

PROFILE Aircraft



Republic P-47N Thunderbolt by Roger A. Freeman





Editorially speaking ... No. 30

AUTHORS DO TRY. Especially authors of *Profiles*. Mining for new facts. Right up to the very last minutes. Sometimes there are "Circumstances Beyond Our Control". So the Editor accommodates.

But then, like the sad story of The-Fish-That-Got-Away (happy story, fish-wise), there comes a time when the Editor yells "Too late!"

In fact there was a case only the other day. "Ignore this," wrote the Author travelling hopefully, "if too late, but some of Republic's trials Thunderbolts were distinguished by deep yellow painted cowlings and tails. Other air traffic was advised to keep clear of these easily recognized test aircraft which might be engaged in special measured flight runs."

Ten out of ten for trying.

CHARLES W. CAIN

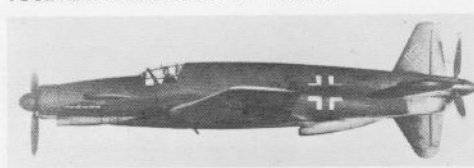
ABOUT THE AUTHOR

No. 262: Republic P-47N Thunderbolt

Roger A. Freeman was born, raised and now farms in Britain's East Anglia. In World War Two, young Freeman was literally a stone's throw away from the genuine article. Needless to say, they were P-47 Thunderbolts of the 9th Air Force.

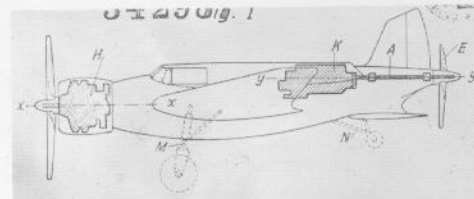
Roger Freeman writes on the USAAF/USAF with such authority that he has gained admiring recognition among discerning American historians—not least for his massive tome "The Mighty Eighth" (Macdonald). His previous *Profile* was No. 205: Boeing B-17G Fortress.

YOUR NEXT AIRCRAFT PROFILE—No. 263



No. 263: Dornier Do 335 variants

Here's a foretaste of the good things to be found in J.-M. Lefebvre's satisfyingly illustrated first *Profile*. The baby Gö 9 (middle) was a Do 335 test vehicle and the 1935-patented Italian Jona 10 fighter-bomber (below) will surprise many. No. 263 *Profile* coming soon!



Now available

Aircraft Profile No. 259
Gen. Dynamics F-111A-F & FB-111

Price: 55p/\$2.50

Now for something completely different, the revolutionary swing-wing two-seater that serves in both the Tactical and Strategic Air Commands of the USAF, respectively in Tactical Fighter and Bombardment (Medium) Wings.

Author Kurt Miska provides an exhaustive study worthy of this impressive aircraft. Colour artwork, by M. Trim, depicts F-111 sub-variants A, B, C, E and F and FB-111A.



Profile Finder No. 3:

This is the third (see *Profile* Nos. 260 & 261) of four parts covering all the *Aircraft Profiles* published from No. 1 to No. 258. Price details and addresses are printed on the inside back cover of this *Profile*.

By Country of Origin and Period of Use

- (1) ■■■■ World War 1: 1914-18
- (2) ■■■■ Post-W.W.1: 1920s-1930s
- (3) ■■■■ World War 2: 1939-45
- (4) ■■■■ Post-W.W.2: 1950s-1970s

Key: 151/7—Profile No. 151 to be found in Bound Volume 7

Germany

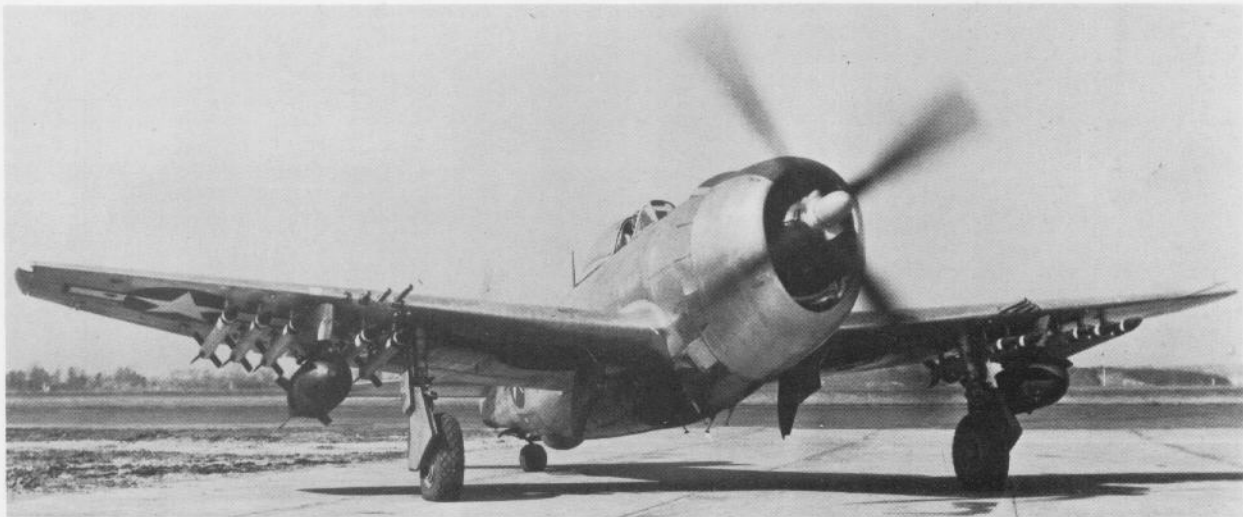
- | | |
|--------|-----------------------------------|
| | ALBATROS |
| 127/6 | ■■■■ D I-D III |
| 9/1 | ■■■■ D V |
| | ARADO |
| 215/10 | ■■■ Ar 234 Blitz |
| | AVIATIK (see Ö. Aviatik: |
| | Berg D I, Austria-Hungary) |
| | BÜCKER |
| 222/10 | ■■■ Bü 131 Jungmann |
| | DORNIER |
| 164/7 | ■■■ D 17 & 215 |
| | FIESELER |
| 228/11 | ■■■ Fi 156 Storch |
| | FOCKE-WULF |
| 3/1 | ■■■ FW 190 A |
| 94/4 | ■■■ FW 190 D/Ta 152 Series |
| 99/5 | ■■■ FW 200 (Condor) |

- | | |
|--------|---|
| | FOKKER |
| 25/2 | ■■■ D VII |
| 67/3 | ■■■ D VIII |
| 55/3 | ■■■ Dr I (Triplane) |
| 38/2 | ■■■ Monoplanes (Eindeckers) |
| | GOTHA |
| 115/5 | ■■■ G I-G V |
| | HEINKEL |
| 15/1 | ■■■ He 111 H |
| 203/9 | ■■■ He 162 (Salamander) |
| 234/11 | ■■■ He 177 (Greif) |
| 219/10 | ■■■ He 219 Uhu |
| | HENSCHEL |
| 69/3 | ■■■ Hs 129 |
| | JUNKERS |
| 177/8 | ■■■ Ju 52 Series (Ju 52/3m) |
| 76/4 | ■■■ Ju 87 A & B. ('Stuka') ('A'— |
| | 'Anton'; 'B'—'Berta') |
| 211/10 | ■■■ Ju 87 D Variants ('Stuka') ('D'—'Dora') |
| 29/2 | ■■■ Ju 88 A |
| 148/7 | ■■■ Ju 88 Night Fighters; |
| 187/8 | ■■■ Monoplanes ('Blechesel') |
| | L.F.G. (see ROLAND) |
| | MESSERSCHMITT |
| 40/2 | ■■■ Bf 109 E ('E'—'Emil') |
| 184/8 | ■■■ Bf 109 F ('F'—'Friedrich') |
| 113/5 | ■■■ Bf 109 G ('G'—'Gustav') |
| 23/1 | ■■■ Bf 110 (Day Fighters) |
| 207/9 | ■■■ Bf 110 (Night Fighters) |
| 225/11 | ■■■ Me 163 Komet |
| 161/7 | ■■■ Me 210/410 Series |
| 130/6 | ■■■ Me 262 (Schwalbe/Sturm-vogel) |
| | PFALZ |
| 43/2 | ■■■ D III |
| 199/9 | ■■■ D XII (& D XIV) |
| | PHÖNIX (see AUSTRIA-HUNGARY) |
| | ROLAND (L.F.G.) |
| 163/7 | ■■■ C II ('Walflisch') |
| | SIEMENS-SCHUCKERT |
| 86/4 | ■■■ D III & IV |
| | UDET |
| 257/13 | ■■■ U-12 Flamingo |

†Line drawings, with cross sections for accurate model making, are available for these types from 'Plans Service', Model and Allied Publications Ltd, 13-35 Bridge Street, Hemel Hempstead, Herts, England. Send 3p/25c S.A.E. for their full price list of 'Scale Aircraft Drawings'.

Japan (*Allied code names)

- | | |
|--------|---|
| | AICHI |
| 241/12 | ■■■ D3A ('Val') & Yokosuka D4Y ('Judy') Carrier bombers |
| | KAWANISHI |
| 233/11 | ■■■ Four-motor Flying-boats: H6K 'Mavis' & H8K 'Emily' * |
| 213/10 | ■■■ Kyofu; Shiden & Shiden Kai Variants ('Rex' *; 'George' *) |
| | KAWASAKI |
| 105/5 | ■■■ Ki-45 Tonyu ('Nick' *) |
| 118/5 | ■■■ Ki-61 Hein ('Tony' *) |
| | MITSUBISHI |
| 129/6 | ■■■ A6M2 Zero-Sen ('Zeke' * & 'Rufe' * floatplane) |
| 190/8 | ■■■ A6M3 Zero-Sen ('Hamp' *) |
| 236/12 | ■■■ A6M5/8 Zero-Sen ('Zeke 52' *) (see Nos. 129 & 190) |
| 160/7 | ■■■ G3M ('Nell' *) & Yokosuka L3Y 'Tina' * |
| 210/9 | ■■■ G4M 'Betty' * (& Ohka Bomb —'Baka' *) |
| 172/8 | ■■■ Ki-21 ('Sally' *) & Ki-57/MC-20 'Topsy' * |
| 82/4 | ■■■ Ki-46 ('Dinah' *) |
| | NAKAJIMA |
| 141/6 | ■■■ B5N 'Kate' * |
| 46/2 | ■■■ Ki-43 Hayabusa ('Oscar' *) |
| 255/13 | ■■■ Ki-44 Shoki ('Tojo' *) |
| 70/3 | ■■■ Ki-84 Hayate ('Frank' *) |
| | YOKOSUKA |
| | D4Y ('Judy') (see AICHI D3A) |



Republic P-47N Thunderbolt

by Roger A. Freeman

The Republic P-47 Thunderbolt was, unquestionably, the biggest, toughest and most dependable single-engine, first-line fighter of World War Two. It was also the most weighty and, if concentrated firepower is the criterion, the P-47 was the most devastatingly armed.

The last large-scale production model was the P-47N. With its far greater fuel capacity than earlier combat models, the P-47N was produced primarily for Pacific war zone operations. Missions across the vast Pacific wastes frequently meant round trips of seven hours or more. In this respect, the P-47N was to shine as the supreme juggernaut among single-engine fighters.

By the Fall or autumn of 1943, 47-year-old, Georgia (Tiflis)-born designer Alexander Kartveli's Republic P-47 Thunderbolt had been proved a redoubtable fighter aircraft in combat operations over north-west Europe and the SWPA or South-west Pacific Area.

Despite being unusually large and heavy in comparison with single-seat fighter contemporaries, the P-47 was extremely fast and fairly manoeuvrable at altitudes above 20,000 feet. Wisely employed, the P-47 could duel with all comers and emerge the victor. However, in the denser air at lower altitudes, especially under 15,000 feet, the Thunderbolt's size and weight hampered both manoeuvrability and speed, placing it at a distinct disadvantage in engagements with the best enemy interceptors. The Thunderbolt lagged particularly in turns and acceleration and a wise pilot did not readily seek combat below 15,000 feet.

The addition of water-injection equipment in

late 1943 allowed more power to be drawn from the big, 18-cylinder Pratt & Whitney "Twenty-eight hundred" radial engine for brief spells and this greatly helped performance, particularly at low altitude. Both the Eighth Air Force in England (who had introduced the P-47C to combat early in the year) and the Fifth Air Force in New Guinea, had found that providing speed was kept above 250 miles per hour and the aircraft was used in "straight-pass" combat and not in "turning-fights", it was a formidable fighter. Major assets were the high diving speed (up to terminal velocity of 550 mph-plus) enabling it to overhaul any enemy fighter with ease—or, equally, to escape if being pursued—and the eight 0.50-inch calibre ("Fifty-caliber") Browning machine-guns, which were unequalled in their destructive power for fighter-versus-fighter combat because of the heavy concentration achieved by a rapid rate of fire.

There was, however, one overriding deficiency in the P-47 for both these Air Forces, and that was endurance. The powerful 2,000 hp R-2800 Double Wasp radial used fuel at a prodigious rate, particularly under combat conditions, and although the P-47's internal tankage of 305 US gallons (254 Imperial gallons) was generous for an interceptor, with an average mission consumption of 100 US gals per hour, it was altogether inadequate for escorting bombers on sorties to targets 300 or 400 miles from base. In both the European and Pacific theatres of war P-47 range had been extended by fitting externally-slung auxiliary "drop-tanks" but these did not entirely resolve the situation. If the enemy chose to attack soon after the escort fighters entered his airspace, the P-47s had to

*The second P-47N-5-RE, 44-88335, with a load of ten 5 in. rockets and two 1,000 lb high-explosive bombs. The P-47N-5-RE introduced "zero-length" rocket launchers on the Long-Range Wing Thunderbolt.
(Photo: Pratt & Whitney)*



jettison their drop-tanks in order to attain maximum speed and manoeuvrability in combat. This action seriously depleted fuel supplies and effectively prevented the Thunderbolts from continuing the escort after dealing with their antagonists.

The manufacturers, Republic Aviation Corporation of Farmingdale, Long Island, New York, were pressed by the appropriate United States Army Air Forces' agencies to build greater endurance into the Thunderbolt. Republic engineering representatives, with Fifth and Eighth Air Force fighter groups in the field, forwarded similar views to Farmingdale. Improving the endurance of the P-47 became a major priority with the design studies team at Republic.

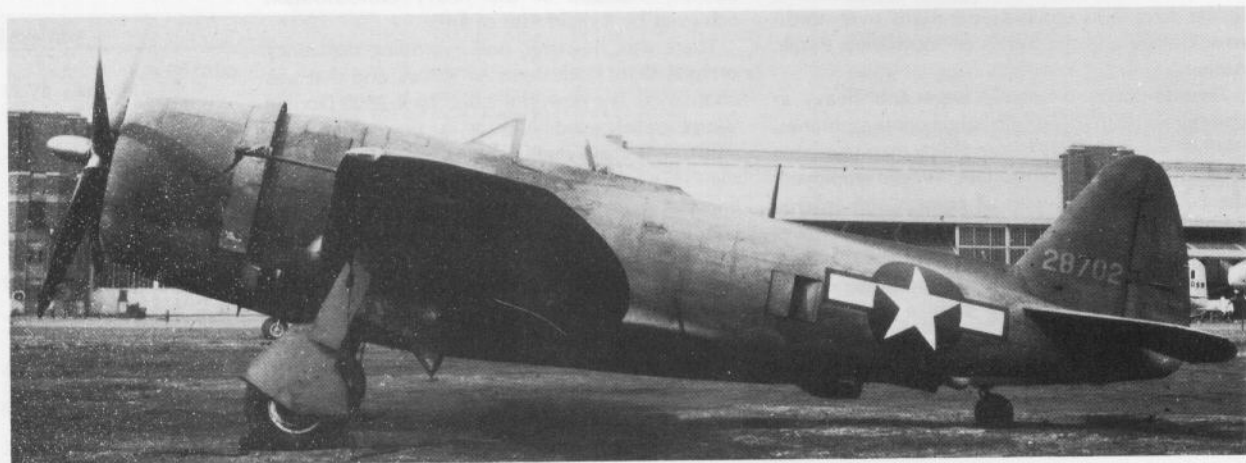
The two fuel tanks in the P-47's fuselage were situated around the aircraft's centre-of-gravity, the main tank of 205 US gallons capacity being placed forward and below the instrument panel firewall. Republic engineers found that space was available to allow this tank to be increased in size, and redesign enabled an extra 65 US gals to be accommodated. The new tank was introduced on the Farmingdale production-line with the P-47D-15-RA which began reaching operational units in the early winter of 1943. Welcome as this extra

gallorage was, it still did not enhance the operational employment of the Thunderbolt, to any marked degree. The problems of adding still further internal tankage were explored throughout the winter of 1943-44. For example, it was evident that no more room for fuel could be found in the fuselage without a major redesign. Similarly, there was also no place in the wing where fuel cells could be squeezed—unless the wing were to be enlarged. Design studies eventually produced a solution that would not only double the aircraft's range but, also, would confine essential new engineering mainly to one major component—thus causing minimum disruption of continuing production.

Basically, the inner section of each wing was lengthened by some 18 inches at the root end. Four small, interconnected, fuel cells with a total capacity of 100 US gals were placed in this root area between the main undercarriage and the fuselage. This kept the additional fuel weight around the centre-of-gravity so that flight characteristics would not be adversely affected. The main undercarriage and gun compartment of the inner wing section remained largely unchanged although the undercarriage tread was increased

The XP-47N on an early test flight. Photographic evidence indicates that this Thunderbolt was never fitted with a fin fillet.
(Photo: Harold G. Martin)

The XP-47K with the prototype Long-Range Wing. This photograph was taken in 1945 after a dorsal fin fillet had been added to give the aircraft better directional stability.
(Photo: Harold G. Martin)



by 24 inches. To reduce the span, the characteristic Kartveli-curved wing tips which distinguished earlier Thunderbolts were deleted and a "clipped" fairing substituted. Even so, the overall span was still to be some 18 inches greater than with the original P-47 wing.

Known as the "Long-Range Wing", the new structure was first tested on the experimental model XP-47K (AAF serial: 42-8702). This particular aircraft, the last P-47D-5-RE from the Farmingdale production line was the first Thunderbolt to be modified in the summer of 1943 to take a 360°-vision "bubble" hood to improve the pilot's all-round visibility. This canopy was eventually introduced into production on late-block P-47Ds. After the successful completion of these experiments, the XP-47K was selected for reworking with the Long-Range Wing since it had already been planned that a production aircraft with the new wing would also feature the bubble canopy. At the time this project was initiated, no production P-47s with a bubble hood were yet available.

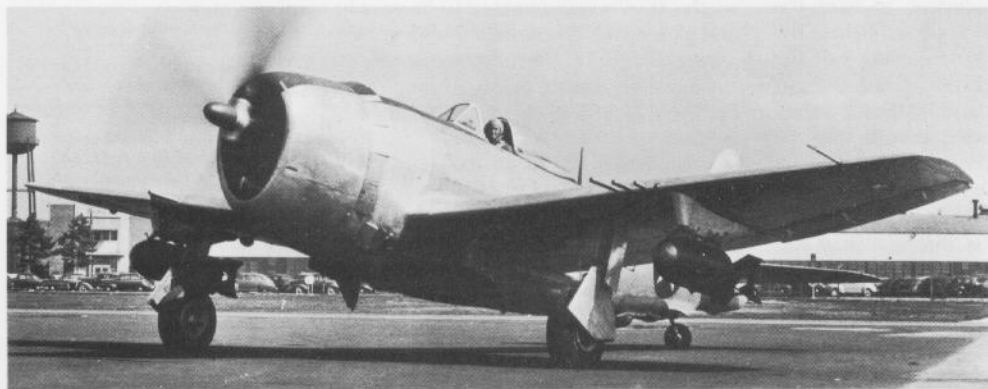
The XP-47K with the Long-Range Wing was tested during the spring of 1944. While being declared satisfactory for operations at all normal flight altitudes, the increase in gross weight had a telling effect on performance, despite being fitted with a R-2800-59 incorporating water-injection. However, for production versions the uprated R-2800-57 "C"-series engine was projected.

This engine could produce 2,800 hp at maximum output (brief periods only) compared with 2,300 hp for the R-2800-59 "B"-series.¹

Similar to the "B"-series Double Wasp, the "C" incorporated a number of changes and improvements to provide greater power and increased engine speed without increases in cylinder displacement or weight. In fact, it was slightly lighter than the "B"-series models. The US Navy had originally ordered and funded the "C" engine. Better cooling provided by additional cylinder fin area—in conjunction with other refinements—permitted the use of a higher maximum manifold-pressure, namely 72 inches Hg (boost) with water-injection as against the "B"-series' 64 inches Hg with water.

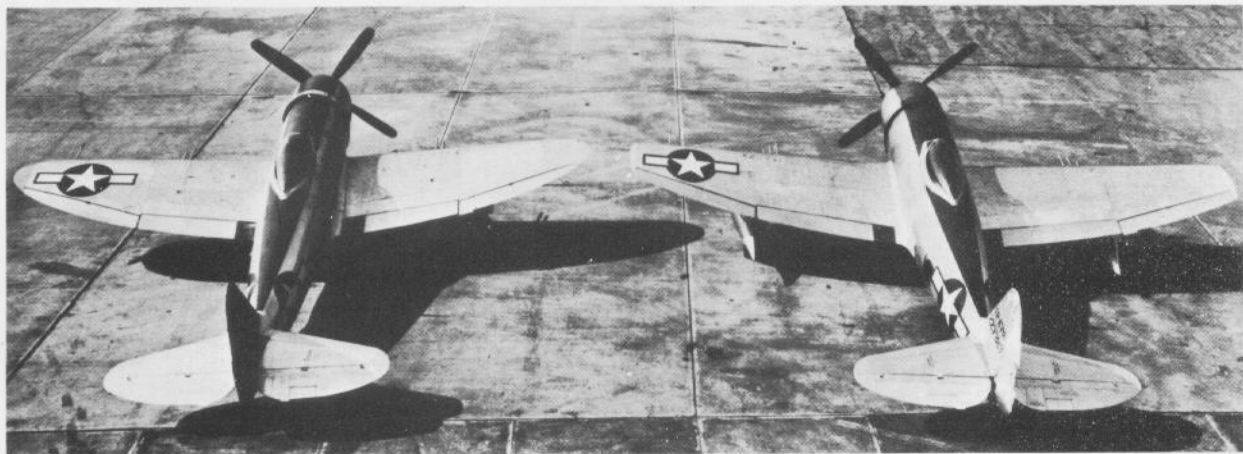
XP-47N: A prototype aircraft incorporating both the R-2800 "C" type engine and the Long-Range Wing was ordered in the spring of 1944. The airframe allocated was that of a P-47D-27-RE (AAF serial: 42-27387) that had originally been taken from the Farmingdale line for modification into a service-evaluation YP-47M. This YP-47M

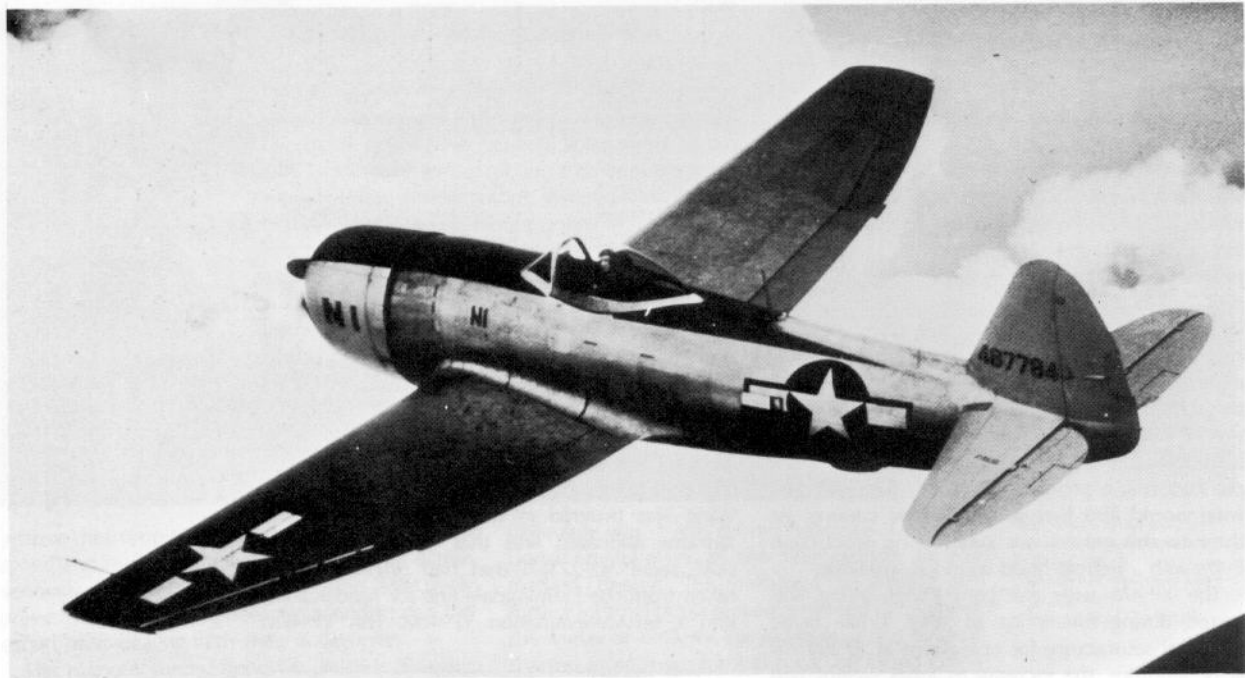
¹ The later model number for the older engine stems from the introduction of water-injection after the first "C"-series engine had been designated for the USAAF. The letter designations were Pratt & Whitney identifications, whereas the number suffix was official military; even-numbers were used for US Navy models and odd-numbers for USAAF models.



XP-47N, with two 1,000 lb bombs on the wing pylons, taxiing at Farmingdale. The wider track on N models aided stability during ground movement with heavy loads. (Photo: Republic)

This photograph, taken from the airfield tower at Farmingdale, shows the contrasting wing shapes of the P-47D and XP-47N. The extended root sections of the Long-Range Wing placed the gun and undercarriage bays further from the fuselage but allowed larger flaps than on the D model. (Photo: Republic)





service-test designation version of the P-47D was fitted with the R-2800 "C" engine. Apart from the "C" engine and Long-Range Wing, the XP-47N featured a number of other changes, notably automatic engine control devices to ease the pilot's monitoring lot on long-range flights. The Unilever Power Control system coupled the controls for throttle, boost (turbosupercharger) and propeller-pitch, and automatically varied them, subject to the prevailing altitude and the power setting of the lever. Work on the prototype took only 56 days to complete.

The experimental XP-47N made its first flight on 22nd July 1944, at the end of that month, it was passed to the AAF's Wright Field, at Columbus, Ohio, for evaluation by the Flight Test Branch of Air Materiel Command. Between August 1 and 6, it was put through a thorough flight evaluation programme, principally by Major F. A. Borsodi,¹ Acting Chief of the unit, and Captain R. B. Johnston, a senior test pilot. Their report was largely complimentary. The tests were made with full internal fuel load of 570 US gals plus, alternatively, 660 US gals in two 330 US gals external tanks carried on the wing racks, making the gross weight of the aircraft 20,080 lb; or, with two 165 US gals external tanks or two 1,000-lb bombs, in which cases the gross weight was 18,080 lb. Not surprisingly the take-off runs were considered long and initial climb slow, but such overload conditions were not thought to be either dangerous or doubtful.

The XP-47N was found slightly unstable with

full internal fuel. This was particularly evident during climbs, when the aircraft was discovered to be longitudinally unstable until approximately half the auxiliary fuel had been consumed. Even so, the XP-47N was admitted to be easy to handle and pleasant to fly—despite this weight imposition—and all control forces were considered "light".

Devoid of external stores, of drop tanks and/or bombs, the turning radius was thought to be an improvement on the P-47D and the XP-47N did not "mush" as much as the standard D model in a tight turn. At 400 mph IAS (indicated air speed), the aileron loads were fairly heavy but not objectionable. Overall, handling characteristics were said to be "excellent". Noise level was low, vibration very slight, and the cockpit was found comfortable.

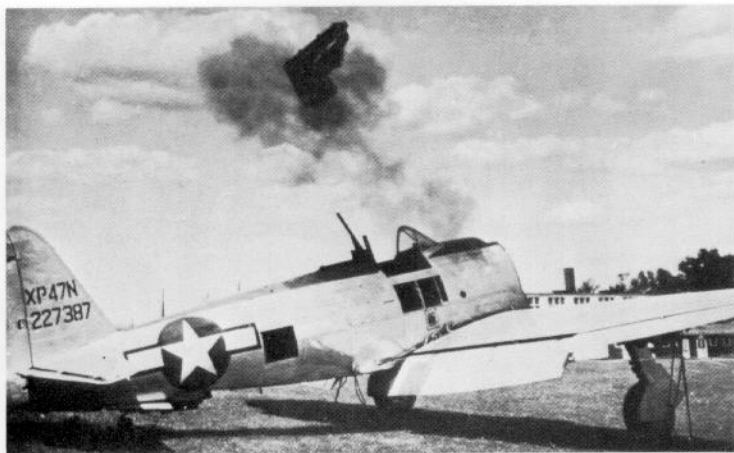
However, the Unilever Power Control System was highly unsatisfactory, causing power surges

The first production P-47N-1-RE which was completed in September 1944 and used for test flying by the manufacturers. (Photo: Republic)

Top ▶
Thunderbolt 44-88335 climbing with the 3,400 lb load of rockets and bombs seen in the title-page photograph. (Photo: Pratt & Whitney)

▶ *Trio of newly completed P-47N-5-RE's. The same photocall resulted in two further views illustrated on the next page. (Photo: Republic)*

Demise of XP-47N. In 1946, the gutted airframe was used for early static experiments with an ejector seat at Wright Field, Ohio. This photograph was released in June of that year. (Photo: USAAF)

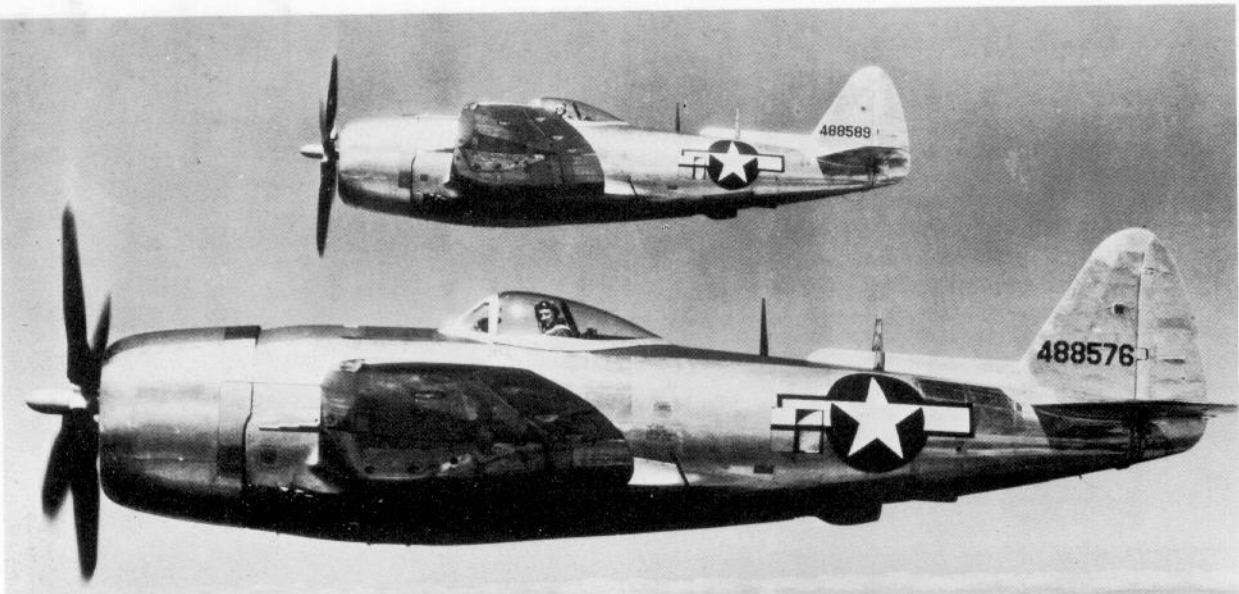


¹Frederic Borsodi was credited with being the first person to actually observe shock waves on a wing during a compressibility dive (in a North American P-51D Mustang). He was killed on active service in England in early 1945.

in climbs, propeller over-speeding, and undue power increases with only slight movement of the lever. Because of this erratic behaviour both Wright Field test pilots disconnected the system before effecting landing approaches.

Maximum range figures extracted during these tests were: 2,190 statute miles with (570 US gals external fuel and 600 gals in external tanks) at 315 mph at 25,000 feet, allowing 30 minutes reserve flying time. However, in practice only 160 gals could be drawn from the wing-root tanks on the XP-47N and the true range figure of this aircraft was 2,170 miles. Nevertheless, as this computation allowed 15 minutes combat at full power and 5 minutes at War Emergency power (water-injection), it was a realistic range for flying escort missions of 1,000 miles combat-radius from base.





P-47N-1-RE: With the establishment of Boeing B-29 Superfortress bombers of the 20th Air Force in the western Pacific and the need for long-range fighters to escort them on missions to the Japanese homeland, the P-47N project became of increasing interest to the USAAF, particularly as it offered superior range advantages over the North American P-51D Mustang, which was then currently accepted as the best long-range fighter available. An order had been placed on the showing of the XP-47K with the Long-Range Wing and this was approved

on June 30 1944 and tooling-up began at Farmingdale almost immediately. The first production version, the P-47N-1-RE, was completed on September 16 1944 but initial production was slow because of manufacturing difficulties with the new wing. In the interim, 130 P-47Ms were turned out, these being P-47D-30-RE airframes with the new R-2800-57 engines intended for the N models.

With the new Long-Range Wing, Republic took the major step of setting-up facilities to manufacture the whole mainplane component at Farmingdale

Cavorting above the clouds, two brand-new P-47N-5-REs shimmer in strong sunlight. The small antenna for the AN/APS-13 tail warning radar, introduced on this P-47N block, can be clearly seen on the tail fins of each aircraft. Twin aerials serve the AN/ARA-8 navigation, range receiver and homing radios for long-range ferry flights to Pacific bases. These sets were usually removed when aircraft reached operational units.

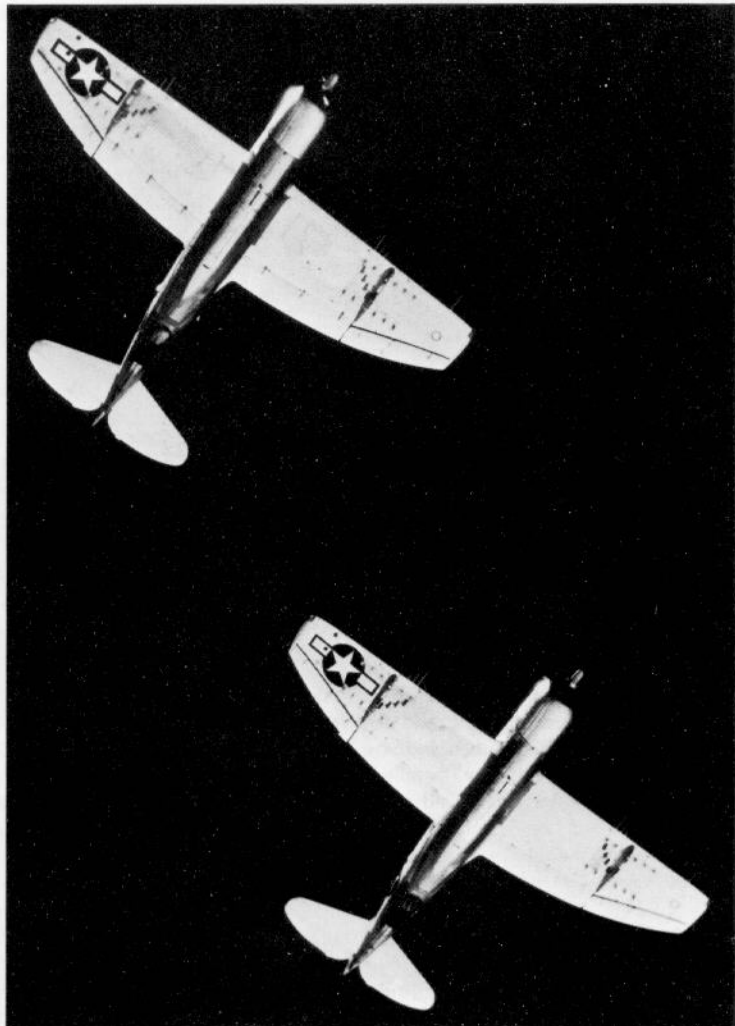
(Photos: Republic)



whereas wing production for P-47Ds had been sub-contracted. A new wing shop was created and this, inevitably, involved a slow-output-per-man-hour problem until production was running smoothly. To begin with, to turn out the first 50 P-47N wings (less accessories) absorbed 8,600 man-hours per set; while the average inclusive total man-hours required for each of this first 50 P-47N-1-REs completed was 25,439. This contrasts significantly with the rates six months later, when production was in full swing. Manufacture of wing-sets was then taking 1,900 man-hours—a reduction of 78 per cent, and, equally effectively, the time requirement for a complete aircraft had been cut to 7,236 man-hours.

The P-47N-1-RE incorporated a number of refinements in the light of trials with the prototype. Because of the earlier troublesome experience with the Unilever Power Control System, this unit was not installed. The wing tanks were rated as 168 US gals capacity but were shaped so that all fuel could be withdrawn. Apart from the new Long-Range Wing and "C" engine, the P-47N-1-RE differed from the last P-47D-30-RE in the following respects. A General Electric CH-5 turbosupercharger provided greater carburettor air pressure with only a small increase in displacement and weight. An electrical regulator for the "turbo" provided more sensitive and positive control in maintaining constant carburettor air pressure at varying altitudes. It was actuated by a sensing tube in the exhaust stacks. A manifold-pressure switch automatically introduced water-injection if the boost control was advanced to a point where detonation would occur without water, and thus guarding against abuse of the engine. Automatic heat controls—thermal sensitive units operating electric motors and hydraulic systems—took care of engine cowl flaps and inter-cooler radiator doors. Cockpit heating was also automatically controlled.

P-47N-5-RE: When the first 550 P-47N-1-REs had left the Farmingdale lines, several changes were approved and incorporated on the next 550 airframes, which had N-5-RE block numbers. Most of the changes involved combat equipment. Five zero-length, rocket-launchers to carry a missile each were installed under each wing. Provision was made for the quick removal of wing tank racks to cater for short-duration, tactical missions. A tail warning radar (AN/APS-13), homing radio (SCR-522) and minor changes to the VHF set were other items involved. A vacuum tapping was fitted in the cockpit for a pilot wearing a Berger "G-Suit" and the rudder pedals were revised with better adjustment to suit individual measurements. A General Electric G-1 auto-pilot unit permitted "hands-off" flying to counter pilot-fatigue on long-distance missions. A final provision was a catapult attachment with a view to launching P-47Ns from aircraft-carriers to facilitate speedy delivery to forward bases on Pacific islands. During the N-5-RE block run, the Pratt & Whitney



R-2800-73 was installed in some aircraft on the production line. This engine was practically identical to the R-2800-57 model but had a General Electric ignition system in place of the Scintilla type.

Two P-47N-5-REs show off the planform of the Long-Range Wing.
(Photo: Republic)

P-47N-10-RE: The designation P-47N-10-RE was not used as planned changes under this block number were superseded by others.

P-47N-15-RE: Thus 200 P-47N-15-REs followed the last P-47N-5-RE on the production line in the

Outwardly the P-47N-20-RE was identical to aircraft in the previous production block. This one has 300 US gallon drop-tanks on the wing bomb racks, doubling the fuel load for long range flights.
(Photo: Roger F. Besecker)





spring of 1945. Aircraft in the new 'N-15-RE block had a more reliable and neater bomb rack—the S-1—in preference to the earlier B-10 rack, an improved gyroscopic gunsight, and arm rests on the pilot's seat. The overspeed warning light and tachometer were no longer installed with the instrumentation. Additionally, although provision was still made for the General Electric G-1 autopilot, it was not included because of shortage of supplies from the manufacturers.

P-47N-20-RE: The auto-pilot was also missing from the next block, namely 200 P-47N-20-REs, which featured a change of radio, an emergency fuel system—in case normal pumps failed—and a different make of manifold-pressure switch for the automatic injection of water. Also there was provision for individual pressurizing of the drop tanks, which permitted the combat option of mixed loads of bombs and fuel tanks.

Both R-2800-73 and -77 model engines were installed on late production P-47Ns, the main difference being the magneto, the Scintilla type used on the -57 having been re-introduced on the -77.

P-47N-15-RA: From the outset of the USAAF's acceptance of the P-47N, plans were laid for all Thunderbolt production lines to embrace this model eventually. However, the Evansville plant in Indiana continued manufacturing P-47Ds until the spring of 1945 and did not begin to manufacture P-47N models until July, when the first P-47N-15-RAs were assembled. This model was complementary to the P-47N-20-RE, with the exception of a revised cockpit floor with smooth rudder pedal track which was introduced on the 77th aircraft of this block. By this time hostilities had ceased and drastic cuts in aircraft orders were forthcoming. Production at Evansville was tailed-off during September 1945

and only 149 examples of the P-47N were completed by that plant.

P-47N-25-RE: The last Thunderbolt block from Farmingdale was the P-47N-25-RE. This model had the revised cockpit flooring of the late P-47N-15-RAs and several other changes. These involved a redesigned tailwheel linkage, reinforced aileron and flaps—to withstand rocket blast at launching—auxiliary cockpit ventilation, and Automatic Engine Controls (AEC). The normal P-47 control quadrant—situated on the left side of the cockpit—consisted of four levers for operating boost, throttle, propeller pitch, and mixture control. There had been several attempts at providing sequential operation of these long-range, bomber-escort controls to relieve the pilot of the complex task of juggling with the individual levers. Faulty manipulation could, in extreme circumstances, lead to a "detonated" engine. The Unilever Power Control system as installed on the XP-47N had proved disappointing and was discontinued. AEC was not such an ambitious device, coupling only the throttle and turbosupercharger regulator but in such a way that the carburettor butterflies had to be fully open before the "turbo" was brought into operation. A single lever (Power Lever) now combined the functions of the former boost and throttle levers. With the General Electric G-1 supply position now improved P-47N-25-REs, the autopilot was fitted again. From aircraft AAF serial 44-89304 onwards, the wing tip lights were relocated to give hemispheric visibility.

Production at Farmingdale was terminated in October 1945 with the completion of 167 P-47N-25-REs. The last aircraft was, however, not delivered until the end of the year. A grand total of 15,683 P-47s of all models had been manufactured in four years. The highest total for any American fighter aircraft of World War Two. Spare parts amounted

"The Repulsive Thunderbox" is the nickname applied to the 336th P-47N-1-RE, here seen while being operated by a training unit in 1945. (Photo: Harold G. Martin)

1
P-47N-5-RE, 44-88800
"PE-800" as operated by the 56th Fighter Group at Selfridge Field, Michigan in the winter of 1946-47.

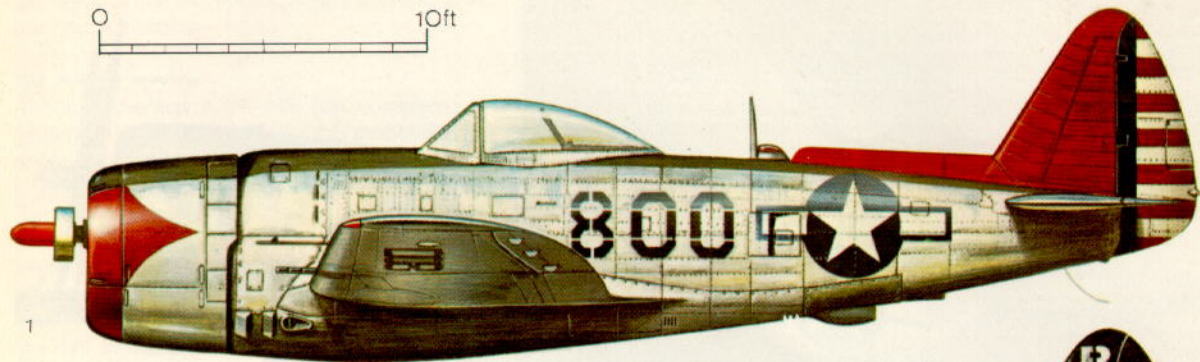
2
P-47N-20-RE, 44-89140,
"FE-140" as operated by the 332nd Fighter Group at Lockbourne Army Air Base, Ohio in 1948.

3
P-47N-20-RE, 44-89238,
used by the USAF's All Weather Flying Center during the late nineteen-forties.

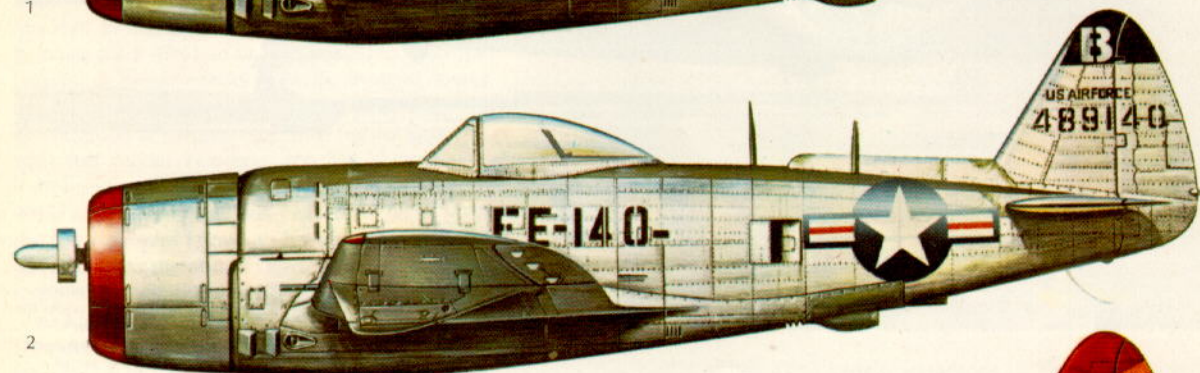
4
P-47N-25-RE, 44-89430, of the 142nd Fighter Squadron, Delaware National Guard based at Wilmington, Delaware in the late nineteen-forties.

5
P-47N-25-RE, 44-89316, of the 118th Fighter Squadron, 103rd Fighter Group, Connecticut National Guard, based at Windsor Locks, Connecticut in the late nineteen-forties.

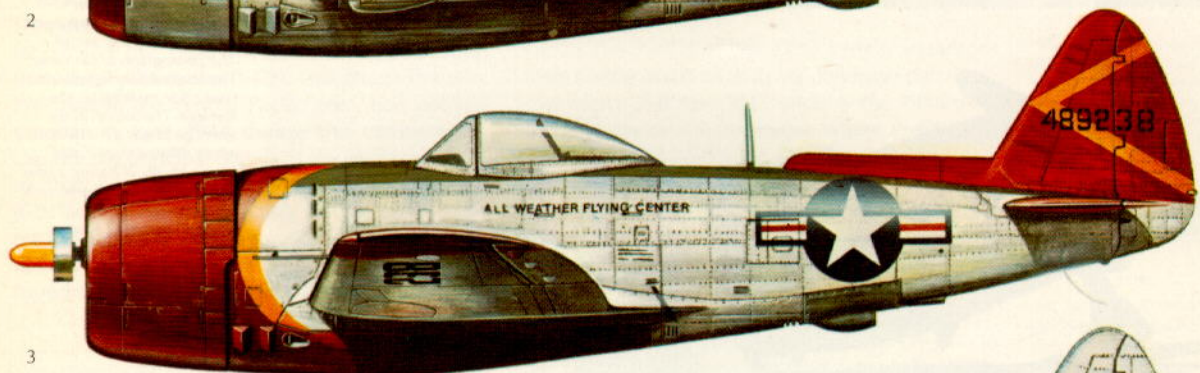
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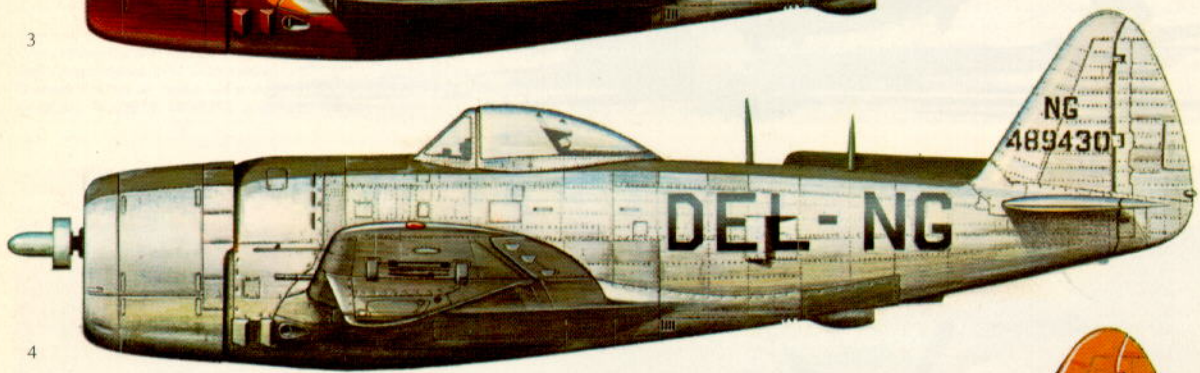
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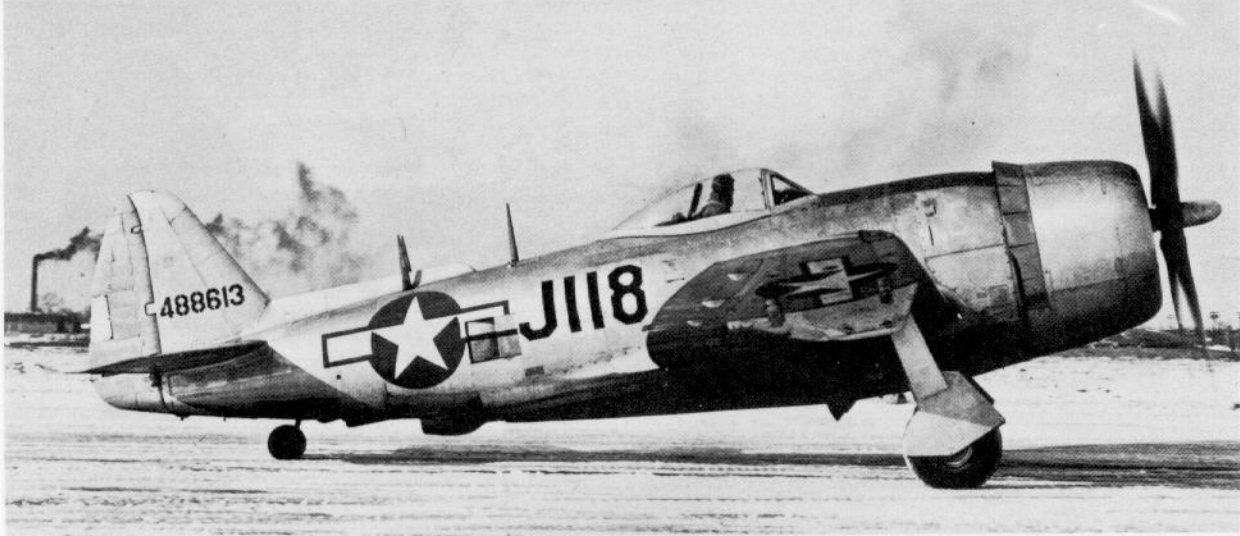
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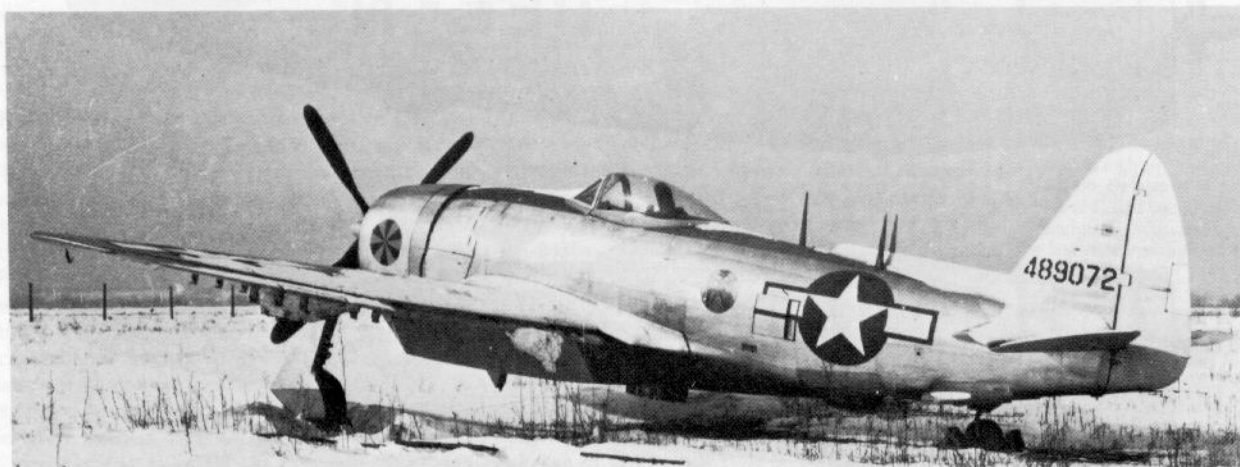
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5



Snow scenes. (Left) P-47N-5-RE, 44-88613, has the retractable landing light, located under the left wing, in the "down" position. Armament has been removed from this aircraft. The photograph of the same Thunderbolt taxiing reveals a base code marking on the fuselage. The aircraft in the lower picture is a P-47N-15-RE which differed from earlier blocks chiefly in having a new type of wing pylon bomb rack, the S-1 model. (Photos: Harold G. Martin)



to approximately another 3,000 P-47 units. Orders for nearly 6,000 N models were cancelled after the end of hostilities.

The P-47 in service

Although the first P-47N-1-RE was completed in September 1944, production of this model did not really get under way until December, with the USAAF's first sizeable acceptances in January 1945. The early examples were issued to the 413th, 414th and 507th Fighter Groups, all of which had been formed in October 1944 for the express purpose of providing an escort-fighter force for Very Heavy Bombers¹ operating on daylight missions in the Pacific war zones.

While the P-47N had been designed to meet the long-range requirements of Pacific theatres, it was planned to re-equip the sole remaining P-47 escort group in Europe—the 56th Fighter Group—with this model. However, the first shipment of P-47N-5-REs did not arrive in England until April 1945, and when hostilities ceased in early May, the few examples known to have been assembled at Speke, near the port of Liverpool, were promptly shipped out again to the USA.²

As a first step in establishing a force of long-range Thunderbolts in the western Pacific, it was planned to convert the experienced 318th Fighter Group from the P-47D to the P-47N. This group, the only P-47 unit in the central Pacific area, had entered combat in June 1944 during the campaign to capture the principal islands of the Marianas chain so that bases could be constructed to enable B-29 Superfortresses to carry out bombing raids on the Japanese home islands some 1,500 miles distant. On completion of the operations in support by ground forces on Saipan, Tinian and



Guam, the P-47Ds of the 318th's three squadrons were chiefly involved in flying defensive patrols.

In March and April 1945, pilots of the 318th were flown by transports to Hawaii, where P-47Ns had arrived by ship and were being assembled. After familiarization flights over Hawaii, the new Thunderbolts were flown by stages across the Pacific for 4,100 miles to the recently captured island of Ie Shima, a few miles off the western coast of Okinawa in the Ryukyu chain, and only 325 miles from the nearest point on the Japanese mainland.

The three groups specially trained on P-47Ns in the United States were soon to follow the 318th. The 413th Group left its North Carolina training field early in April 1945 with the pilots proceeding

"Honey Child" displays the yellow wing bands and all-yellow empennage markings applied to 507th Fighter Group Thunderbolts on Ie Shima. The aircraft is a P-47N-2-RE which is a P-47N-1-RE brought up to N-5-RE standard at a modification centre.

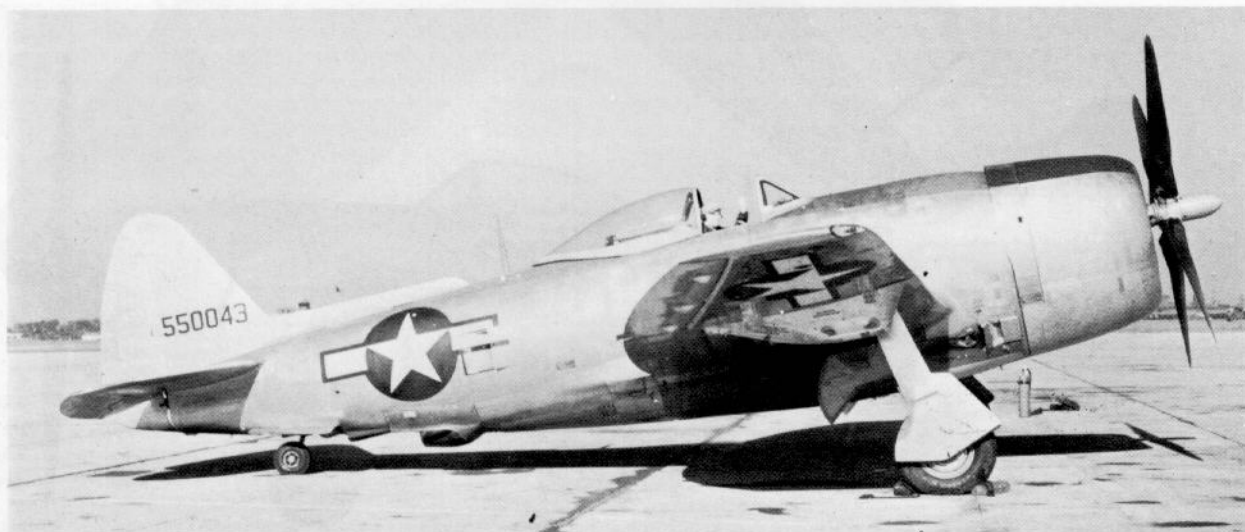
(Photo: via Greg Moreira)

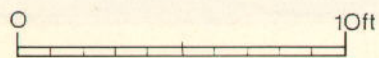
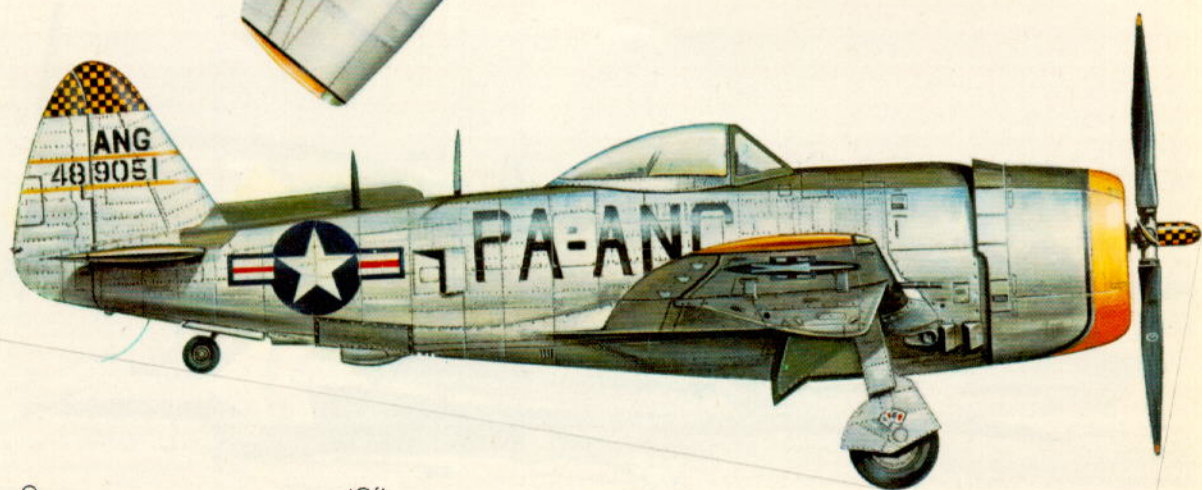
Only 149 P-47Ns were built by the Evansville factory and none of these saw combat in World War Two; this is the 69th from this block of N-20-RAs.

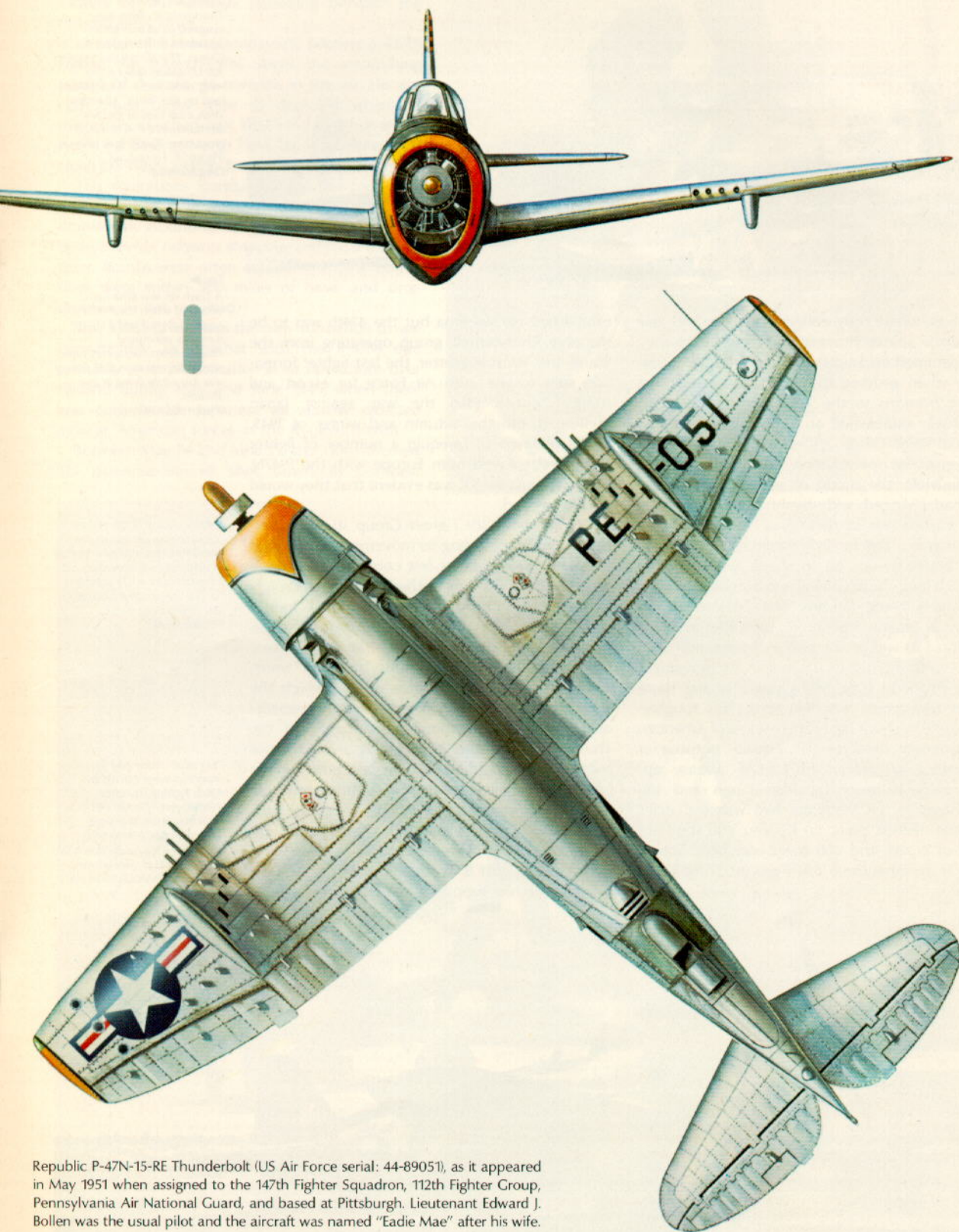
(Photo: David W. Menard)

¹ Very Heavy Bomber category embraced Boeing B-29 Superfortress and Consolidated B-32 Dominator.

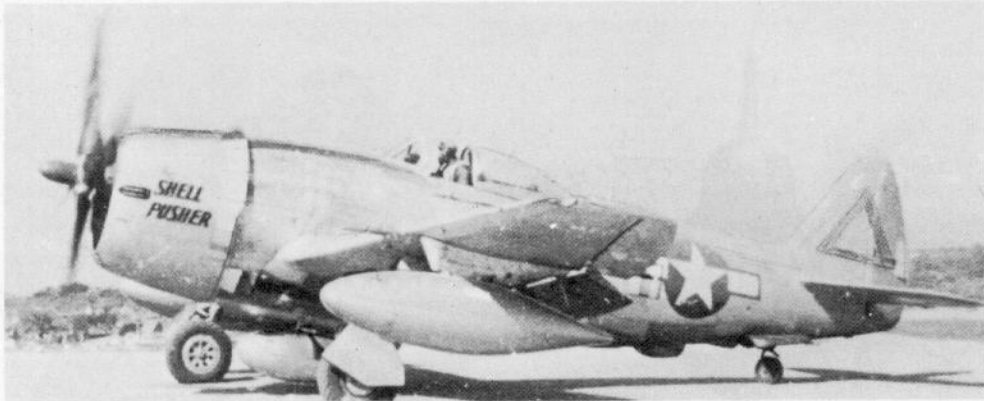
² Known P-47Ns at Speke were AAF serials: 44-88341, 44-88343, 44-88344, 44-88352, 44-88353, and 44-88459.







Republic P-47N-15-RE Thunderbolt (US Air Force serial: 44-89051), as it appeared in May 1951 when assigned to the 147th Fighter Squadron, 112th Fighter Group, Pennsylvania Air National Guard, and based at Pittsburgh. Lieutenant Edward J. Bollen was the usual pilot and the aircraft was named "Eadie Mae" after his wife.



Lieutenant Robert Forrest taxiing his personal Thunderbolt which was assigned to 463rd Fighter Squadron, 507th Fighter Group. The aircraft carries two 300 US gallon tanks on its wing racks and a 75 US gallon tank on the "belly" shackles. With a full load of fuel and ammunition a P-47N would gross over 20,000 lb at take-off. (Photo: R. Forrest via Greg Moreira)

to Hawaii, where they collected P-47Ns and flew them to Ie Shima. However, while on route they were detained on Saipan and received a baptism of fire when ordered to undertake two ground strafing missions to the Truk Islands. The 413th Group was established on Ie Shima by mid-May and the 507th Group arrived a month later and went on its first operation on July 1.

Meanwhile, the mode of employment of the B-29 had changed, with many attacks on Japan being carried out in darkness. This meant that there was less call for long-range escort and the three P-47N groups on Ie Shima were directed mainly to long-range strafing and bombing attacks, the targets being airfields and communication systems in Japanese occupied territories in China and Korea as well as the enemy homeland.

The 414th Fighter Group began its movement to the Pacific in May 1945 along a similar route but its destination was Iwo Jima. This toughly-defended island was taken at great loss of American and Japanese lives for the express purpose of establishing an advanced USAAF airbase approximately half-way between Japan and the B-29 bases in the Marianas. Iwo was 660 miles from the nearest point on Kyushu, the southern island of Japan, and 900 miles east of Ie Shima, home of the other three P-47N groups. Three North American P-51 Mustang groups were already

established on Iwo Jima but the 414th was to be the only Thunderbolt group operating from the island and, for that matter, the last fighter formation sent to the 20th Air Force for escort and support duties. Had the war against Japan continued into the autumn and winter of 1945, it was planned to re-equip a number of fighter groups redeployed from Europe with the P-47N, but by August 1945 it was evident that they would not be needed.

Part of the 414th Fighter Group spent a short period on Guam during its movement to Iwo Jima and while there flew its first combat operation, a ground attack mission to the Truk Islands on July 13. Operations from Iwo began later in the month with missions to attack Japanese ground forces still holding out on neighbouring islands. In August the group undertook missions to Japan which involved double the distance of that which the sister groups in Ie Shima were flying. Specially-assigned B-29 navigation "pathfinders" led the Thunderbolts to and from Japan; even so, not every fighter could rendezvous on time for the return journey. It was indeed a daunting prospect for the pilot who had to find his own way back 600 miles to a small island in a vast ocean. On return from the Group's first operation over Kyushu on August 8, in support of B-29s bombing Yawata, the fuel supplies of several Thunderbolts

Top ►

A crash on Iwo Jima that occurred when the P-47N's engine faltered and a sharp turn was attempted. Thunderbolts had a very rapid rate of deceleration if all power was lost while flying at low altitude.

(Photo: USAAF)

► P-47N-2-REs of 507th Fighter Group being serviced soon after arrival on Ie Shima. Lumps of volcanic rock served as wheel chocks while mechanics had to use upturned boxes in lieu of servicing stands.

(Photo: USAF)

"Sky blue" nose and tail markings were carried by 456th Fighter Squadron, 414th Fighter Group, P-47Ns operating from Iwo Jima. This example, P-47N-5-RE, 44-88391, was usually flown by Lieutenant E. H. McEachron. (Photo: E. H. McEachron via K. Rust)



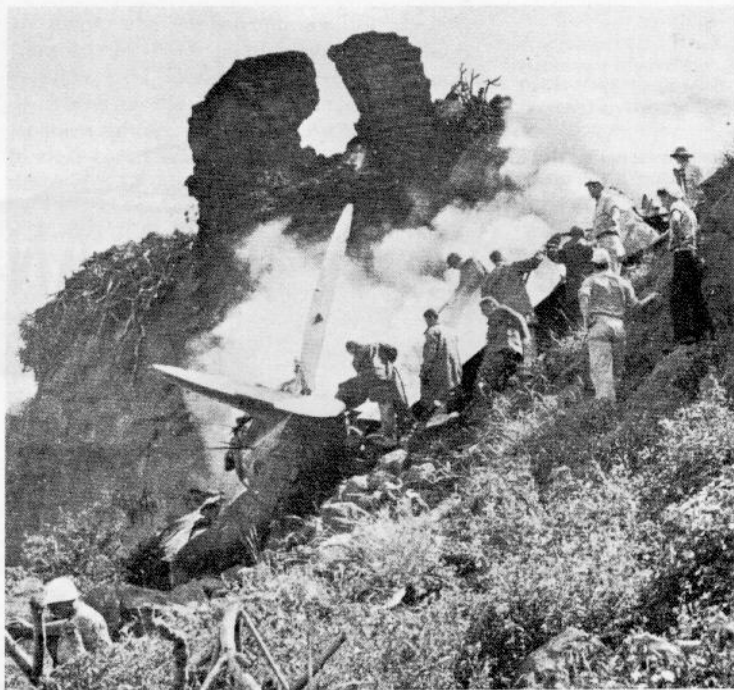
were exhausted and pilots had to bale out in the vicinity of US warships patrolling beneath the mission flight lanes.

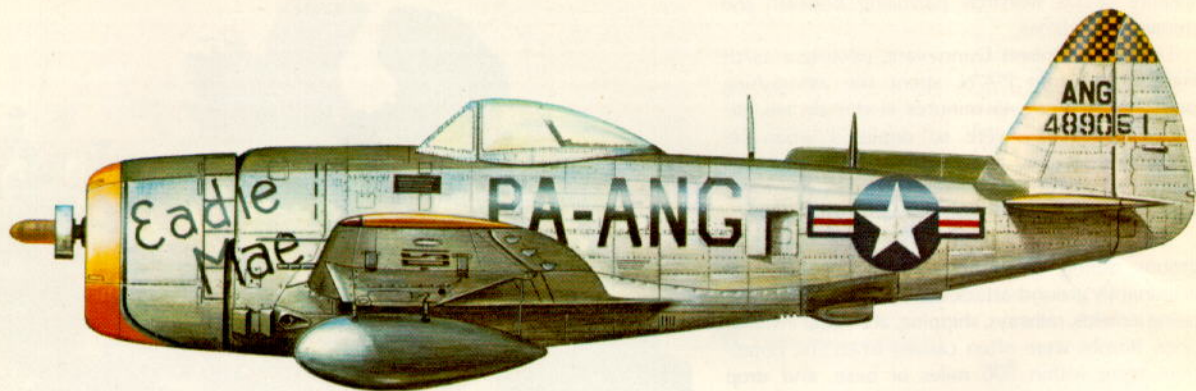
Lieutenant Robert Dunnivant, piloting a 437th Fighter Squadron P-47N, spent the astonishing period of 8 hours 45 minutes in the air. His aircraft's fuel tanks were so depleted when he eventually reached Iwo, that he dared not try to reach his base at North Field, landing instead at a small US Navy airstrip he located on the coast.

The operations conducted by the four P-47 groups during the summer of 1945 were predominantly ground-attack with the main objectives being airfields, railways, shipping, and radar installations. Bombs were often carried when the objectives were within 500 miles of base, and drop tanks were not required.

The 318th Group was the only formation to see considerable air combat with the P-47N, due primarily to its participation in air operations over Kyushu during May and June 1945, when there was considerable Japanese air activity directed against American forces in the Ryukyu Islands.

Between May 24 and June 22, the 318th claimed 113 Japanese aircraft shot down. By contrast,





413 FG

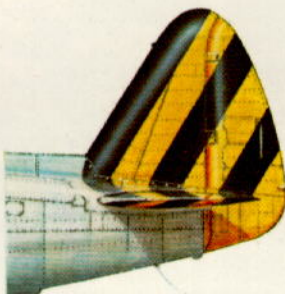
318 FG

414 FG

507 FG



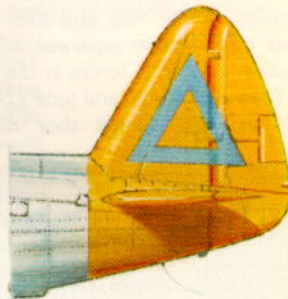
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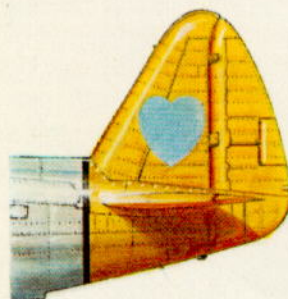
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413 FS



463 FS



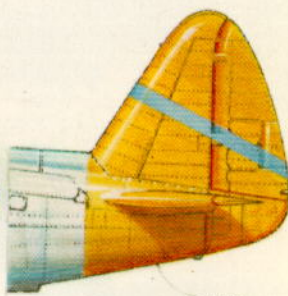
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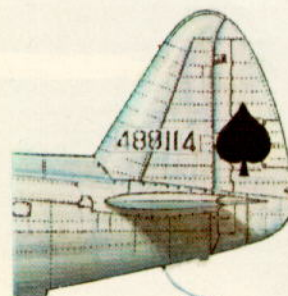
73 FS



437 FS



464 FS



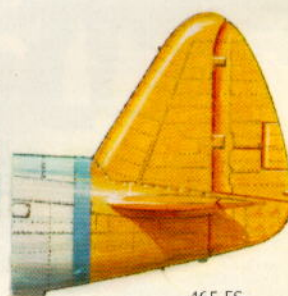
34 FS



333 FS



456 FS



465 FS

during the previous 2½ years of operations in the central Pacific area (Hawaii, Midway, Makin and Saipan) only 48 “destroyed” claims had been allowed and the majority of these while flying Lockheed P-38J Lightnings. The first enemy aircraft shot down by a P-47N was a Japanese reconnaissance aircraft encountered by Lieutenant William Spencer on May 24. On the next day, a formation of 318th Group aircraft was despatched to bomb a target in Kyushu but the mission was abandoned because of bad weather. Turning back, the 318th chanced upon a Japanese air attack on US shipping at Ryukyu Islands anchorages. Jettisoning their bombs, the Thunderbolts joined other USAAF and USN fighters in interceptions.

During approximately four hours in the combat area and for an expenditure of 34,558 rounds of 0.50-in calibre ammunition and 15,550 US gals of fuel, the 318th destroyed no fewer than 34 enemy aircraft without loss. Lieutenant Richard H. Anderson alone accounted for five single-engine fighters in one enemy formation he and his wingman attacked.

On May 28 another 17 “kills” were credited plus four “probables” during offensive patrols over Kyushu and again a pilot, Captain John E. Vogt—formerly with the 56th Group in England—had brought down five. On this occasion three squadron formations (consisting of two flights of four aircraft each) were despatched at intervals during the day, a tactic tried with success on other occasions.

An unusual combat occurred on June 6 when a flight of P-47Ns patrolling at 21,000 feet over Kyushu were intercepted by seven Mitsubishi A6M Zero-Sen (“Zeke”) carrierborne fighters. The leader of the flight, Captain Judge Wolfe, was carrying ground-attack rockets on his aircraft, but instead of jettisoning these he decided to aim them at an enemy aircraft that was making a head-on approach. To the amazement of Captain Wolfe the rockets scored a direct hit, destroying the “Zeke”. Another 13 Japanese aircraft were shot down on June 8 during a Japanese attempt to attack airfields on Ie Shima. Two days later, on

an escort and support mission for US Navy Consolidated PB4Y photographic aircraft (USN version of B-24 Liberator) flying over Kyushu ports, 35 P-47Ns of the 318th met an estimated 130 Japanese fighters. Eight of the P-47s not assigned to close-escort engaged some of the enemy and destroyed 17. Also on June 10, another 318th formation—led by Major John Hussey—obtained four more victories to bring the 318th’s score with the P-47N to 102. Incidentally, Hussey was credited with bringing down the Group’s 100th Japanese aircraft. Only one Thunderbolt had been lost on operations during this successful month. This occurred when a pilot failed to recover from a steep dive initiated to attack a Japanese aircraft flying low over the sea.

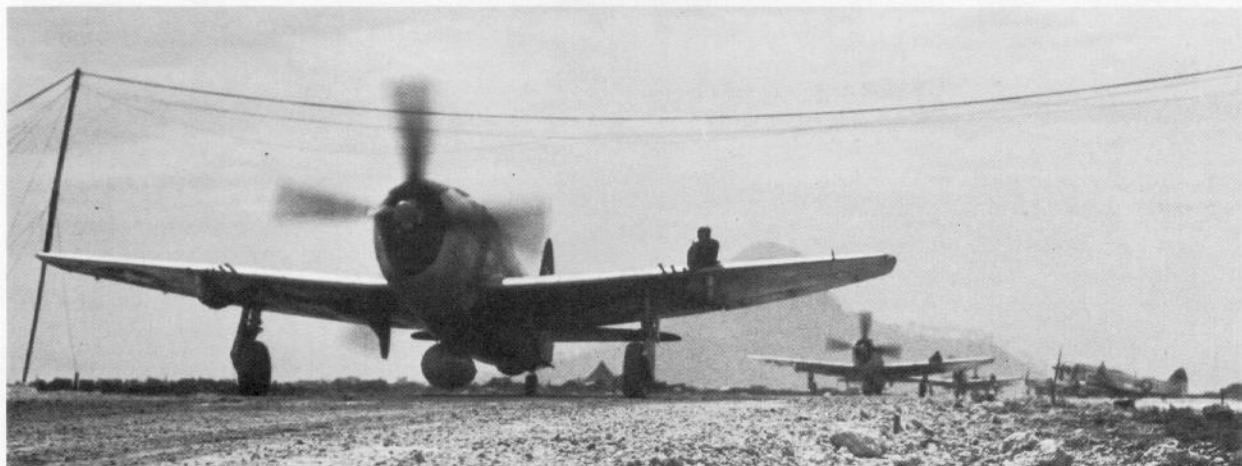
The 413th Group joined the 318th on operations in the middle of June 1945, and the third group, the 507th, made its debut at the beginning of July. Encounters with enemy aircraft were now comparatively few and not until August 8 did the P-47Ns experience stiff opposition again. This was the occasion of their only escort for a major B-29 Superfortress strike at a Japanese target. Some 400 B-29s were despatched to bomb Yawata, a large steel building complex in Kyushu. A force of 151 P-47Ns of the three Ie Shima-based groups gave target support, flying below and ahead of the bombers to meet any interceptors sent up to challenge the raid. The raid provided some of the fiercest air battles to take place over Kyushu and an estimated 60 Japanese fighters of many types were involved. In numerous combats 13 were claimed for the loss of five P-47Ns, four of whose pilots baled out over the sea. Most of the action involved the 507th Group which had an even more successful mission on August 13 while flying a long-range sweep over Korea. In this final action involving P-47Ns, the 507th made claims of 20 enemy fighters for the loss of one of its own aircraft.

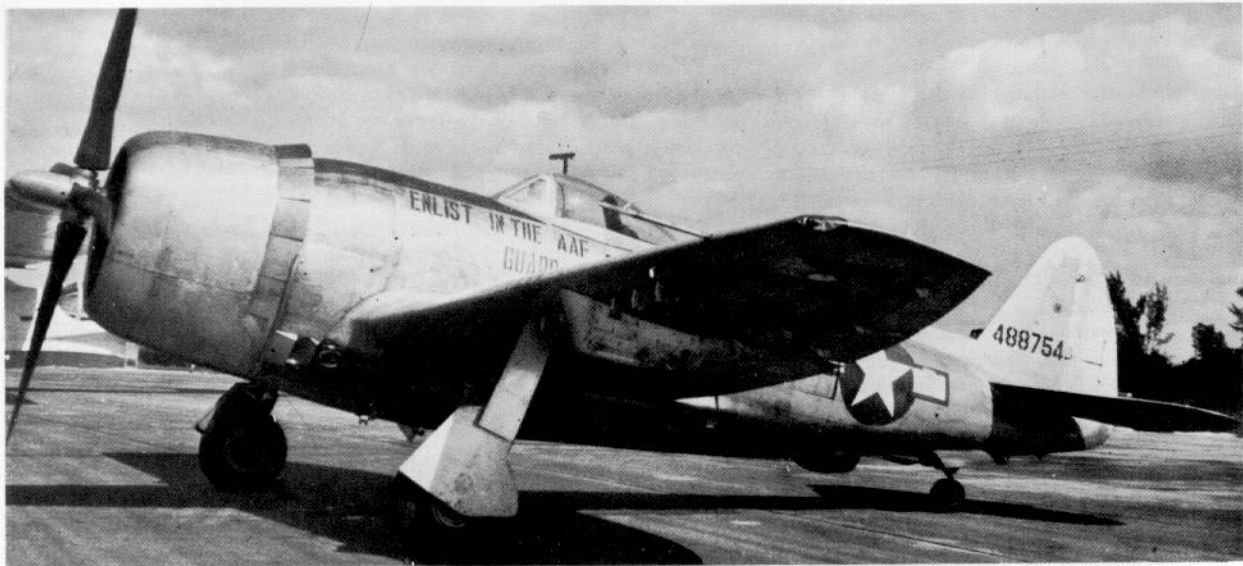
The 414th Group was only in action from Iwo Jima for three weeks before the end of the war and during this period it met little enemy air opposition. The sole claim was a reconnaissance aircraft that

A fifth aspect of Lieutenant E. J. Bollen’s P-47N-15-RE “Eadie Mae” depicted on two earlier colour pages.

Tail Markings used by the twelve P-47N squadrons operating in the western Pacific in the summer of 1945. Squadrons within each Group are presented in vertical columns.

A Crew Chief sits on the left wing of each of these 318th Fighter Group P-47Ns to guide the pilot along the taxiway. The large nose of the Thunderbolt obscured the pilot’s vision, preventing him from seeing directly ahead. (Photo: USAF)





Peace time Thunderbolt.
A P-47N-5-RE exhibited at a post-war air show. The armament has been removed and the fuselage carries an advertisement for the Army Air Forces Reserve and Air National Guard.
(Photo: Roger F. Besecker)

When the 142nd Fighter Squadron, Delaware National Guard—later ANG, Air National Guard—first received P-47Ns these were flown without any US National Insignia.
(Photo: Roger F. Besecker)

At a later date 142nd Fighter Squadron aircraft had a more colourful appearance. The unit's red and white checker-board marking applied to the undercarriage doors was particularly eye-catching.
(Photo: Roger F. Besecker)



two of the 414th's P-47N pilots caught while on patrol.

Doubt always attaches to the validity of claims of aircraft shot down in air fights, because of the speed and confused nature of most combats. Even allowing for some over-statement of the true figure, the record of the P-47N units during their brief period of combat is still remarkable. This success is due primarily to good fighting tactics and well trained pilots; attributes which were rarely true of their Japanese veteran-depleted opponents during the last few months of hostilities.

The main Japanese fighters adversaries were the Imperial Army's Nakajima Ki-44 ("Tojo"), and the Imperial Navy's Mitsubishi A6M5 Zero-Sen ("Zeke"). Each was only half the weight of a P-47N and could boast tactical advantages of superior performance in climb, in acceleration and in manoeuvrability—particularly at altitudes below 20,000 feet where most encounters took place. However, the USAAF had long practised the "diving-pass" technique of attacking Japanese aircraft and avoided "turning-fights" in which the enemy aircraft would almost be sure to gain the advantage. A straight-through,

diving-pass—using the momentum of the dive to "zoom" climb away to a position from which the manoeuvre could be repeated—was the technique that obtained most P-47N "kills". The P-47N had a formidable firepower and a very short burst from the eight 0.50-in. calibre Brownings was usually sufficient to explode the Japanese fighter with its vulnerable fuel system. The American pilots also had the advantage of the then, new, "gyro" computing gunsight which gave remarkable accuracy in deflection shooting, and the Berger "G-Suit" which reduced the "black-out" effects of gravitation pull during violent manoeuvres. By comparison, most Japanese fighter types had to pay the price for their light construction. Whereas the P-47N, like earlier Thunderbolts, could and often did absorb considerable battle damage and still bring their weary pilots back safely to base.

After VJ-Day

Once peace came to the western Pacific, the P-47N remained in the area for another year—until the summer of 1946.

The three groups on Ie Shima moved to Okinawa



Lightning flashes on the tail and undercarriage doors decorated 198th Fighter Squadron P-47Ns of Puerto Rico ANG. The nickname "Wild Hair" is painted on the cowl. This appears to be a continuation of an earlier device adopted by the pilot of a 318th Fighter Group P-47N; see photo on penultimate page of this Profile. (Photo: Harold G. Martin)

Fifteen years later the same Thunderbolt, 44-89425, was reposing at Perrin AFB, Texas, as a static exhibit. Colour scheme was flamboyant but not authentic. (Photo: Norman Taylor)



late in 1945 and the 318th was dispersed and eventually inactivated. The 413th and 507th endured until the summer of 1946 when they, too, were inactivated. The lone Fighter Group on Iwo Jima, the 414th, was moved to Luzon, in the Philippines, in December 1945 but survived inactivation only until the following summer. The 21st Fighter Group, a veteran of the Pacific Theatre of Operations, converted from P-51 Mustangs to P-47Ns on Guam in April 1946, but its existence was short-lived and the formation was inactivated during the following October. Thereafter, P-47N-equipped first-line units of the USAAF (later USAF) were confined to the USA. The elite 56th Group at Selfridge Field, Michigan had a mixed complement of Republic P-47Ns and North American P-51Hs during 1946-47, before going over to Lockheed P-80 Shooting Star jets.

Two regular Air Force groups remained with the Thunderbolt, the 14th at Dow Field, Maine, and the 332nd at Lockbourne, Ohio, the latter being the all-Negro group. One of the 332nd's three squadrons, the 99th, had operated P-47Ns with the 477th Composite Group prior to the 332nd's reactivation in July 1947. However, with a more enlightened racial policy this segregated organization was disbanded in July 1949. The 14th Group also relinquished its Thunderbolts that year, converting to Republic F-84 Thunderjets.

This was not the end of the F-47N¹ in regular USAF fighter squadrons because the advent of the Korean war—and the dearth of modern fighters

¹Post-war changes in the designation of USAF aircraft types included the discontinuation of P-for-Pursuit prefix and F-for-Fighter was substituted.



This was one way of getting Thunderbolts from the dockside in India to the nearest airfield. Note a ground crewman sits on each wingtip. Observant readers will note that these are P-47Ds and not P-47Ns.

(Photo: USAAF)

A 464th Fighter Squadron armorer working on the guns of a P-47N-2-RE shortly after the unit arrived on Ie Shima.

(Photo: USAF)

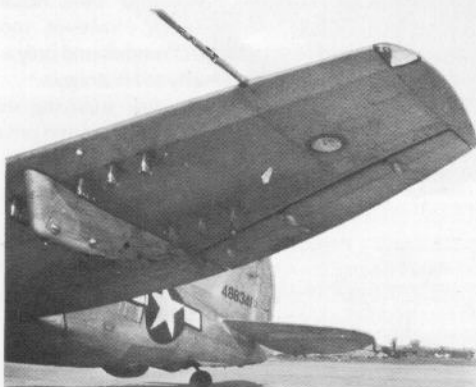
that this brought about until production was expanded—found the F-47N back in service, albeit only temporarily, as a stop-gap. This was in late 1952 when concern about Soviet air attack on the continental United States brought a rejuvenation of Air Defense Command. The 47th Fighter Interceptor Squadron (FIS), at Niagara Falls, NY and the 48th FIS at Grenier Field, New Hampshire, were established in the air defence role and, due to the shortage of modern interceptors, initially assigned F-47Ns. Most of these had been withdrawn by the early spring of 1953.

Although more suitable than the P-51 Mustang for the ground-attack role which was the principal lot of fighter units in the Korean War, the Thunderbolt was never called back to action.

The P-47N—together with late-model P-47Ds—was made available to the Air National Guard (ANG) in 1946 when this organisation began forming its State territorial units again. Squadrons receiving the Thunderbolt were concentrated in the eastern United States, particularly in the north-east. A peak inventory of 500 Thunderbolts was reached in 1950, with about 350 in commission, of which the majority were P-47N models. Principal



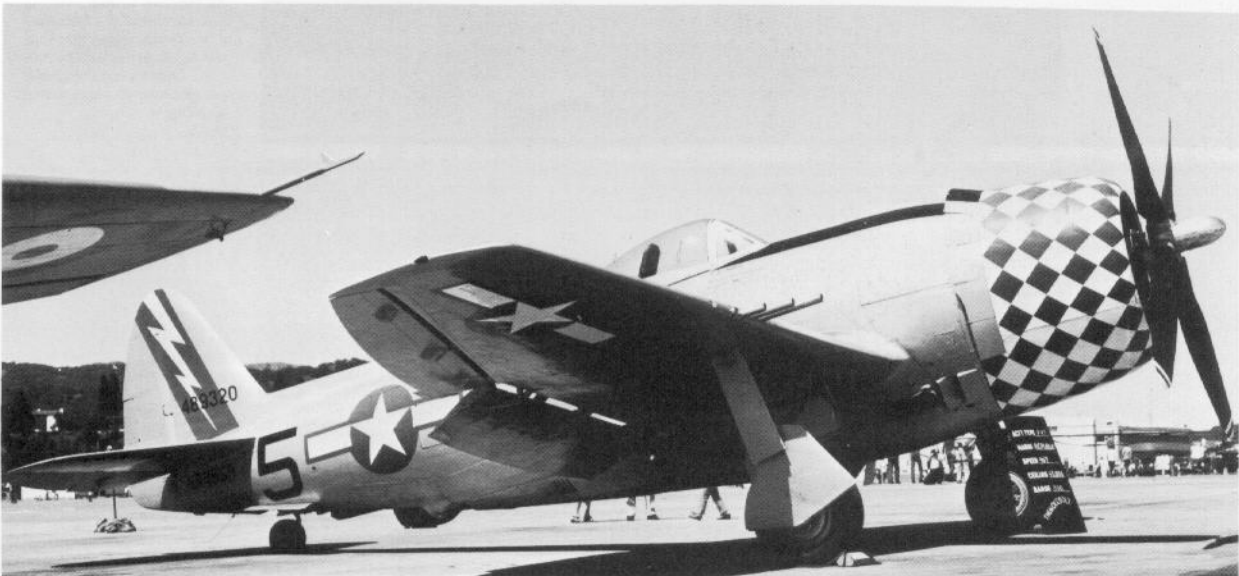
Two of the small number of P-47N-5-REs assembled at Speke, Liverpool, England, but never assigned to operational units in the ETO. Most USAAF aircraft types serving in the United Kingdom were usually on hand at Speke and some examples—Northrop P-61 and Consolidated B-24 may be found in the background of these pictures. (Photo: USAAF)



This is the Pennsylvania ANG P-47N featured in the 5-view colour artwork in this Profile. The aircraft served with the 147th Fighter Squadron for approximately 18 months. Its usual pilot, Lieutenant Edward Bollen, became commander of the 112th Fighter Group—of which the 147th was a component—in the early 1970s. (Photo: David W. Menard)



Colourful P-47N-25-RE visiting Hamilton AFB, California, in 1973. Restored to flying condition by Puerto Rico ANG, the aircraft was painted up in a colour scheme attributed to the World War Two 345th Fighter Group. Note the obligatory US civil registration N345GP under tailplane. (Photo: Harry Walker via R. L. Ward)





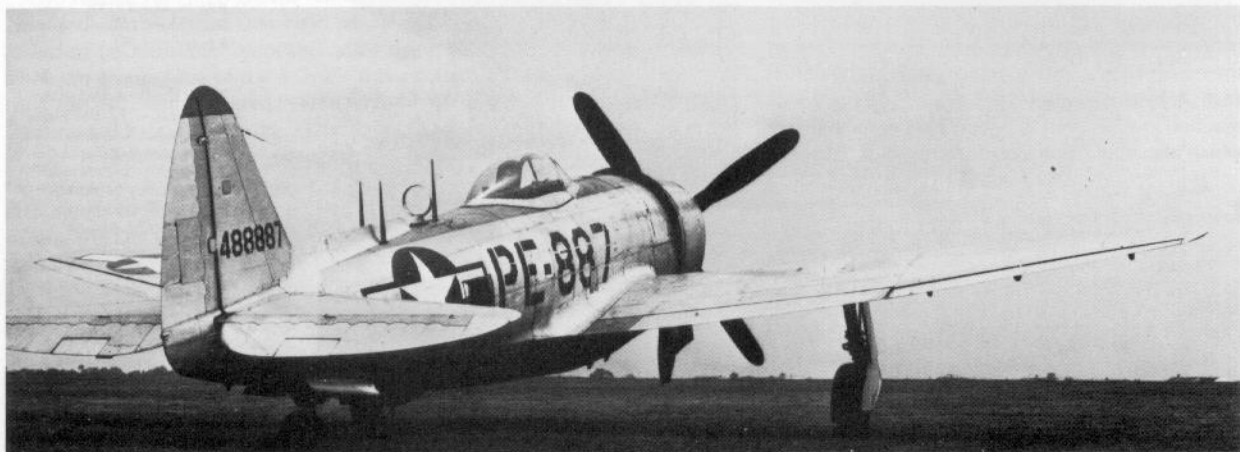
formations operating the P-47N were the 102nd (Massachusetts ANG) 103rd (Connecticut ANG), 108th (New Jersey ANG) and 112th (Pennsylvania ANG) and 113th (District of Columbia ANG) Fighter Groups. The Thunderbolt was rapidly phased out of service in 1952 when the USAF turned over some of its older jet fighters. The last P-47Ns were withdrawn from ANG squadrons in the following year.

Surplus USAF Thunderbolts were purchased by a number of countries during the decade following World War Two, notably in Central and South America. However, most of these aircraft were P-47D models and only a few P-47Ns were exported, chiefly to Nicaragua.

The few surviving examples of the P-47N are held by national and private historical organizations in the USA.

Yellow cowling marking distinguishes P-47N-5-RE of the 413th Fighter Group's 21st Fighter Squadron on Ie Shima, summer 1945. Ground crew man gives good idea of the size of the propeller used on the Thunderbolt.
(Photo: via Greg Moreira)

Extensive directional locating radio equipment is sported by this P-47N-15-RE believed to have been operated by 14th Fighter Group in the immediate post-war years.
(Photo: H. G. Martin)



Another P-47N of Delaware Air National Guard, photographed at a later date when National Insignia were displayed. In contrast to most ANG units this squadron did not decorate its Thunderbolts with bright colours.
(Photo: Roger F. Besecker)



When the 56th Fighter Group was re-activated at Selridge Field, Michigan, in May 1946, its squadrons were given a mixed bunch of Thunderbolts and Mustangs. This 62nd Fighter Squadron P-47N-5-RE carries the aircraft type identification letters PE plus the "last three" of the serial as a Buzz Code, an official marking introduced to discourage low flying.
(Photo: Roger F. Besecker)

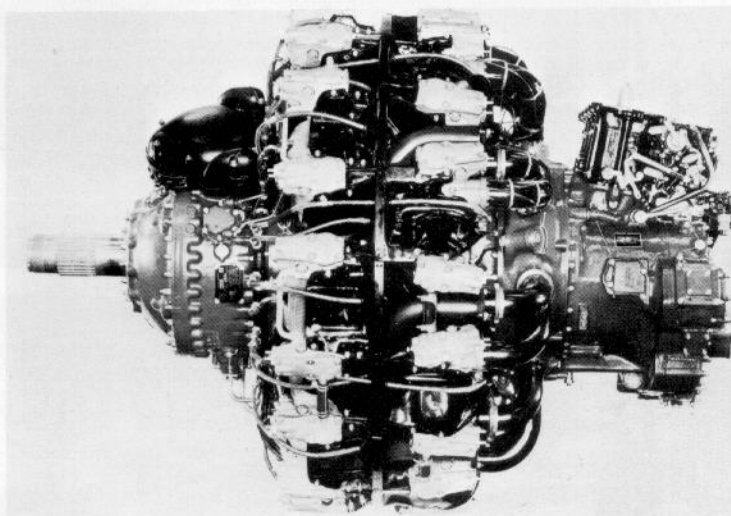
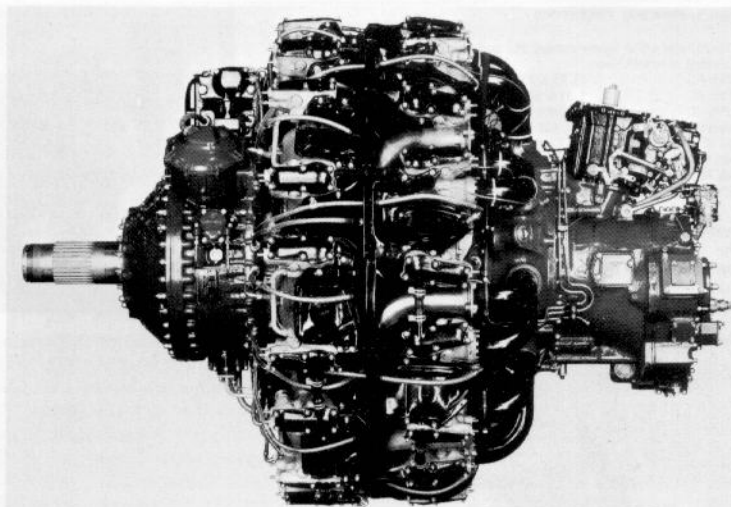
Table 1: SPECIFICATION P-47N-RE

Powerplant	Pratt & Whitney R-2800-57, -73 or 77 18-cylinder, 2-row, air-cooled radial
Propeller	Curtiss Electric model C6425-840 396 13-ft diameter, 4-blade metal, constant-speed type
Power ratings	2,100 hp (take-off); 2,100 hp at 30,000 ft (normal max.); 2,800 hp at 32,000 ft (water-injection, 72 in.Hg boost); 1,700 hp at 30,000 ft (normal cruise)
Speeds	467 mph at 32,000 ft, 448 mph at 25,000 ft and 397 mph at 10,000 ft (max. at altitude); 112 mph (stall with full internal fuel load); 98 mph (normal landing)
Fuel per hour consumption	92 US gals (77 Imp gals) at 2,250 rpm and 1,140 hp (cruise max.); 300 US gals (250 Imp gals) at 2,800 rpm and 2,800 hp (max. with water-injection, 72 in.Hg boost)
Climb rates (at 14,800 lb)	133 minutes to 25,000 feet; 13.5 min/2600 m 2,070 ft per min at 5,000 ft; 6.31 m/min 1.5 km 2,000 ft per min at 18,000 ft; 6.10 m/min 1.5 km 1,800 ft per min at 26,000 ft 5.49 m/min 1.3 km
Service ceiling	43,000 ft 13,100
Take-off run	3,800 ft at 16,300 lb 1160 m
Landing run	3,400 ft at 16,300 lb 1040 m
Specimen ranges (at 25,000 ft)	2,000 miles at 280 mph at 21,200 lb (with 1,156 US gals) 300 miles at 312 mph at 18,700 lb (with 556 US gals) 275 miles at 372 mph at 14,600 lb (with 205 US gals)
Dimensions	Span: 42 ft 6 13/16 in; length: 36 ft 4 in; height: 14 ft 8 in; wheel track: 18 ft 5 13/16 in; wing area: 332.2 sq ft; flap area: 46 sq ft 12.925 m 11.074 m 4.490 m 5.634 m 30.86 m
Weights	10,998 lb (empty); 13,823 lb (normal loaded); and 20,700 lb (max. loaded)
Armament	Machine-guns: 8 x 0.50-in Brownings (with 267 rounds per gun, total 2,136 rounds); or 6 x 0.50-in Brownings (267 rpg, total 1,602 rounds) Air-to-ground rocket projectiles: 10 x 5-in HVAR-type Bombs (max. load) 2 x 1,000-lb and 1 x 500-lb
Drop tanks	Wing pylons: 2 x 330 US gals; or 2 x 165 US gals normal Belly shackle: 1 x 75 US gals normal

e. 1616 kg/m³ m. 2.92 kg/m³
m. 303 kg/m³ e. 2.37 kg/m³

Table 2: SERIAL NUMBERS

Model	Number Built	Constructor's Number	USAAF Serial
XP-47N	1	4964	42-27387
P-47N-1-RE	550	1-550	44-87784 to 44-88333
P-47N-5-RE	550	551-1100	44-88334 to 44-88883
P-47N-15-RE	200	1101-1300	44-88884 to 44-89083
P-47N-20-RE	200	1301-1500	44-89084 to 44-89283
P-47N-25-RE	167	1501-1667	44-89284 to 44-89450
P-47N-20-RA	149	—	45-49975 to 45-50123



Left side views of the Pratt & Whitney R-2800-57 and R-2800-73 "Double Wasp" engines that powered P-47Ns. The only basic difference between these two models was that the -57 had a Scintilla ignition set while the -73 used General Electric equipment. The differing types of magnetos installed on these engines can be seen on the front gear housing. (Photos: Pratt & Whitney)



A 165 US gallon drop tank on the 318th Fighter Group's "Wild Hair" being topped up. (Photo: USAAF)

Table 3: PRINCIPAL OPERATORS

USAAF, and USAF fighter groups (FG) and fighter squadrons (FS) and period activated in month/year:

318th FG	19, 73 & 333 FS	4/45-12/45
413th FG	1, 21 & 34 FS	5/45-10/46
507th FG	463, 464 & 465 FS	5/45-5/46
414th FG	413, 437 & 456 FS	6/45-9/46
21st FG	46, 72, & 531 FS	4/46-10/46
56th FG	61, 62 & 63 FS	5/46-47
14th FG	37, 48 & 49 FS	11/46-10/49
332nd FG	99, 100 & 301 FS	3/47-7/49

Acknowledgements

The author wishes to thank the following persons for providing material used in this Profile: Roger Besecker, N. E. Borden, Robert Dunnivant, Harvey Lippincott, Harold G. Martin, Dave Menard, Greg Moreira, Kenn Rust and Richard L. Ward.



This P-47N-25-RE (serial 44-89348) has served as a "gate guardian" at Lackland AFB, Texas, and is one of seven known P-47Ns that survive in the USA. (Photo: D. Menard)

At certain angles, except for more pointed wing shape, latter model, "bubble" canopy P-47Ds are virtually indistinguishable from P-47Ns. This is a Pennsylvania ANG P-47D-30-RA (44-33645) with Buzz Code PE-645 and wing armament reduced by half to 4 x 0.50-in guns. No fewer than 6,289 P-47Ds were built of which 2,600 were D-30-RE/RAs and all but 800 parent-plant examples (RE) were manufactured at Evansville (RA).

(Photo: Charles W. Cain collection)



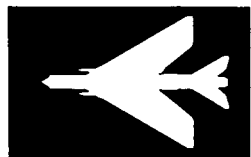
Another National Guard Thunderbolt with motor cowlings cheatlines, this time a Massachusetts ANG P-47N-20-RE (44-89129) which, in the late 1940s, was assigned to the 101st Fighter Squadron, 102nd Fighter Group. Unit badge appears in front of cockpit.

(Photo: D. Menard)

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A P-47N-20-RE operated by the Negro-manned 332nd Fighter Group in the late 1940s. (Photo: D. Menard)





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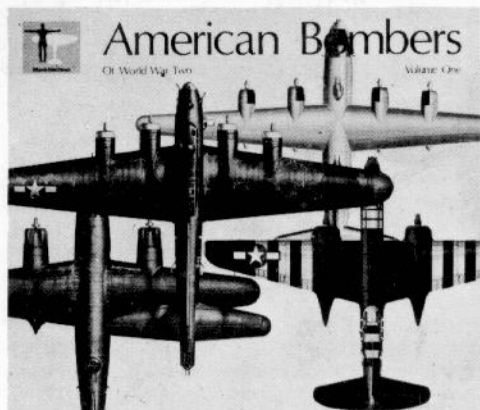
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- 214 Grumman TBF/TBM Avenger
- 215 Arado Ar 234 Blitz
- 216 Petlyakov Pe-2 variants
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- 218 Bristol Blenheim Mk IV (& RCAF Bolingbroke)
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- 229 Vickers-Armstrongs Warwick Mk I-VI
- 230 Dassault Mirage III to 5 (& Milan)
- 231 Lublin R-XIII variants
- 232 Martin Maryland & Baltimore (RAF)
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- 234 Heinkel He 177 Greif
- 235 Avro Lancaster Mk II
- ~~236~~ Mitsubishi A6M5/8 'Zero-Sen' ('Zeke 52')
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- 238 Mikoyan MiG-21 ('Fishbed/Mongol') variants
- 239 LTV (Vought) A-7A/E Corsair II
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- 248 de Havilland D.H.9A (RAF: 1918-30)
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- 250 BAC Aerospatiale Concorde
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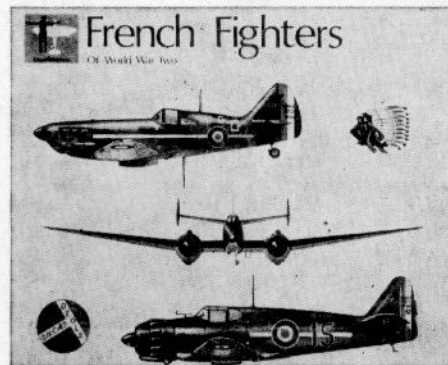
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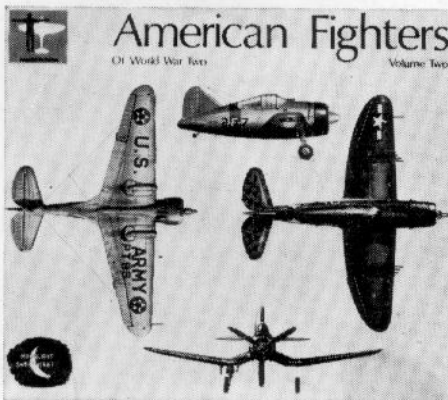
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