306, 309, 315, 316, 450, 541. Those are some of the RAF squadrons converted from Spitfires to P-51s in 1944 and 1945. That isn't the complete list of squadrons converted, and not all the converted squadrons were assigned to escort the bombers, but it's clear that the British decided to go back to daylight missions in late 1944 – after the Luftwaffe had mainly been erased. Before the British went back to daylight bombing those squadrons had been stationed in England with Spitfires waiting for paper-mache Zeppelins or something. For Brit fans let me ask you a question: the Spitfires, with short

range, were in a “defensive posture” in a location where they’d never meet German fighters. Would it have been better to equip them a year earlier with American fighters? With extended range they could still intercept the random German bomber but could have fought over Germany as well. Escorting the bombers at night wouldn’t be possible but they could at least have reduced German fighter pilot numbers during the day in the hope that the German night fighter force is affected. If one time travels back to early 1944 and asks the Spitfire pilots what answer do you believe they would have given? “Sit in England, doing nothing while British bomber crews are nightly vaporized over Germany, or at least get to Germany to fight?” I have zero doubt of the answer. Fighter pilots are fighter pilots. The Spitfire was a failure; lack of range doomed it to a “defensive posture” in England when the air war was over Germany. “But, but, but! The Battle of Britain!” Hitler never intended to take England. So give them a win but ask yourself how significant it was. The Spitfires did meet German fighters over Northern France. A focus on that is a focus on the insignificant in hopes of losing sight of the significant. The bulk of the German fighters were destroyed over Germany by American fighter pilots while the British fighter pilots were kept on a short leash and that short leash was the Spitfire. When they were given a long leash, the P-51, the bulk of the German fighters were already gone. The bomber crews, American and British, had balls made of brass and I have little doubt the Spitfires did as well – it’s unlikely that the short leash was their choice. Regardless, by the time that was removed the German fighter pilots had been as well.

The “best” fighter in the ETO was the P-47. It performed the air-air role very well and, additionally, did the air-ground role well. The P-51 did the air-air role well but too many pilots were lost in having P-51s do ground attack. The Spitfires were leashed in England while the German fighters were just too far away. The German fighters were good, very good, but failed to defend Germany successfully. The American fighters were very successful against them in spite of having the additional fuel (weight) they carried.

Round 2.

“The USN received the first Corsairs and it failed the carrier trial and thus they were passed on to the USMC for land duty. The F4Us were tested again in 1944 and passed at that time as the British showed the USN how to land them on a carrier.” That story is repeated a lot. Often included in that story: the British showed the USN how to approach a carrier with the F4U to improve visibility.

In June of 1943, CV-17, the Bunker Hill, departed Norfolk with her air group for shake-down exercises. After completing those she departed Norfolk for the west coast in September. On September 28th of 1943 the Bunker Hill left San Diego for the Pacific Fleet. VF-17, the fighter squadron aboard the Bunker Hill, was equipped with F4Us. Clearly the narrative that the Corsair “failed its’ carrier trials” is a myth. As the Royal Navy didn’t even have any F4Us in September of 1943, when the Bunker Hill departed for war, it would be a little difficult for them to show VF-17 pilots how to land. A bigger problem for the “British taught them how to land” story is that landing visibility wasn’t the problem in landing the F4U on a carrier experienced in the early carrier trials.

On the 11th of November, 1943, the USN carriers Bunker Hill, Independence, and Essex launched a series of raids on Rabaul. VF-17 had been off-loaded from the Bunker Hill and replaced by an F6F squadron (covered in a minute). Given that the Japanese had a significant amount of air power at Rabaul, the carrier task force commander was concerned about fighter protection on the raid; holding back F6Fs for CAP reduced, obviously, the number for the strike. On the 9th, two days before the raid, a meeting was held at Munda and it was decided that F4Us would provide CAP for the carriers while their fighters were on the strike. 12 F4Us were assigned to each of the carriers and these 36 F4Us thus

became the first Corsairs used in combat from a carrier. The VF-17 Corsairs arrived over the carriers in the night, while the aircraft aboard were prepared for the strike, and performed CAP. After the strike had been launched USMC Corsairs arrived to take over for VF-17 while they landed and refueled. VF-17 then launched and continued the CAP mission while the USMC F4Us, unable to land on the carriers (not equipped) returned to base. VF-17 had contact with Japanese aircraft both before and after their refueling on the carriers. The Royal Navy received their first F4Us in November of 1943 – the same month that the first combat use of F4Us was conducted by the USN.

Let's lift off that vector and run up another. VMF-124, the first USMC fighter squadron to receive the F4U, was formed in September of 1942. Declared operational in December, they arrived on Guadalcanal in February of 1943. In May of 1943 the USS Essex departed the US for the Pacific Fleet. In August of 1943 the carriers attacked Marcus Island – the first combat use of the F6F. The F4U was first flown in May of 1940 whereas the F6F was first flown in June of 1942. Clearly, having a first flight 2 years later than the F4U, but entering the combat theater only three months later, the F6F was developed and produced much faster than the F4U. Some of this was due to Grumman's size, compared to Vought, but more due to the outbreak of war. With the outbreak of war production of the F4F was transferred from Grumman to General Motors and Grumman itself was expanded greatly to produce the F6F. It'd be fair to say that production of the F6F was assigned to "Grumman and Grumman." To increase production of the F4U the Brewster company was brought in but their contract was eventually canceled due to performance. Thus production of the F4U was intended to be "Vought and Brewster" but that second bit failed. Goodyear was also brought in, and succeeded, but clearly F6F production proceeded faster. The F6F was developed faster and was available in higher production quantities faster. VMF-124 was formed in September of 1942 – the first USMC squadron to receive Corsairs. VF-12, formed in October of 1942, was the first USN fighter squadron to be allocated F4Us. Put another way, the first Navy squadron intended to operate F4Us from a carrier was formed the month following the first USMC squadron to be allocated F4Us and this is after it supposedly failed its' carrier trials.

Let's paint a new, accurate, time-line. When the F4U was first tried on a carrier it exhibited some undesirable behavior – that much is true. If it "failed its' carrier trials" it would have not been allocated, and supplied, to VF-12 and VF-17. VF-12 trained on F4Us but elected to covert to F6Fs so let's remove them from the picture a minute and focus on VF-17. Formed in January of 1943, VF-17 trained on F4F fighters until their F4Us were delivered. On his first landing on an escort carrier the commander of VF-17 found his F4U bounced 20 feet and blew the tires. For an aircraft which requires arresting hook landings, but exhibits a pogo-stick like landing characteristic, the problem is obvious. Land-based F4Us don't use arresting hooks and thus wouldn't have that problem. VF-17 was offered F6Fs to replace the F4U but declined as Vought committed to providing them with F4Us which fixed that problem. In August of 1943 the new F4U-1a aircraft were delivered to VF-17 at Norfolk and they departed for fleet duty the following month. The F4U-1a fixed the oleo-strut issue which the F4U-1 had and that completely solved the bouncing problem the F4U had. It should be noted that the bouncing nature of the F4U-1 had been experienced in the initial carrier landings of the F4U but that didn't preclude the aircraft from being allocated to VF-12 and VF-17. VF-12 had traded in their F4U-1 fighters for F6Fs in July of 1943 – the month before the F4U-1a fighters were delivered to VF-17. The main problem, in the USN experience, in landing the F4U was the defective oleo-strut design as that caused bouncing on landing. That was fixed in the F4U-1a as provided to VF-17 in August of 1943 – before any F4Us were ever supplied to England. Even with the early F4U-1, with the defective strut, the F4U was assigned to VF units with the Squadron Commander having the choice, at that time, of keeping them or trading them for F6Fs. Both VF-12 and VF-17 were offered F6Fs while equipped with the F4U-1.

While in the US, army combat units were assigned to Army Ground Forces. When they departed the US operational control transferred to the theater command and the theater command could pretty much do what they wanted with the units. The USN had essentially the same system. The USN, in the US, had allocated the F4U to VF-12, VF-17, and three additional VF squadrons. VF-12 traded in their F4Us before departing but, as related, VF-17 declined and received the F4U-1a aircraft. Once the Bunker Hill departed San Diego control of it transferred to the Pacific Fleet. Pacific Fleet directed that VF-17 be reassigned to ground duty and an F6F squadron replace them – the reason given was the uncomfortable seats in the F4Us. I know what you're thinking - "if the seats were that uncomfortable they should have been replaced while the unit was in the States as shipping a unit into combat with uncomfortable seats isn't desirable." Pacific Fleet advised the Carrier Air Group 17 (parent of VF-17) that, in their view, the F4Us in theater were all, excepting VF-17, USMC units and ground based. All VF squadrons on the carriers had F6Fs. It would simplify logistics for all F4Us to be in the supply chain that the VMFs were in and for the chain for VF squadrons to be strictly F6Fs. Uncomfortable seats, like landing problems, weren't mentioned and one does need to assume that if it wasn't mentioned it wasn't considered a problem. Some need for "landing problems" to be an issue but, like uncomfortable seats, one would need to prove that as that wasn't mentioned. VF-17 shipped from the US in F4Us so clearly the USN felt the landing problems had been solved. This is reinforced by the offer of F6F replacements made while VF-17 was in the States but, as mentioned, that was before the F4U-1a planes were delivered. The Pacific Fleet reasoning, logistics, really should be taken at face value and attempts to establish any other reason would need to be proven. VF-17 was removed from the Bunker Hill due to logistics desires. That they could still operate from a Carrier was shown in their providing cover for the three carriers on the Rabaul raid. Let's hold that as we'll address it again from another vector in a moment.

Take a look at a map of the Pacific Ocean. Excluding Australia, there is really a series of islands running from Asia (Thailand) and China down to New Guinea. It starts at Asia and curves down and to the right – ending with the Solomons. From the islands on the North of the Bismarck Sea to Japan is a big empty block of ocean. New Guinea and the Philippines fell within the Army theater of operations. The Solomons, and islands near there, were in the USN theater. Put another way, Army units in New Guinea had plenty of land to fighter over whereas the USN pretty much runs out after all the islands around the Bismarck and Solomon Seas are taken. Taking that further, B-29s were stationed in the Mariana Islands with very long flights to Japan – due to a lack of islands closer. What are the odds that F4Us or F6Fs could make it from Guam to Japan? None – excepting on carriers.

When the Bunker Hill departed San Diego, in 1943, the carriers (let's stick to CV carriers and not CVL or CVE) had an air group (CAG) with a fighter, torpedo bomber, and dive bomber squadron. Let's call it 36 planes each; it varied so let's go with that. The primary mission for the USN carriers, in 1943, was the destruction of the Japanese fleet. Thus the torpedo bombers right? The secondary mission was the reducing of Japanese outposts – like Rabaul.

In the 1942 and 1943 campaigns the Japanese fleet had been reduced. It was expected that it would essentially cease to be a force in 1944. The mission of the USN carriers thus changed as a primary mission to sink a fleet which no longer existed isn't useful. Just over half of the dive and torpedo bombers were removed from the carriers (down to 15 each) which freed up space for more "fighter type" aircraft. The USS Intrepid is somewhat unique in the history of that war. The USS Intrepid is the only US fleet carrier, in the 1944-1945 time-frame, to have Corsairs aboard as fighters; thus the Bunker Hill in 1943, with VF-17, and the USS Intrepid, with VF-10, were the only two fleet carriers in the PTO to have had F4U fighters.

It's possible I missed another but I'll go with VF-10 as the sole example. In 1945 F4Us were aboard the Bennington, Hancock, Intrepid, Essex, Shangri La, etc., So large numbers were on carriers, to include USMC F4Us, but they weren't fighters. Excepting the Intrepid anyway.

The mission for the carriers had changed from sinking the Japanese fleet to reducing Japanese air power. Simultaneous to that they no longer had islands for the land based F4U and F6F squadrons. It killed two birds with one stone to reconfigure the Carrier Air Group (CAG) to have a VF (fighters) squadron, a VBF (fighter-bomber) squadron, and the VB and VT (dive bomber and torpedo bomber) squadrons were, as mentioned, knocked down to 15 airplanes each. This resulted in 72 "fighters" per carrier. The "fighter" squadrons (VF) had, excepting VF-10, F6F Hellcats. The "fighter-bomber" squadrons had either F4Us or F6Fs. It would be accurate to say that the previously ground-based USN and USMC squadrons were taken aboard as fighter-bombers as that is what happened.

While aboard a carrier, in a VBF squadron, is the F4U a fighter? Common sense tells us "yes." but I mentioned the technical distinction as the USN, in 1945, still clearly viewed the F6F as the fighter and the F4U as the fighter-bomber. That role, fighter-bomber, carried down to the "strike fighter" or "fighter attack" aircraft as exemplified by the F/A-18.

Let's change vectors again. Vought continued to develop the F4U. Understanding the "Navy view" that it was to be used as a "strike fighter" one sees the F4U receiving the majority of its "improvements" in the ground attack arena. The "AU-1" is the logical end to that path. Grumman, with the F6F in the fighter role, stopped development of that aircraft and produced the F8F. Let's gaze into our crystal ball and look at WW2 as it continued into 1946 (obviously it didn't). What do we see? VF units with F8Fs and VBAs with F4Us. Let's gaze back into that ball a bit later. The F8F, being the fighter, is replaced by the F2H and the carriers have jet fighters. Fighter-bombers, having the ground attack role, are slower to be replaced by jets and thus F2Hs are in the VF squadrons and F4Us in the VBAs.

What was the better fighter – the F6F or the F4U? The F4U is faster and probably has a better climb rate. The F6F is more maneuverable. The F6F was easier to fly, land, and take-off. That's nice but like maximum level speed that isn't what matters. While the F4U was faster and had a better climb rate that would only be useful if it was fighting the F6F. Both planes were faster and had a better climb rate than the fighters they faced – thus the F4U advantage didn't matter. The F6F was easier to fly, takeoff, and land but the USN clearly didn't have a problem with F4U carrier operation – the VBAs established that. Then again VF-17 already had established that.

With the F4U and F6F production deliveries starting pretty close to each other in time, it was decided that new carriers would receive either F6Fs or F4Us, the USMC VMFs would receive F4Us, and *existing carriers would exchange their F4Fs for F6Fs*. It's that last bit. With existing carriers due to receive F6Fs the Pacific Fleet decided that new carriers would be standardized on those. Presumably if the F4U had entered service a bit earlier the USMC may have received F6Fs with the carriers standardized on F4Us. When the USMC was allocated the F4U, and the existing carriers were allocated the F6F to replace the F4F, that "doomed" the F4U in the VF role. Regards production, I'll add one more not readily apparent view. The VF squadrons, early on, received the F6F while the F4U was assigned to both VF and VMF ground based units. There were additional ground based F6F equipped VF units and those were taken aboard carriers as VBAs later on. F6F production was clearly exceeding F4U production at that time. This, and it's also clear from the failure of Brewster, points to

some early F4U production problems. The commander of VF-12 listed “lack of spare parts” as his reason for trading the F4Us for F6F fighters – not landing issues.

What’s the better fighter – the F6F or the F4U? As far as the USN was concerned there really wasn’t much difference between them. The fleet ended up with F6Fs due to early allocations. Was the “pogo-stick” nature of the early F4U-1 somewhat responsible for that? “Well certainly! We need fighters for the USMC and fighters to replace the existing F4Fs. Replace the F4Fs with F6Fs and give the USMC the F4Us while Vought fixes the pogo sticks.” VF-12 was the first Navy squadron allocated F4Us. VF-12 would be the fighter squadron assigned to CV-12 – the Hornet. Clearly the “pogo-stick” nature of the F4U wasn’t responsible. What’s the better fighter – the F6F or the F4U? The USN didn’t see any significant difference between them. The answer is “neither.”

Let’s change vectors. Japan is an island. An island missing some critical raw materials. Whereas Germany was running out of labor and materials as the war progressed, mainly labor, the raw materials were more critical to the Japanese. Remove their fleet and their merchant ships no longer can transport raw materials. Whereas other countries could use transport aircraft for critical materials the Japanese had allocated airplane production to combat aircraft with transports not being in that program. The US Army was responsible for taking New Guinea and the Philippines. General MacArthur claimed that they needed to retake the Philippines for political reasons (it’d be hard to retake the Philippines without taking New Guinea first). I won’t debate that. From a military perspective the Japanese were defeated due to the USN submarines and air power. The USAAF assisted, greatly, in the reduction of Japanese air power but they *removed the air power that mattered less*. New Guinea and the Philippines were taken by the US Army. They were defended by the Japanese Army. The US Navy took the Pacific islands which were in the area of responsibility of the Japanese Navy. Let me add this piece: the Japanese aircraft encountered in the islands in the South Pacific, outside of New Guinea, were Japanese Navy aircraft – mainly operating from land bases. *This was due to the Japanese Army refusing to take air units from China for the defense of those islands*. The destruction of the Japanese Navy, primarily its’ air arm, permitted the bypassing of Japanese held islands and the destruction of Japanese Naval units. It also permitted the seizure of islands which, providing forward basing, allowed the home islands to be ever more isolated.

In the ETO the German fighters were taken out by the USAAF fighters. The P-47 had the advantage over the P-51 in that it could do ground attack well in addition to air to air combat. The P-47 is thus the “best” fighter in the ETO. That is the theater where the Soviet ground forces were the determining factor on how the war was won.

In the PTO the Japanese were defeated by USN air power and submarines. The USN air power, skipping the F4F, was provided by F4Us and F6Fs. The F6F destroyed more Japanese planes whereas the F4Us removed the most experienced Japanese pilots. There really isn’t any significant “better” or “worse” with respect to the F6F and F4U.

The best fighter of WW2 was the fighter that fought in the theater where it mattered more. The F4U and the F6F.

Some notes.

First, the F4U. A “narrative” was established and repeated by a host of authors after the war. In 1989 “The Jolly Rogers: The Story of Tom Blackburn and Navy Fighting Squadron VF-17” was published. The author, Tom Blackburn, was the commanding officer of VF-17 in WW2. Given that Tom

Blackburn's story, and he was the one in the best position to know, debunked the existing narrative one would hope people would simply ignore that early narrative as nonsense. Instead people seem to want to keep that narrative and try to integrate information from Blackburn into it. That the Bunker Hill sailed from San Diego with F4Us should have precluded that narrative from ever starting – poor work on the authors that made the spurious claims.

Secondly, and this is kind of weird maybe, is the P-47 thing. The 56th Fighter Group eventually evolved into the 56th TFTW. In the early 1980s, stationed at MacDill AFB in Tampa Florida, they had 4 squadrons of F-16s with a primary mission of transitioning/training F-16 pilots. As the “lineage successor” to the 56th Fighter Group they had their records. The unit historian's office was located, next to hanger 5, in building P9. Working night shifts in that building, possessing (with permission) a key to the historian's office was a much younger me. Perhaps my understanding that the P-47, as used in the 56th FG, was a very good fighter, and really didn't give up anything to the P-51, came from some nights soaking up the wartime records. I will claim that, while pretty young, I didn't dismiss the P-47.

Thirdly, this paper. Oddly I decided to write it after doing some pretty extensive reading of the Japanese accounts of the war. The picture the Japanese, from interrogations right after the surrender, paint came as pretty shocking. Not in the “they're full of nonsense” way. They perceived the war differently. A narrative built up, during the war and after, from the American perspective. That completely misses, and it's quite significant, the Japanese perspective. Why that research lead to this paper is kind of convoluted but it did. If 500 people each give you a piece to a jigsaw puzzle and you are able to complete the puzzle without any pieces not fitting it's clear that the pieces are valid as is the puzzle. Interrogations of the Japanese, at widely separated locations, assures that it's not some “let's paint a picture that's wrong but we'll all agree on.” They were very truthful and the stories they all tell fit together. “The Japanese lost their experienced aircrews at Midway.” That's wrong. Most of them ditched near Japanese destroyers and survived. So say the Japanese and, more importantly, chronologically later stories include those pilots.

Fourthly, research. As this is a free paper I didn't spend the usual amount of time doing research. Therefore I possibly made it all up. Perhaps I only made some of it up. Perhaps I didn't make any of it up. Feel free to check every bit and see if you can find errors. Then feel free to determine if they're significant.

Fifthly, apples and bananas and tangerine flavored claims. Two parts to this. In the Battle of the Coral Sea the Japanese aviators sank two battleships – one American and one British. Sure they did – they made the claim. Other aviators backed them up. As the war progressed it became obvious to the higher ups in the Japanese Navy that the claims being made were, to use the translated word for what was said, absurd. The Japanese were not stupid. According to them, and they tended to be truthful, they weren't able to crack USN codes but they did figure out that USN carriers tended to use a radio frequency and never changed it. In just about every battle the Japanese aviators would return – having sunk “5 aircraft carriers” or whatever number. Based on radio traffic the higher command had a real good idea how many carriers were there. After the engagement that same number would be detected broadcasting. “You didn't sink any.” Using “claims” is going to result in nonsense. Doesn't matter which country is involved – claims are nonsense. Loss records are the only record which should be trusted. The Lexington, Yorktown, Wasp, Hornet were all sunk. USN records are clear. Per Japanese aviator claim records the Enterprise was likely sunk 4 or 5 times but, checking loss records, it never was.

I'm not going to check, feel free to do so, but the F8F had a climb rate of either 4,500 feet per minute or 6,300 feet per minute. The USN performance charts for the aircraft list about 4,500 but there are claims that it did 6,000+ right after the war in a record test. Sure – google it. “An unmodified production F8F-1 set a 1946 time-to-climb record (after a run of 115 ft/35 m) of 10,000 ft (3,048 m) in 94 seconds (**6,383 fpm**). The Bearcat held this record for 10 years until it was broken by a jet fighter (which still could not match the Bearcat's short takeoff distance).” The Bearcat is a pretty light (in US terms) airplane. Remove the guns and ammunition. Is that “unmodified?” Fill it with exactly enough gas to do the test. Is that “unmodified?” Heat the engine up, on the ground, and then do the test burning water/alcohol. Is that “unmodified?” Japanese aircraft were tested by the US after capture. That they used better fuel than the Japanese had is clear – see my paper on Fighters and Engines. Were they armed? What was the gas load? Etc., etc., etc.

Leverage the two. “A Japanese pilot flying a Shiden Kai met 12 (it's invariably 12) Hellcats (sometimes it's Corsairs) and shot down 4! The Shiden Kai had better performance than the Hellcat (Corsair!)” Show me the loss record. Show me where you obtained those performance figures for the N1K (hint: I already know).

Claims increase as one starts to lose. Countries need heroes. As their fortunes sink they need more and bigger heroes. “While it's true that the Soviets are at the gates of Berlin let us distract you with Gefreiter Helmut Gotke. He's only 16 but has destroyed 25 Soviet tanks with Panzerfausts!” Bong is credited with 40 kills. Early war. When it was going badly. Do I trust the claims? “No.” As the war progressed, and the USN started doing better, I suspect the claims get ... well they're claims so it doesn't matter. Show me loss records.

http://www.5madfarmers.com/phpBB3_5mf/viewtopic.php?f=43&t=684

Free papers. The one titled “WW2 Fighters and Engines” is related. As is the Japanese War View one.

I'll toss this one in here as it's related and won't be done separately. What was the better fighter in the Korean War – the F-86 or the MIG-15? “The F-86 had a positive kill rate over the MIG-15. Ergo it's the better fighter.” The claim records in favor of the F-86 appear to be true from loss records.

When the Chinese launched their offensive in North Korea it came as an unwelcome surprise party for the U.N. ground forces. How had the Chinese managed to move the troops and supplies into position in such a fashion that it came as the shock it did? “Night movement.” Some of that no doubt helped but the answer is simple really:

- 1) The F-86 was assigned to achieve air superiority over North Korea. It didn't.
- 2) The MIG-15 was assigned the mission to deny air superiority over North Korea. It did.
- 3) Without air superiority, reconnaissance flights over North Korea were impacted.
- 4) Surprise party.

The MIG-15 was the better fighter. It succeeded in its' mission. Ask the ground troops which received the Chinese surprise party and they'd be pretty clear on that.

Cheers.