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USAAF BOMBER UNITS PACIFIC 1941-45

BY ERIC MUNDAY



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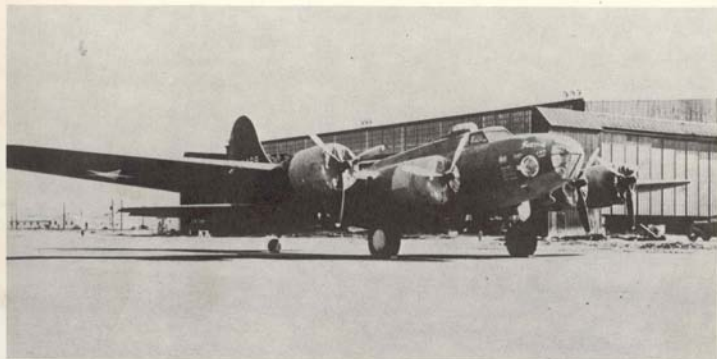
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B-17E Fortress 41-2489 'Suzy-Q' was flown out to Java to join the 19th BG in February 1942 and assigned to the 93rd Sqn. as one of the replacements for the B-17Ds lost in the Philippines. An early E model, it was fitted with a remotely controlled ventral turret, which proved unsuitable for combat and was removed (note the metal plate on the fuselage underside). The aircraft was named after pilot Felix Hardison's wife and this photograph was taken after the machine returned to the US late in 1942.

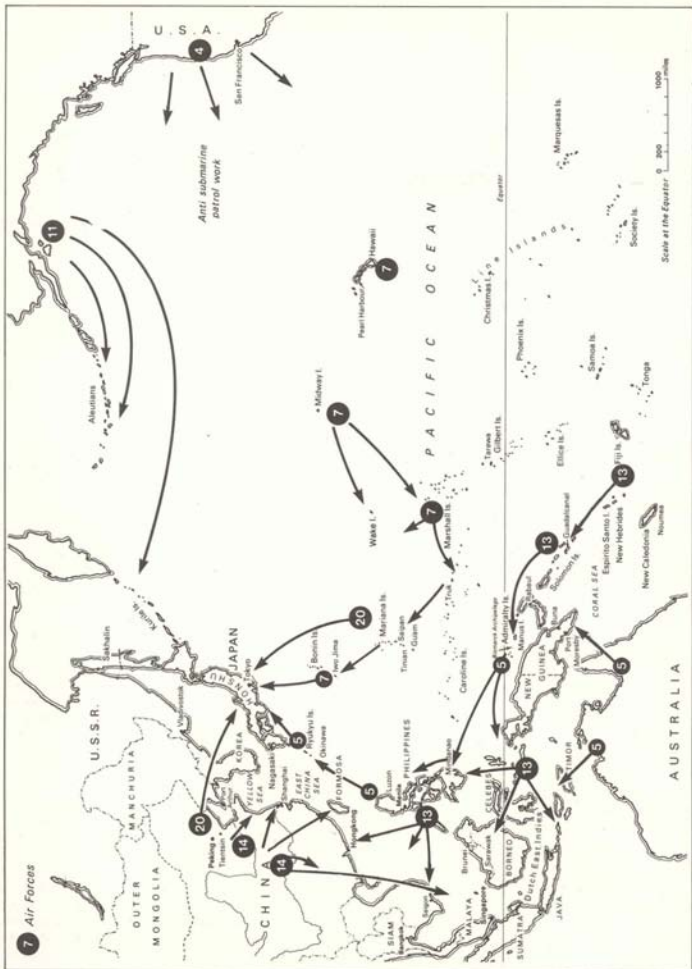
Opening Rounds

At the outbreak of the Pacific war on 7 December 1941, the United States Army Air Force had four organizations that would be directly involved with the war against the Japanese; two, the Far East Air Force, based in the Philippine Islands, and the Hawaiian Air Force, were committed to the fighting from the first day. Much of the strength of the FEAF was lost when Japanese aircraft attacked airfields in the Philippines, and a large number of aircraft were destroyed when Hawaiian airfields were attacked by Japanese carrier aircraft during the Pearl Harbor operation. Small units in Alaska and the Aleutian Islands were soon formed into an Alaskan Air Force, while the 4th Air Force was on the West Coast of the USA. All four of these organizations had bomber aircraft assigned to them. The activities of the Alaskan and West Coast USA-based air forces were, at this stage, limited to patrolwork, seeking Japanese submarines, and guarding against a possible Japanese naval assault anywhere in their respective areas.

Because of the heavy losses suffered by the Philippines-based 19th Group, FEAF's original bomber unit, only small-scale operations could be mounted against the Japanese—mostly attacks by small numbers of surviving B-17 Fortresses against Japanese invasion shipping off the coast of Luzon. Such operations were the result of information received from reconnaissance or other reports,

or as a part of search missions, where a suitable target would be seen and attacked. The Fortresses, mostly B-17C and D models, suffered several losses from Japanese fighters, both carrier-borne and land based. As soon as Japanese airfields had been established in the northern Philippines, no US airfield was safe from attack. This situation led, in late December 1941, to the withdrawal of the surviving Fortresses of the 19th BG to Australia. For the moment, the US airfields in the Philippines were used as staging fields for operations against the Japanese. Rarely were more than ten Fortresses in serviceable condition and their operations against shipping from comparatively high altitudes did not produce significant results. A quick manoeuvre by the target while the attacking aircraft were on the bomb run threw the sights off, and few hits were obtained.

Eventually the Japanese obtained a foothold in Java and the 19th Group continued its desperate struggle against the onrushing and seemingly invincible invader. Even the arrival of the 7th and 43rd Groups, both equipped with B-17s and a smaller number of the export version of the Liberator, the LB-30, did not make a great deal of difference. Losses, unserviceable aircraft, scattered bases, the vast distances involved and shortage of skilled ground personnel, all played their part in reducing the number of aircraft available for operations. Eventually the Japanese



The general operational areas of the six main US air forces opposing Japan



occupied Java and Borneo and invaded New Guinea. A small number of aircraft of the 7th Group were stranded in India, where they had been on the flight out to Australia. The 7th had mainly B-17E Fortresses with power-operated turrets and a tail gun position, which were a great improvement on the earlier B-17C and D models.

On the break-up of the ABCD command—the American, British, Chinese, Dutch alliance, the remnants of the 7th BG were transferred to India. The 19th and 43rd groups went to Australia, to rebuild and recoup.

The Japanese meanwhile had, by April 1942, consolidated their gains, and landed forces at successive points along the northern coast of New Guinea.

The Allies possessed an airfield at Port Moresby on the southern New Guinea coast, and bombers from bases in Australia staged through Port Moresby to attack targets in New Guinea, Rabaul in New Britain, and naval targets in these areas.

In the Hawaiian Islands, two bomber groups, the 5th and 11th, each had a mixture of B-17s and B-18A Bolos. A number of each of these types were destroyed at Hickam Field during the attacks on 7 December and the survivors were used on ocean reconnaissance work, searching for Japanese shipping and submarines. After Pearl Harbor there was a real fear that the Japanese would follow up with another carrier-borne strike or, worse still, an invasion fleet. Twelve Fortresses had arrived over Pearl Harbor at the height of the Japanese attack, staging through Hawaii *en route* from the USA to the Philippines. They were attacked whilst attempting to land; most got down safely, some landing away from Hickam Field, but at least one was destroyed on the ground by strafing fighters.

For the first few confused months of the Pacific war, aircraft were sent into battle in piecemeal fashion, often with the sketchiest of crew briefings, and results hardly justified even the modest effort involved. The situation improved in February 1942, when some reorganization

Showing the beefed-up nose armament typical of early Mitchells in the CBI and Pacific theatres, this B-25C-NA, 42-32263, was part of the 490th BS, 341st BG. Flying with the 10th AF, the 341st became highly adept at knocking out bridges and came to use the nickname 'Burma Bridge Busters'. (Via R. L. Ward)

and redesignation of the air forces operating against the Japanese was carried out: the Far East Air Forces became the 5th Air Force and the Hawaiian Air Force was designated the 7th Air Force. The tiny Alaskan Air Force became the 11th Air Force and the embryonic air force in India became the 10th Air Force, when that headquarters moved to India to take command in March 1942.

In April 1942, a US naval task force moved into Japanese home waters, and on the 18th of the month launched sixteen B-25B Mitchell bombers, under the command of Lieutenant-Colonel Doolittle, against Japan. Most of the bombers attacked targets in Tokyo itself. All aircraft were lost—they were intended to fly on to bases in China, but an earlier-than-planned take-off put these bases just beyond their range. One Mitchell landed in Russia, where it—and its crew—was interned and two of the crews were captured by the Japanese, but the rest, including several seriously injured men, were assisted to safety by Chinese guerrillas.

This raid did not cause great damage in Tokyo, but profoundly affected Japanese planning. Their strategy consisted of setting up a defensive screen of islands deep in the Pacific, from whence patrolling aircraft or ships could give warning of any US naval forces approaching the home islands. One of these patrolling ships had caused the early take-off of Doolittle's aircraft.

In accordance with this 'defensive screen' policy, the Japanese determined in June 1942 to seize Midway Island. The US, forewarned by the interception of Japanese radio messages, for which the codes had been broken, inflicted a



A 380th Group B-24D Liberator 'She Asta', with an impressive row of mission markers. It appears that an earlier insignia on the nose of the aircraft has been painted out.

severe defeat on the Imperial Navy, which lost four aircraft carriers, several other ships and many aircraft and crews.

USAAF operations during the Battle of Midway consisted of attacks on the Japanese fleet by Fortresses, and torpedo attacks at low level by four B-26 Marauders. Two Marauders were lost and the other two were severely damaged. No torpedo hits were claimed, and the high-level attacks by the Fortresses caused little damage to the Japanese ships. In the days after the battle, searches were made for damaged Japanese vessels.

Among the aircraft rushed out to Hawaii as the Japanese threat developed were four LB-30 Liberators from the 4th AF. General Clarence Tinker, Commanding General of the 7th AF, had a high regard for the Liberator, and he saw an opportunity to use its great range to attack Wake Island, captured by the Japanese in December 1941. Such an attack, beyond the reach of B-17s, would be a demonstration of the capabilities of the Liberator and provide up-to-date information on what the Japanese had done at Wake Island since its capture. The raid was launched from Midway, which even then necessitated a 2,500-mile trip. During the Hawaii to Midway leg, three of the pilots became concerned at the way the fourth LB-30 was being flown. This aircraft was carrying General Tinker, with an ex-fighter pilot, Tinker's aide, at the controls. The three experienced bomber pilots considered the fourth machine was flying too slowly for its heavy load, and was almost stalling as a result. At Midway, these points

were discussed and Tinker's pilot agreed to use higher power settings. The mission to Wake was to be flown on 7 June, and it was hoped to catch crippled Japanese shipping at anchor off the island. In the event, the mission ended in tragedy. General Tinker's aircraft, again flying slowly, munched slowly through the undercast and neither aircraft nor crew was ever seen again. The other three crews did not attack the target and returned to Midway.

The mission to Wake was flown three weeks later, on 26 June 1942. All three LB-30s attacked, dumped their loads on runways and installations, and returned safely to Midway. This raid was typical of early operations in the Pacific, being flown at extreme range with small numbers of aircraft, and suffering a loss due to a non-operational cause.

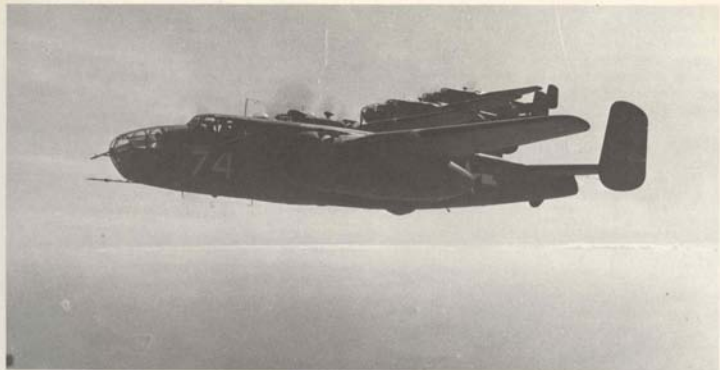
In the northern Pacific area, several islands in the Aleutians were seized by the Japanese as part of the far-flung Midway operation. Among US forces sent to this theatre were B-17s and a few B-26 Marauders, which attacked Japanese shipping and military camps in the area.

Above right

Four Mitchells of the 11th AF over the northern Pacific in 1943. Sea search radar is fitted, as evidenced by the aerials under the nose of 41-30474/74 named 'My Buddy', the quartet being part of the 77th Sqn., 28th BG.

Right

The scene after a one-wheel landing of a 7th AF Liberator on 18 December 1943 on Makin Island in the Gilberts. No. 952 was shot up over Mili in the Marshalls and was scrapped after all usable parts had been stripped to keep other B-24s in the air.



Following their reverse at Midway, Japanese policy was to consolidate their gains all over the Pacific, from the Aleutians to New Guinea. In New Guinea, further landings were made at points on the northern coast. A number of air attacks were also launched against towns such as Darwin and Allied airfields in northern Australia. A further effort was made by the Japanese to cut the supply line from the USA to Australia, by occupying the main islands in the Solomons group.

Combat operations: 5th and 13th Air Forces

For most of the war, the largest air force opposing the Japanese was the 5th, organized from the remnants of the FEAF during 1942. By April 1942 the greatly depleted 10th Group was joined by some aircraft of the 3rd BG—a few A-24s, which were the US Army version of the Navy Dauntless—the B-17E Fortresses of the 43rd Group, and the B-26 Marauders of the 22nd Group. Although on paper this was a sizeable increase in the force, in practice the number of aircraft available at any one time was quite small.

The Japanese had meanwhile established a naval base at Rabaul at the northern tip of New Britain, where the fine natural Simpson Harbour soon became busy with the activity of a large naval base and its attendant facilities, warehouses and shore installations. Two airfields were quickly built, followed later by a further three, on which the Japanese based considerable numbers of fighters and bombers. From Rabaul, Japanese forces could strike south-west at the New Guinea coast and south-east towards the Solomon Islands.

In August 1942 command of the 5th AF was taken over by Gen. George C. Kenney, who replaced Gen. Brett. Brett flew home in *'The Swoose'*, a venerable B-17D of the 10th Group, and the only example of that Fortress model flown by the 10th to return to the USA.

Under Kenney's energetic command, and with more aircraft and units coming to the theatre, attacks were made on targets in Japanese-held territory, and on shipping. One of the earliest strikes sent out by Kenney was to the Rabaul airfields on the eve of the Allied landing on Guadalcanal in the Solomons. Reconnaissance by B-17s had shown that the Japanese were also building an airfield on Guadalcanal, from which they could threaten Allied bases in Fiji and New Caledonia, both locations forming part of the island chain of communications from the USA to Australia. The Allies determined to act first, and occupied the airfield by a landing on 7 August 1942. The landing phase was virtually unopposed, and the airfield was quickly taken. However, the Japanese reacted violently to the US Marines holding the airfield, and for many weeks the issue hung in the

balance. Several naval battles were fought in the waters around the Solomons, and bitter fighting raged around the airfield perimeter. Japanese aircraft from Rabaul attacked US shipping daily after the Guadalcanal landing. However, the eighteen bombers sent over Vanakanau airfield at Rabaul before the Guadalcanal landing had wrecked many Japanese aircraft and burned a fuel dump.

The area for which Kenney was responsible was vast: Darwin and Townsville, the two major bomber bases in Australia, were over 1,000 miles apart. New Caledonia was 1,000 miles from Guadalcanal. Aircraft attacking Rabaul staged up through the Port Moresby airfields on the south coast of New Guinea to make their attacks. Several airfields were built around Port Moresby, and each was known by the number of miles from that town, Seven Mile 'Drome being one.

Apart from the difficulties imposed by the vast distances—practically all targets were at extreme range—most units were handicapped by shortage of aircraft or having to operate more than one type. For example, the 3rd BG operated A-20s and B-25 Mitchells together for a time. For several months after its arrival the 38th BG (Mitchells) had only two squadrons. The 22nd BG arrived in the theatre with Marauders, and was due to eventually re-equip with Mitchells. However, one squadron, the 19th, retained reconditioned Marauders until February 1944, when the whole of the 22nd re-equipped with B-24 Liberators to become a heavy bomber group.

The B-24 was considered more suitable than the B-17 in the Pacific, where its great range could be more effectively used. In November 1942, the 90th BG, equipped with Liberators, arrived in Australia. The remaining crews of the 19th were sent home, and eventually the group was transferred back to the USA.

The 5th AF pioneered several techniques that became widely used in the Pacific war: the B-17s of the 43rd Group experimented in the technique of low-level skip bombing against shipping, and the high-altitude approach, very necessary in Europe, was dropped. Mitchells of the 3rd Group had the bombardier's position deleted and replaced by fixed nose guns—usually four—for low-level strafing of ships, tactical targets, airfields and similar objectives. Extra forward-firing guns were also fitted to the fuselage sides. Although both the G and H models of the Mitchell were fitted with a 75mm cannon, the weapon did not find much favour with the 5th AF. It was found that in attacking some targets, particularly ships, the steady run-

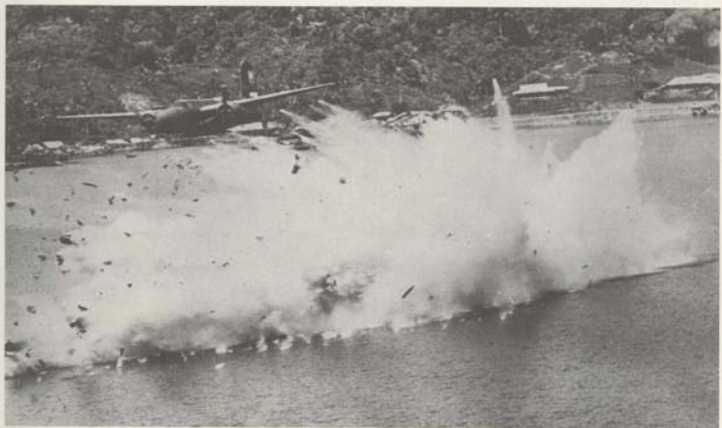
Men at work: armourers load .50in calibre machine-gun ammunition into the nose turret of a 7th AF Liberator named *'Ready Teddy'*. Built as a B-24D, this aircraft (in common with many early model Liberators in the Pacific) has had a spare tail turret fitted into the nose in place of the original 'greenhouse', with the armoured glass front panel removed to allow access. The dress of the ground crew is noteworthy, the side-arm of the man on the left probably indicating the presence of Japanese troops in the jungle surrounding the island airstrip.







One of the most remarkable picture sequences of the war was taken at Kokas, New Guinea, on 22 July 1944, when A-20s of the 312th Bomb Group were briefed to hit Japanese installations. Coming off the target A-20G 43-9432/V of the 387th BS took a direct hit in the belly, flipped over and plunged into the sea. (T. Jones)



in necessary to aim the cannon made the aircraft too vulnerable to AA fire; the blast from so large a gun also caused structural problems.

The various field modifications to beef up the B-25's armament led, in early 1944, to the appearance of the 'ultimate' strafing model, the B-25J, the solid-nosed version of which packed eight guns. With four more 'fifties' firing forward from the fuselage sides, two in the top turret and four in the fuselage, the eighteen-gun B-25J was the most heavily armed medium bomber in service anywhere. Before long this potent weapon was being built for all the air forces fighting the Japanese.

Along with strafing attacks, a special parachute bomb delivery was devised, to enable low-flying aircraft to avoid

the blast from their own weapons. Demolition and fragmentation bombs—'parademos' and 'parafrafs'—were particularly effective against troop concentrations and airfields. Most light and medium bomber attacks now became hectic dashes at low level with guns blazing, through curtains of tracer and smoke, the bombs being laid in strings across the target area.

By 1944, the 38th and 345th Groups were both equipped with Mitchells, and the 3rd, 312th, and 417th had A-20 Havocs. These units used the low-level attack method to the virtual exclusion of any form of high-level formation bombing, whereas most USAAF theorists favoured high-level tactics up until that time.

In the first week of March 1943, the 5th AF, with units of the Royal Australian Air Force, scored a notable victory in the Bismarck Sea at the eastern end of New Guinea. Out of a sixteen-ship convoy, only four destroyers survived, and few of the 6,000 troops intended to reinforce the Japanese Army in New Guinea completed the trip. Hazardous low-level strafing tactics had more than paid off.

Following some initial difficulties, the 90th Group

The last Liberator group assigned to the 7th AF was the 494th, which began combat operations from Anguar on 3 November 1944. Here, 44-40559 'Kuuiipo' is readied for a mission less than twenty-four hours after arrival on Anguar, on 24 November 1944, its tail chevron indicating the 864th Sqn. The group was also the last B-24 unit to deploy overseas.





A pair of Liberators from the 11th BG's 26th Squadron during a mission to Truk on 29 July 1944, when 7th AF bomber squadrons had begun to use identifying tail symbols.

'Little Joe', a B-25G-1NA serialled 42-64806, makes a low-level run during a strike on Japanese shipping in the Marshalls early in 1944. Of interest are the blotched markings on wings and tail, and the tail gun position, which, combined with the mid-position top turret, indicates that this aircraft, part of the 7th AF's 41st BG, was built shortly before the introduction of the B-25H.





The striking nose marking of a B-25J Mitchell strafer of the 345th BG, 44-31064 assigned to the 499th BS. The bat face insignia was used on most squadron aircraft, along with the well-known 'Air Apaches' Indian head on the fin/rudder, the 345th Group marking. The light-coloured patch behind the insignia shows where the package guns have been removed, a common practice on 5th AF Mitchells.



'Bones', the last of 1,000 B-25Hs, in service with the 10th AF's 12th BG. Several photographs have been published of this particular aircraft, covered with the signatures of workers at the North American Inglewood plant, but this is one of the few showing it in an operational setting, with a battle number applied. Serialled 43-5104, the number '45' indicates assignment to the 83rd BS, 'Bones' being seen here at Pandaveswar, India, in 1944.

began to carry a greater share of 5th AF heavy bomber operations as the Liberator began to prove itself in operations in the South West Pacific Area (SWPA). The B-24 took over from the Fortress in the 43rd Group in late 1943, and the 22nd Group was re-equipped with Liberators in early 1944. Similar changes were made in bomber groups in the 7th and 10th Air Forces.

By late 1943, several Allied landings had been made on the north New Guinea coast, as stepping-stones to the liberation of the Philippines. The bombers had been engaged in attacking airfields, shipping, and troop concentrations throughout this campaign. In May 1943 another Liberator group, the 380th, had arrived in the

theatre and became operational, attacking targets in Java and Borneo.

With the addition of the 380th, the 5th AF reached its full complement of heavy bomber groups, all equipped with B-24s. These units were the 22nd, 43rd, 90th and 380th, and by mid-1944 they formed a sizeable striking force for use in the New Guinea, Philippines, and East Indies area.

While the 5th AF had been engaged in the difficult struggle in the 1942 New Guinea, campaign, the American forces were locked in a bitter struggle for the Solomon Islands. The South Pacific Area (SoPac) was commanded by the US Navy, whilst the SWPA was commanded by Gen. MacArthur. However, US Army bombers were involved in the Guadalcanal operation from the earliest days, three groups being sent to the SoPac area from the 7th AF in Hawaii—the 11th with Fortresses in July 1942, the 5th (Fortresses) in November 1942, and the 307th (Liberators) in February 1943.

These three groups, with various AAF fighter and transport groups in the New Caledonia and Solomon Islands, were formed into the 13th Air Force in January 1943, under the command of Major-General Nathan F. Twining. In June 1943, the B-25-equipped 42nd Group had begun combat operations, mostly against shipping and airfields; the Liberators and Fortresses ranged farther afield against similar targets.

In mid-1943, the 11th Group returned to the 7th AF, leaving the 13th AF with three bombardment groups, the 5th and 307th, by now all equipped with Liberators, and the 42nd, operating various models of Mitchell. Plans to invade Rabaul in 1944 were dropped, and instead it was to be neutralized and blockaded by sea- and airpower: the 13th AF took part in the early stages of this campaign.

Further command changes occurred in June 1944. General Kenney was named as commander of a newly constituted Far East Air Force, with both the 5th and 13th Air Forces under his command. The 13th was moved into the south-west Pacific and often occupied bases previously used by the 5th AF. Operations were directed at attacking the Japanese in the Philippines and islands between New Guinea and the invasion beaches of Leyte Island.

For months Allied planners had wanted to attack the oil refineries at Balikpapan in Borneo, and the task was allocated to the 13th AF. Balikpapan was over 1,000 miles from Noemfoor, the nearest bomber base, and the 5th AF was directed to assist as required in neutralizing the refineries. Eventually five attacks were made between 30 September and 18 October 1944. The Japanese, foreseeing such an attack, moved one of their crack Navy fighter units from Singapore to defend these targets.

This series of raids is most interesting from the point of view of the different procedures adopted by the two bomber commands involved. The Liberator groups of the 13th AF, which was in charge of the operations, carried only 40 per cent of normal ammunition. The 5th AF

directed its groups to remove the ball turrets from their Liberators as well as some armour and a complicated system of cruise control and weight adjustment was to be followed. This included transferring the contents of the bomb bay fuel tank to wing tanks after four hours, and moving crewmen from the waist compartment to other parts of the aircraft in a strictly timed rotation. On the return trip, any remaining ammunition was to be jettisoned 90 minutes from the target.

The first raid involved both 13th AF groups, the 5th and 307th, and the 5th AF's 90th Group. Four Liberators were lost to Japanese fighters.

In the second raid on 5 October, only the 13th AF was involved. The 307th suffered heavy attacks from Japanese fighters, losing seven Liberators; two aircraft ran out of ammunition, and all the rest were running short by the time the Japanese broke off their attacks. The tight 5th Group formation was left alone by the defending fighters.

In the third raid on 10 October, all five bomber groups, the 5th AF's 22nd, 43rd and 90th, and the 13th AF's 5th and 307th, took part; 5th AF fighter pilots offered to fly bomber support over the target from their nearest bases and ditch on the way back at a prearranged rendezvous, but Kenney would not permit this. Instead, Thunderbolts and Lightnings, dangerously overloaded with extra large drop tanks, flew out from hastily extended airfields at Morotai, 830 miles from Balikpapan. During the raid there was a fierce air battle over the refineries, resulting in American losses of four bombers and one fighter. The claims by the US forces involved amounted to over sixty

Napalm-filled 55gal petrol drums tumble towards Japanese positions on Iwo Jima, 1 February 1945, released by B-24s of the 27th BS, 30th BG. The five aircraft seen here were part of a twenty-one-bomber effort by the 30th Group that day.



Japanese fighters shot down.

The fourth Balikpapan raid on 14 October was the most successful in terms of damage inflicted on the refineries, and again involved all five bomber groups. Two US bombers and five fighters were lost, while American combat claims amounted to forty-three Japanese aircraft shot down. The fifth raid was an anticlimax, as the refineries were covered in cloud; bombing was conducted on timed runs by the two 13th AF groups taking part. There were no US losses and it was presumed that the Japanese had not replaced their fighters lost during the previous attacks.

This costly series of attacks was deemed worthwhile as the Japanese almost immediately felt the loss of fuel supplies, particularly aviation spirit. For the Americans, the loss of twenty-two Liberators and nine fighters was offset by the rescue of sixty of their crews by Catalina flying-boats and a submarine stationed off the coast of Borneo for this purpose.

After the Balikpapan raids, both the 5th and 13th Air Forces were heavily involved in operations connected with the invasion of the Philippines. Many of these missions were strikes on airfields to neutralize Japanese airpower, on shipping to cut their supply lines and, for the strafers, attacks on road and rail transport.

Apart from bombing operations, the 20th Combat Mapping Squadron, equipped with F-7 reconnaissance Liberators, carried out many hazardous individual long-distance flights to photograph and survey the Philippines. The 20th Squadron was one of four assigned to the 6th Reconnaissance Group, the other three using mainly F-5 Lightnings and a few adapted Mitchells.

Both the 5th and 13th Air Forces also had a Liberator squadron, whose primary task was individual night attacks by radar on Japanese shipping. In the 5th AF, the unit was the 63rd Squadron, part of the 43rd BG, and the 13th AF's 394th Squadron, part of the 5th BG, had a similar duty, but from January 1944, the task was taken over by the 868th Sqn., an independent unit. These squadrons became known as 'snoopers' and played havoc with Japanese shipping as well as providing RCM cover and a pathfinder service to other groups involved in night attacks on land targets. They were equipped with black-painted Liberators, each carrying a development of H2X radar and computerized bomb-release equipment.

Eventually, by early 1945, the bomber groups moved into bases in the newly liberated Philippines. The 13th AF was concerned with attacking remaining Japanese positions in the islands and assisting in the preparations for the forthcoming Australian invasion of Borneo. Other strikes

The first B-29 to drop bombs on Japan was 42-6279, 'Postville Express', of the 468th BG, which flew the mission of 15 June 1944 when the 58th Wing attacked Yawatta. The machine completed thirteen bombing and eight supply missions over the Hump before returning to the US as a 'war weary' in December 1944.



The nose of 'Eddie Allen' 42-24579 of the 45th BS, 40th BG, with seven camel symbols for missions over the Hump and six bombs for the half-dozen raids it had made at the time the photo was taken. Named in memory of the Boeing test pilot who was killed in the crash of the second XB-29, this Superfort went on to fly three more supply trips before moving to Tinian with the 58th Wing early in 1945. Its mission total eventually ran to at least twenty-three.



Nose art, 58th Wing style. The number of camel symbols as against bomb silhouettes is mute testimony to the necessity for supply missions in the CBI, the first word of the name having more emphasis on 'carrying' than . . .!





were aimed at cutting off Japanese seaborne supplies across the South China Sea, and eliminating Asian coastal targets south of Luzon.

The 5th AF then struck northwards, from bases on Luzon, against targets on Formosa, in Hong Kong, along the Chinese coast, and shipping in adjacent areas. Aircraft swept daily over airfields, ports, and marshalling yards, the heavies at high level, the Havocs and Mitchells at little more than ground level.

After the successful invasion of Okinawa, the four heavy bomber groups of the 5th AF were moved to bases on that

Liberator number 946 of the 13th AF's 307th BG, the 'Long Rangers' bearing the monogrammed 'LR' initials of the group on the fin. The aircraft was photographed early in 1945, shortly after the series of raids on Balikpapan.

The early B-29 Superfortress operations were flown from the CBI theatre, the time and area being represented here by 42-24732 of the 444th BG. The diamond tail marking indicates the group and the barely visible coloured waist band the squadron; black diagonal striping of the band indicated a flight leader's machine. This aircraft also carried one of the widely applied B-29 'hull numbers' on its forward fuselage, K-304 in this case.

island or nearby Ie Shima. Some of the medium and light bomber units were on Okinawa, or in process of moving there.

This last move brought the 380th Group, a long-time 5th AF bombardment unit, back to operations alongside the 22nd, 43rd and 90th groups. For many months the 380th had attacked Japanese positions in western New Guinea and Borneo and had been attached to the RAAF to





Another 40th Group B-29—named 'Genie'—with an impressive row of mission markers. Probably taken after arrival on Tinian, the photo shows the aircraft before the application of the triangle S marking allocated to the 40th Group.

train Australian crews in the use of the B-24. Later it had operated over the southern Philippines.

By the time of the Japanese surrender in August 1945 the 5th AF was operating over Kyushu, the southernmost island of Japan, and the 13th AF had almost completely swept Japanese shipping from the seas in the area for which it was responsible.

China—Burma—India: 10th and 14th Air Forces

The 10th AF was activated in the desperate days of early 1942, when Allied fortunes in the Pacific war were at their lowest. The 10th was to take command of USAAF units in India and Burma, and also to assist China in any way

possible to stem the tide of advancing Japanese armies in those countries.

In the earliest days, the 10th AF bomber force consisted of elements of the 7th BG and 11th Bomb Squadron in China, the latter flying B-25 Mitchells. The 11th BS flew alongside the American Volunteer Group, which, in a series of complex administrative moves to regularize its position, became the 23rd Fighter Group in July 1942. The few AVG personnel who opted to remain in China were inducted into the USAAF and formed the nucleus of the 23rd. The AVG's commander, Claire Chennault, then a captain (retired) in the USAAF, was speedily promoted, first to Lieut.-Colonel then to Brigadier-General (temporary) in the USAAF. Between 1937 and 1941 Chennault had served in China as Chiang Kai-Shek's aerial adviser, and had thoroughly reorganized and modernized the Nationalist Chinese Air Force in its fight against the Japanese. Chennault had held a unique position as a foreigner in China, and was held in great esteem. The 23rd FG, together with the 11th BS, formed the China Air Task Force from July 1942, with Chennault as its commander. In turn, the CATF was subordinate to Gen. Bissell, the commander of the 10th AF in India—Burma.

The 7th Group was, on paper, equipped with two

squadrons of heavy bombers (B-17s and B-24s) and two squadrons of Mitchells. In mid-1942, one of its squadrons, the 9th, had been hastily detached to the Middle East to bolster the Allied forces after the disasters of June 1942. Only the 436th Sqn. (heavy bombers) and the 22nd Sqn. (Mitchells) could offer any serious offensive action against the onrushing Japanese, their efforts being aided by a small RAF force. Attacks made by USAAF units were complicated by shortages of aircraft, crews, and support equipment. In particular there was a desperate lack of spare parts of every description. The Allied air forces retreated back to India as, time after time, the advancing Japanese captured their bases when ground defences collapsed. By the end of 1942, the Japanese had reached

the India-Burma frontier, and had cut the Burma Road, the only land supply link to China.

This meant that all supplies to China had to be carried by air over 'The Hump'—the Himalaya Mountains—by transport aircraft. If the 10th AF in India was hampered by shortage of every form of supplies, the CATF was in

Men at work: mechanics check an engine of a 7th AF B-24 on a Pacific island airstrip with a backdrop provided by 42-40123, a B-24D-30-CO with the aforementioned nose turret modification. Much of this necessary beefing-up of the Liberator's nose armament was carried out by the air depot in Hawaii before the arrival of B-24H and J models with factory-fitted nose turrets in 1944.





Superfortress V square 4 of the 877th BS, 499th BG, takes off for the Musashino aero-engine works, Tokyo, the first B-29 strike on Japan from the island of Saipan. It was common for off-duty personnel to watch the giant bombers take off.

desperate straits; often supplies intended for China were diverted to India-based units. CATF mediums attacked any target as and when the opportunity and the availability of fuel and bombs allowed. Russian-made bombs often being used. The AVG celebrated the last day of its existence, 4 July 1942, by escorting five B-25 Mitchells to attack airfields at Canton.

Much of the CATF's efforts were bound up with bombing airfields used by the Japanese, and similarly repelling attempts by the Japanese to bomb CATF bases. Wherever CATF runways were cratered, an army of Chinese workers descended on the damaged airfield and filled in any holes in a matter of hours. At one stage the CATF bomber fleet numbered only seven Mitchells, but in September 1942 a few more arrived.

Many attacks with small numbers of aircraft were mounted against dockside facilities in ports on the Chinese coast, airfields, railways, and so forth. Both bomber and fighter units were forced to constantly move their bases, partly to keep the enemy from bombing them on the ground, and also to enable them to reach targets in widely differing areas of China. In August 1942, the CATF made its first raid on an Indo-Chinese target, when its aircraft damaged warehouses at Haiphong and sank a freighter in the harbour.

On 21 October, the Lin-hoi coal mines were bombed by

B-24s from the 436th BS of the 10th AF's 7th Group. It had been hoped that the raid would flood the mines and render them useless, but, although the target was hit, flooding did not occur. Other targets included the docks and warehouses at Hong Kong, attacked by Mitchells in day and night raids, and Lashio airfield in Burma.

As these raids on targets in Japanese-held territory usually resulted in Japanese fighter opposition, Chennault provided fighter escort for his bombers whenever possible and many Japanese fighters were destroyed. Numerous other enemy aircraft, both fighters and bombers, were destroyed in USAAF attacks on their bases. Consequently, Japanese bombing raids on Chinese cities eased somewhat, and US airmen in general and Chennault in particular enjoyed a high prestige in Free China which manifested itself in many ways. One of the most helpful was the seemingly large proportion of US airmen who, with Chinese help, eventually found their way back to Allied territory after being shot down.

Chiang Kai-Shek himself wanted a separate American air force in China, rather than a sub-organization of the India-based 10th AF, and eventually, in March 1943, command changes took place which activated the 14th AF in China under Chennault's command. In effect, this consisted of the CATF, with the addition of bomber and fighter units.

The 341st BG had been activated in India in September 1942 with its component 490th and 491st BS, which were taken from the 7th Group. The 341st was then moved over the Hump to China, and absorbed by the 11th BS.

The 308th BG, a Liberator unit originally intended for the 8th AF in England, was diverted to the 14th AF and

arrived in China in March 1943. This group had to be self-supporting in the matter of supplies lifted over the Hump, and several supply sorties had to be made for every operational sortie that was flown.

Meanwhile, in the 10th AF, the 7th BG had been re-equipped with Liberators by the end of 1942 and now had a full four squadrons; the 9th, 436th, 492nd and 493rd. For several months the 7th Group represented the sole striking force of the 10th AF, its targets including Rangoon (dockyards), airfields, and many points along the Burmese railway system, upon which the Japanese relied heavily to bring their troops and supplies up to the fighting areas along the Burmese-Indian frontier. The 7th also attacked Bangkok, then capital of Siam, as the port assumed great importance towards the end of 1943. Two night raids were made in December 1943, the second of which resulted in heavy explosions and large fires.

Before moving to China in September 1943, the 341st Group's Mitchells interdicted the rail system farther north, and also went after any river traffic. As attacks on railways became more effective, the Japanese began to use the great Burmese rivers, the Sittang, Irrawaddy, Chindwin and their tributaries, as supply lines.

The 10th AF also activated the 1st Air Commando Group, specifically charged with air support for ground expeditions in Japanese-held territory. The 1st Commando Group had fighter, liaison and troop carrier squadrons, and for a time a bomber squadron, equipped with B-25G and H models fitted with the 75mm cannon, which the Air Commandoes used to some effect.

From April 1944, the 10th AF had another Mitchell

group, the 12th, a combat-hardened organization which had seen much service in the Mediterranean. Later re-equipped with strafe B-25Hs and solid-nosed Js, this group immediately made its presence felt and was a welcome addition to the 10th AF, commanded since August 1943 by Maj.-Gen. Davidson.

Despite the growing strength of the Allies in Burma, the Japanese had by no means given up the attempt to break through into India. In March 1944 they launched attacks, which were stopped at Imphal and Kohima by defending British and Indian troops. Many attacks were made by 10th AF Mitchells and Liberators on enemy supply points and lines of communication and the Allies slowly drove the Japanese back.

In China, the Japanese launched a series of offensives, beginning in April 1944. These had a two-fold immediate objective—to occupy a number of 14th AF bases in the south, and establish a Japanese-controlled land corridor between their occupied areas in the north and Indo-China in the south. They already controlled much of the Chinese coastline, with its many ports and cities.

T square 26 of the 498th Group at rest. Serialled 42-65210 the aircraft was the first of three aircraft to carry this code and was lost on 24 March 1945 with no word from the crew. Named 'Fay', her two successors were 'Fay' and 'Filthy Fay', and both were lost with no survivors or any word of their fate. The last four digits of the serial on the aircraft rudders shown here was common practice in the 73rd Wing. In the background is T square 24.





A 505th Group B-29 at its hardstand on North Field, Tinian, during May-August 1945. Carrying the 313th wing circle and group ID letter 'W' and green fin tip, the machine has black-yellow-black tail stripes to denote a lead crew.

The 14th AF did its best to assist the ill-equipped Chinese armies in stemming the Japanese advance, but with a dire shortage of all forms of supplies, air support was not as helpful as it might have been. The fighters of the 14th AF took on much of the support work, whilst a considerable proportion of the 308th Group's time was devoted to flying sorely needed petrol over the Hump.

Eventually the Japanese did establish a land corridor from northern China to the Indo-Chinese border, which split Chinese-controlled areas into west and east China. From the sizeable east China area, a squadron of Mustangs and a detachment of six 308th Group Liberators operated until forced by fuel shortage to return to west China.

Following the success of the anti-shipping 'snooper' Liberators in the 5th and 13th Air Forces, the 373rd BS of the 308th BG was equipped during 1944 with black-painted H2X-radar-equipped Liberators. Operating up and down the Chinese coast at night, this squadron took a great toll of Japanese shipping until July 1945, when it was transferred to the 7th AF.

The difficulties facing the 14th AF were compounded by the fact that it was made responsible for the defence of the Superfortress bases around Cheng-tu. The supplies needed for this purpose cut into Hump tonnage, which could have been used elsewhere in China. Other difficulties arose from differences of opinion between Gen. Stillwell, the US overall commander in the theatre, and Gen.

Chennault and *Generalissimo* Chiang Kai-Shek in China.

Even as late as April 1945, the Japanese were mounting land offensives in China, but eventually they began to withdraw their troops northwards, in the face of the mounting US Pacific offensive, then dangerously near the home islands—the troops might soon be needed to defend their homeland.

The 308th Group was put permanently onto air-lifting fuel over the Hump into China and was virtually withdrawn from bombing operations. Offensive operations were left to fighters and the small numbers of Mitchells left in China.

In Burma, the 7th Group (Liberators) and 12th Group (Mitchells) continued their attacks on enemy lines of communication, and made many sorties against railway junctions and yards. Railway bridges in particular were singled out for attention. From December 1944, the 493rd Sqn. used the Azon radio-controlled bomb on railway bridge targets. This weapon was fitted with controllable fins, and was dropped singly from about 8,000ft. The Liberators using Azon bombs could be recognized by three downwards-pointing aerials under their tails.

Rangoon fell in May 1945 to a landward drive combined with a seaborne landing to mark the end of the Burmese campaign; 7th Group Liberators continued to range forward over Indo-China, however. After some initial indecision, plans were made to move the 10th AF to China, to become a tactical air force, whilst the 14th would assume a strategic role. However, these plans were in only an embryonic stage when Japan surrendered.

'Joltin' Josie the Pacific Pioneer' was 42-24614, the first 73rd Wing Superfort to touch down on Saipan, carrying Gen. Haywood S. Housell, the commanding general of the 21st Bomber Command. 'Josie' carried the code T square 5 and was assigned to the 498th Group's 873rd BS. She crashed into the sea shortly after take-off on 1 April 1945, and was lost with her crew.



The nose of an F-7 Liberator of the 20th Combat Mapping Squadron, renowned for the exotic artwork of Al Merkling, a talented artist of the 1940s. In the process of being stripped back to NMF, 'Pappy's Passion' shows how a patch of blue photo-recon finish paintwork, in which F-7s were delivered, was commonly left behind the nose art.



In sixteen missions, '20th Century Sweetheart' also claimed the destruction of five enemy aircraft. Further details are unknown, but the aircraft was almost certainly photographed in the Marianas.

North Pacific: 11th Air Force

After an initial flurry of action when the Japanese occupied Kiska and Attu as part of the Midway operation, the 11th AF settled into a campaign characterized by attacks by small numbers of aircraft on Japanese-held islands.

The bomber strength of the 11th AF, under the command of Brig.-Gen. William O. Butler, consisted of the Mitchells of the 406th BS, and the Liberators of the 21st and 404th BS. These units arrived soon after the Japanese carrier-borne air attack on Dutch Harbour in June 1942. Originally intended to undertake a desert warfare role, the 404th's B-24s were complete with sand camouflage and were, appropriately, dubbed 'pink elephants'.

The 11th AF was the smallest of the seven ranged against the Japanese, and for most of the war had only two groups assigned, the 343rd Fighter and 28th Composite Group, the latter operating fighters alongside its Mitchells and Liberators.



The B-29's smooth uncamoouflaged nose section became an ideal 'canvas' for 20th AF artists, 'Tanaka Termite' being an ideal example. Gracing a machine of the 874th BS, the lady shares the nose with the squadron badge, a marking widely applied by some units. The group was the 498th, part of the 73rd Wing.

continued on page 33

Page 25 above: North American B-25C-NA Mitchell, 41-30117, of the 405th BS, 38th BG, 5th AF, flown by Major Ralph Cheli to lead an attack on Dagua airfield, New Guinea, on 18 August 1943. His aircraft set ablaze by enemy fighters, Cheli continued to lead his squadron in a successful attack before crashing—for which leadership he was awarded the Medal of Honor.

Below: A 444th BG B-29-1-BW, 42-6225, being readied for its 13th mission, on 25 October 1944. Nose markings include yellow with white outline name 'Ding How' and Chinese characters, white hull number and three bombing and eight Hump missions, mission 12 having yet to be chalked up.

Page 26 above: Neat echelon formation by B-25Hs of the 1st Air Commando Group over Burma, led by 43-380. Each aircraft has a plane in group nose number: 380 was '1' and 43-4271 was '6' (also named 'Dolly').

Below: Douglas A-20G-DO Havoc, 43-1815, of the 89th BS, 3rd BG, 5th AF. The squadron was identified by the colour of the tail tip and the skeletal figure on the rear fuselage reflected the group nickname—'The Grim Reapers'.

Page 27 above: North American B-25J-NC, 44-302085, of the 430th BS, 42nd BG, 13th AF. Unusual in marking a second serial number on its B-25s, the group did not distinguish squadrons by different tail tip colours, all known examples being red.

Below: A typical well-decorated A-20G: 'H' of the 312th BG, with white skull and crossbones group marking on the nose tip and bomb log, white group tail stripe and squadron playing-card symbol on rear fuselage. (J. H. Hill)

Page 28: Boeing B-29 Superfortress of the 505th BG, 313th BW, North Field, Tinian, 1945. Shown with rear fuselage formation leader stripes, this machine has the nose marking style common in the 313th Wing, albeit incomplete.

Selected tail markings, B-24 Liberator. *5th AF:* (1) 2nd (shown), 19th (white), 33rd (yellow) and 408th BS (green), 22nd BG. (2) 319th (shown), 320th (blue), 321st (green) and 400th BS (black), 90th BG. (3) 528th (shown), 529th (red), 530th (green) and 531st BS (blue), 380th BG. *10th AF:* (4, 5) 9th, 436th, 492nd and 493rd BS, 7th BG. Squadrons identified by area covered by chequers; two examples are shown. *13th AF:* (6) 370th, 371st, 372nd and 424th BS, 307th BG. Typical presentation; other known colours were red and yellow. *14th AF:* (7) 373rd BS, 308th BG. (8) 374th BS, 308th BG. (9) 375th BS, 308th BG. (10) 425th BS, 308th BG.

Page 29: Boeing B-29A-40-BN Superfortress, 44-61639, of the 768th BS, 462nd BG, 58th BW, Tinian, 1945. The aircraft retains the red rudder used by the unit in the CBI and also the ID call letter and squadron in group number on the outer engine cowings; the group emblem appeared only on the starboard side.

Selected tail markings, B-29 Superfortress. *58th BW:* (1) 25th (red), 44th (yellow), 45th (shown) and 395th BS (black), 40th BG. (2) 792nd (white), 793rd (shown), 794th (red/yellow) and 795th BS (yellow), 468th BG. (3) 313th Wing: (4) 6th BG. (5) 9th BG. (6) 504th BG.

Selected tail markings, B-25 Mitchell. *5th AF:* (1) 498th, 499th, 500th and 501st BS, 345th BG. Typical late markings shown. *7th AF:* (2) 47th, 48th, 396th and 820th BS, 415th BG. No distinguishing markings, aircraft overpainted olive drab and neutral grey. *A-20 Havoc. 5th AF:* (1) 386th (shown), 387th (diamond), 388th (heart) and 398th BS (spade), 312th BG. (2) 672nd (red), 673rd (yellow), 674th (white) and 675th BS (shown), 417th BG.

Page 30 above: Consolidated B-24J-170-CO Liberator, 44-40686, of the 867th BS, 494th BG, 7th AF, February 1945. With typical black group markings, this aircraft carried names adjacent to crew stations and a 'Pacific type' tail turret with powered guns replaced by hand-held weapons. *Below:* Another 867th BS aircraft, 44-40647, 'Lady Kaye', en route to Mindanao on 24 February 1945.

Page 31 above: B-29 M/43 of the 19th BG with serial partially obscured by the tail symbol, the codes 'K', 'M', 'O' and 'P' being masked off when the black square was applied to aircraft of the 314th Wing. Code and ID letter were repeated on outer engine cowings; single fin letter 'A' was probably a flight distinction.

Below: Bulldozers were essential items of equipment in the USAAF campaign in the Pacific; shown is a typical example rigged with a mechanically operated 'dozer blade.

Page 32: (1) USAAF bomber crewman, 1944-45, wearing the AN-H-16 flying helmet, the lightweight AN-S-31 summer flying suit with Army Air Forces shoulder patch, and full parachute and lifevest harness. The parachutes worn by some members of the bomber crew were of the chest type, clipping to D-rings on the harness. Others, such as this crewman, wore back-packs with a rip-handle on the left chest strap. He wears standard army boots and a pistol belt with water canteen.

(2) Armourer, circa 1943, engaged in arming the .50 cal. guns of a bomber on an island airstrip. He wears the ubiquitous faded olive drab 'baseball cap' and fatigue slacks of the same shade, with T-shirt and standard issue boots. Sidearms, first aid kit and water canteens were not unusual accessories at this stage of the war, when airstrips were not far from front lines.

(3) USAAF Brigadier-General in informal Pacific service dress. The lightweight 'chino' version of the 'overseas cap' bears the rank star and the gold piping of general officers' rank. The shirt bears ranking on the collar points, and a 20th AF patch on the left shoulder; the only other insignia is the silver pilot's 'wings' brevet.

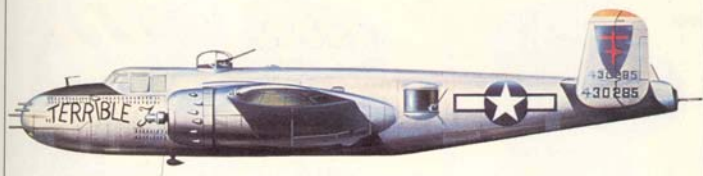


NORTH AMERICAN B-25C-NA MITCHELL, 405th BS, 38th BG



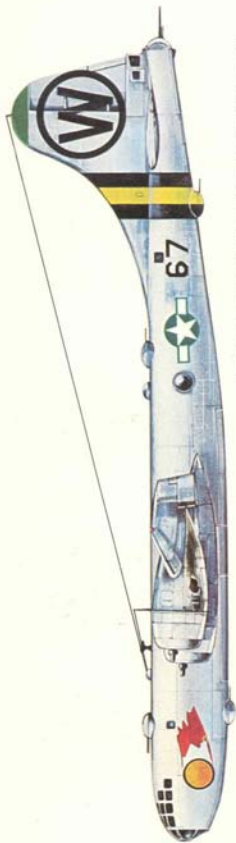


DOUGLAS A-20G-DO HAVOC, 89th BS, 3rd BG

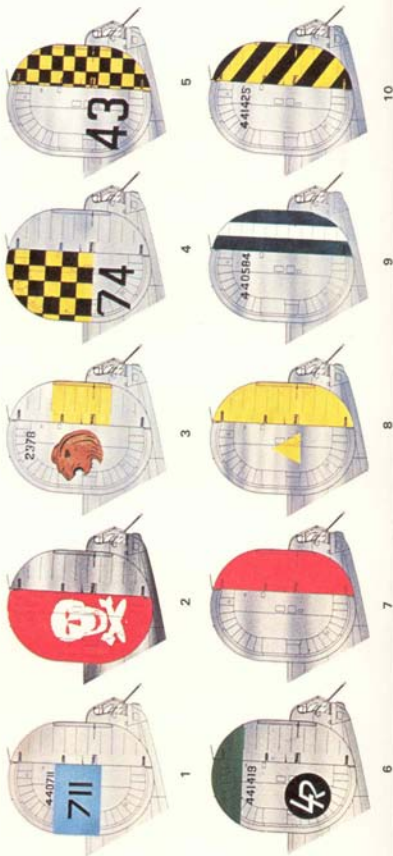


NORTH AMERICAN B-25J-NC, 430th BS, 42nd BG

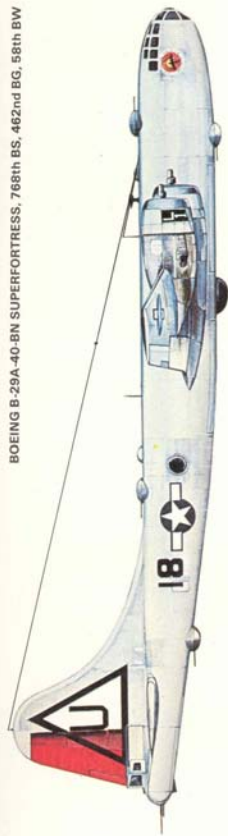




BOEING B-29 SUPERFORTRESS, 505th BG, 313th BW



BOEING B-29A-40-BN SUPERFORTRESS, 768th BS, 462nd BG, 58th BW



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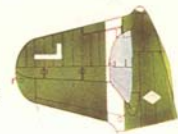
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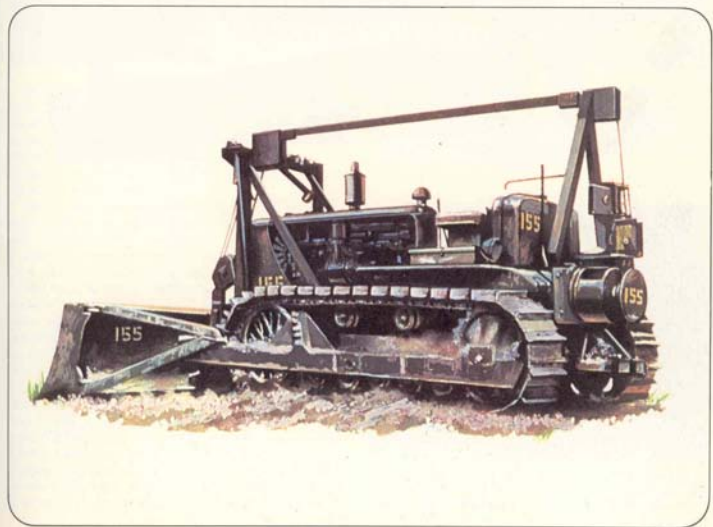


5



CONSOLIDATED B-24J-170-CO LIBERATOR, 867th BS, 494th BG







3



2



1



Attu island was reconquered and, after airfields were built, the reoccupation of Kiska was planned, but the island was evacuated by the Japanese about two weeks before US forces landed and occupied the island on 15 August 1943. Soon after this, the 21st and 36th Sqns., both equipped with Liberators, and the 73rd and 406th with Mitchells, were withdrawn.

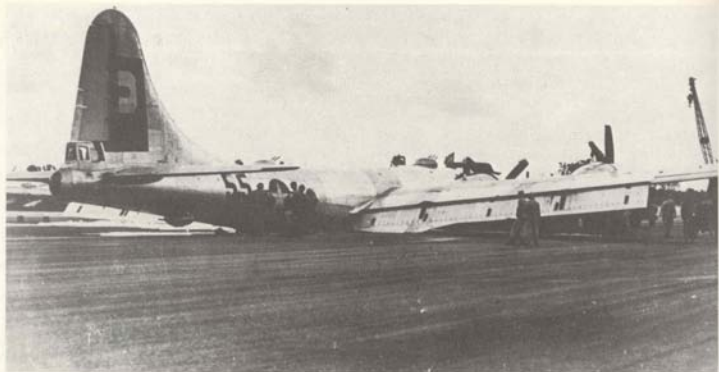
Most of the operations flown were by an average of six or eight aircraft or, on a good day, perhaps a dozen Liberators and Mitchells went looking for enemy shipping or encampment areas on the Aleutian Islands. Later, there were targets in the Kuriles, the chain of islands which extend from the 'tail' of the Aleutians to Japan. Apart from enemy fighters which opposed the attacks, the weather often proved troublesome; in these extreme northern latitudes, fog and rainstorms often clamped down for days on end. Between the storms and fog, the bombers flew whatever missions they could.

After the reduction of strength of the 11th AF, the remaining squadrons (the 77th with Mitchells and 404th with Liberators) continued attacking the Japanese Kuriles until the end of the war. On 11 September 1943, seven Liberators and twelve Mitchells attacked Paramushiro. During a prolonged air battle over the target, three bombers were lost and seven others forced-landed in Russian territory. This raid, at heavy cost, was the last

Impressive view of the 20th BG's corner of North Field, Guam, showing how the Superforts were crammed into these island airfields. In the foreground are three of their vital ground support vehicles: left to right a GMC cab over engine prime mover, a fuel tanker on a GMC 2½-ton chassis and a Dodge weapons carrier.



Photographs of B-29s of the 330th Group, 314th Wing, are comparatively rare. Here K/12, with AN/APQ13 radar between the bomb bays, is seen from a sister aircraft.



A belly landing for P/55 of the 39th BG. Much heavy lifting equipment was needed to move a damaged B-29, as evidenced by the cranes in the background.

until February 1944, when the 404th Sqn. once more sent six Liberators against the Kuriles.

By the end of the war, 11th AF bombers were undertaking long over-water flights in a dreary succession of missions in some of the worst flying conditions ever known. But the small air force had, by its efforts, tied down Japanese forces that could have been used elsewhere in the Pacific. It guarded the Allies' northern flanks against any further Japanese excursions and also helped keep open the route by which lend-lease aircraft were supplied to the Russians.

Central Pacific: 7th Air Force

After the Battle of Midway and the loss of Gen. Tinker, command of the 7th AF was eventually taken over by Maj.-Gen. Willis Hale. Following the utter defeat of the Japanese Navy at Midway, the role of the 7th became, for many months, that of a guard against any further attempts to attack Hawaii. Its bombers ranged far and wide, scouring the Pacific for Japanese shipping and submarines.

The 7th sent its Fortress-equipped 5th and 11th Bomb Groups to the South Pacific, where they took part in the

Solomon Islands campaign. To replace them, the 307th BG came to the 7th AF, equipped with Liberators. This group made long over-water flights to attack Wake Island on 22 December 1942 and again in January 1943, the bombers staging through Midway Island to refuel. In February 1943 the 307th was also sent to the South Pacific, where, with the 5th Group, it formed the heavy bomber element of the 13th AF.

Another new Liberator group, the 30th, was sent out from the mainland to join the 7th AF in October 1943, to replace the 307th BG, while the 11th Group left its Fortresses in the South Pacific and was shipped back to Hawaii in mid-1943. There it was remanned and re-equipped with B-24 Liberators, now coming from the factories in increasingly large numbers.

The 11th and 30th Groups were thus ready for their part in the US Navy's drive in the Central Pacific. Many raids were carried out on the Japanese-occupied Gilbert Islands, before US Marines took Tarawa, the principal atoll, in a bloody three-day battle in November 1943.

The two Liberator groups then moved to the Gilberts, where they were joined by the 41st BG, equipped with B-25s. The 41st's mission was to attack bypassed Japanese-held islands, enemy shipping, and airfields in the Marshall Islands. Most of these strikes were at low level, and good use was made of the 75mm cannon with which the 41st Group's B-25G and H models were equipped. The two Liberator groups also struck at targets linked with the forthcoming landing operations on Kwajalein Island.

Japanese opposition to these missions varied widely; on some occasions the bombers were met over the target by a swarm of fighters, which delivered vicious attacks and pursued them for over an hour into the return flight, most targets being beyond American fighter escort range. Flak

was occasionally heavy and well aimed, and crews who were forced to ditch faced long periods in flimsy rubber dinghies under the blazing Pacific sun, often in waters infested with sharks. For these reasons an efficient sea search and rescue service was established, and US Navy and Army amphibians, PBV Catalinas known as 'Dumboes', were used for rescue missions.

Crews could never be sure what opposition they might meet; at times Japanese resistance was unaccountably weak, being manifested in a few desultory bursts of AA fire. It should be remembered that many of these raids were often carried out in squadron strength only, and an attack by ten or fifteen fighters on a squadron of bombers was likely to result in a pitched battle—the air war in the Central Pacific never reached anything like the proportions of the European theatre, where it was common for several hundred aircraft to attack a single target.

After the Marshalls had been secured, the next phase was a series of raids on the Carolines, where the Japanese base at Truk was located. The 30th Group first attacked this important naval base with twenty-two aircraft on the night of 15 March 1944, and the run to Truk was to become very familiar to Liberator crews in that spring.

The pattern was repeated in the Marianas with the first strikes against Saipan and Tinian on 17 April by five Liberators of the 30th Group. Taking off from Eniwetok, the bombers faced a fourteen-and-a-half-hour flight, practically all of it over water and this first operation was to test the feasibility of such attacks, to take photographs, and bomb any worthwhile targets. Photographic coverage of many of these islands was of utmost importance to US intelligence. Most of the Japanese-mandated islands in the Pacific had been closed to Western nationals for years before the war, and little was known about their defences, airfields, or naval installations.

Eventually US forces moved into the Marianas and landed on Saipan, Tinian, Guam and other islands, beginning on 15 June 1944. These islands were seized as part of a broader strategy—they were within B-29 Superfortress range of Japan proper.

The pattern of island invasion was much the same everywhere: first would come the attacks by long-range bombers, then an amphibious assault covered by carrier-based aircraft. As soon as possible, often within hours rather than days, airfield construction battalions would move in to enlarge existing Japanese airfields or build new airstrips, and within a few weeks Allied aircraft would be operating from the newly won island. Attacks would then be mounted against the Japanese left on the island, or on other nearby islands, but soon air strikes would be made on the next island due for invasion, and so on.

By February 1945, it was Iwo Jima, half-way to Japan. Before 'D-Day' on 19 February, Iwo Jima was subjected to a rain of destruction from the air, by both HE and fire bombs. During one raid by the 30th Group's 819th Sqn., oil drums filled with napalm were dropped on enemy troop positions.



Men at work: a B-29 bombardier bends over his sight in front of the instrument panel and control wheel of the 'Airplane Commander'. Of interest is the bombardier's steel helmet, which appears to be of standard infantry pattern, hanging conveniently above his left shoulder.

Far away from Iwo Jima, only 600 miles from the equator and 400 miles east of the Philippine Islands, Japanese forces based in the Palaus were a threat to the flank of Gen. MacArthur's drive into the Philippines, and in September 1944 the Palaus were occupied by US Marines. To a newly completed airstrip on Angaur Island came a new bomber group, the 494th. Equipped with shiny natural metal-finish Liberators, the 494th arrived on 24 October and carried out its first operation within three days. Known as 'Kelly's Cobras' after its CO, Col. Laurence B. Kelly, this group had the dual distinction of being the last B-24 unit to be sent overseas from the USA and of not losing any aircraft to the enemy during its first 5,000 hours of combat flying. From Angaur, the 494th attacked targets in the Philippines, including bridges, radio stations and supply dumps. On Christmas Eve 1944,



An F-13 of the 3rd Photo Squadron on Guam during 1945. The letter 'F' on the fin and nose of the aircraft denoted the unit, which carried out all photo work over Japan for the Marianas-based B-29 bomber groups.

Clark Field, once a US Army airfield, but now used by the Japanese, was attacked for the first time. There followed many raids on airfields, all designed to eliminate Japanese airpower. In this first strike on Clark, about eighty Japanese fighters rose to intercept. Escort over the target was provided by 5th AF Lightnings. Although part of the 7th AF, the 494th continued this pattern of attacks on Philippine targets until June 1945, when it moved to Okinawa. This island, the last on the long road to Japan, was invaded on 1 April 1945. The initial landings were lightly opposed, but later fierce opposition developed. Suicide aircraft caused heavy losses when they dived onto US Navy shipping, but by the end of June organized resistance had ceased.

The 7th AF was then brought under the command of Gen. Kenney's Far East Air Force and moved from Iwo Jima to Okinawa, alongside the 5th AF. The 494th Group came up to Yontan airfield from Angaur, alongside the 11th Group. The 30th was returned to Hawaii to re-equip and train replacement FEAF Liberator crews, while the Mitchells of the 41st Group were moved to Okinawa after a spell in Hawaii, where crews had trained in the use of rockets. Japan was now well within the range of Mitchells flying from Okinawa and Maj. N. V. Woods, leader of the first 7th AF Mitchell raid on Kyushu, was reminded by a ground crewman that: 'The last man to lead B-25s over Japan made lieutenant-general.' This was a reference to Gen. Doolittle, then setting up the headquarters of a 'new' 8th AF on Okinawa.

The Mitchells' target, Chiran airfield on Kyushu, was clouded in, and the mediums circled for fifteen minutes before finding a break in the clouds. After diving and releasing their load of fragmentation bombs, they made full speed for Okinawa. The anxious ground crews were told that the raid had been 'a pushover'—a great anticlimax. But the war from Okinawa was vastly different to all the hard slogging up through the other islands. The heavies of the 7th joined those of the 5th in raids on Japan proper and instead of squadrons, aircraft went out in group strength, as, with the end of the European war, there was an abundance of aircraft, spares, and other supplies.

In the ranks of the 7th AF, this new situation was brought home in several ways. In one unit, a first sergeant told his men they had better start saluting officers, and in another, an order was posted instructing that 'Chin whiskers [beards] will be removed.' The 'old timers' of Tarawa and Kwajalein stated that whereas before only two generals and a few colonels had run the Pacific air war, now several dozen were needed. An era had ended.

In the last few weeks before the atomic strikes on Hiroshima and Nagasaki, the combined bomber units of the 5th and 7th Air Forces ranged over Japan and the Chinese Coast, attacking shipping, port facilities and airfields. Two days before the dropping of the atomic bomb on Hiroshima, FEAF pilots reported Japanese civilians waving white flags from fields and villages at US aircraft. The war had all but ended.

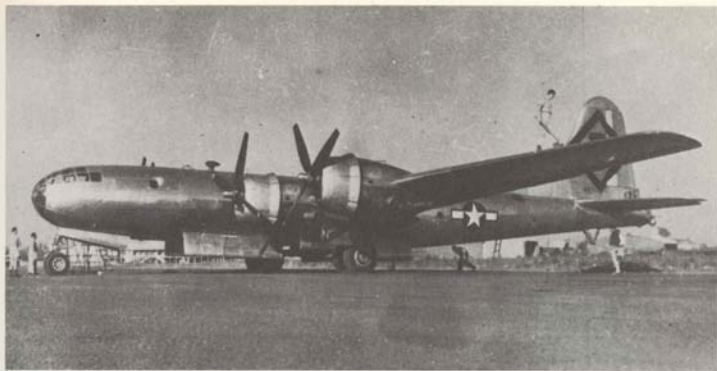
Nemesis: 20th Air Force

The 20th AF differed in many ways from the organizations previously described, as it was formed for the specific task of taking a new and untried bomber, the Boeing B-29 Superfortress, into battle over Japan. The 20th remained under the direct control of the Joint Chiefs of Staff in Washington, but in practice, command was exercised by Gen. H. H. Arnold through two bomber commands, the 20th (India and China) and 21st (Marianas Islands).

The other air forces covered so far were responsible to the commander of the theatre of operations in which they operated. Most of their targets were of a tactical nature, and their operational directives reflected the need to assist other land or sea operations. However, the 20th AF was intended from the outset as a strategic organization which would move as directed from Washington against Japan's



Men at work: the co-pilot of a B-29 seen from the navigator's position, with the control wheel just visible. The officer is wearing the standard GI lifebelt and is 'grabbing a snack'—note the discarded paper cups in the central aisle.



industry, rather than her armed forces. The 20th was activated in Washington in April 1944, by which time one combat wing of four Superfortress groups was on its way to India.

This move was not without its difficulties; the B-29 had been rushed into overseas deployment when a few more months of training and development would have been invaluable. The Superfortress was one of the largest aircraft then on operational status in any air force, and it had several novel features, including fully pressurized crew cabins and remote-controlled gun turrets. By early 1944 the only part of Allied territory that was within Superfortress range of Japan was Allied-controlled China. Even here, the fact that all supplies to Chinese bases had to be air-lifted over the Hump proved exceedingly troublesome. Special transport units were allocated to deal with this problem, and some B-29 bombers were modified to act as tankers as well.

The plan envisaged that the aircraft would be based in India, and would stage through airfields in the Cheng-tu region of China on their raids over Japan. The bombers flew out to India via North Africa between March and June 1944. Four groups, the 40th, 444th, 462nd and 468th, formed the 58th Wing, which was in turn under the control of the 20th Bomber Command, which was located at Kharagpur, India. Engine failures and operational problems such as take-off crashes with heavily loaded aircraft were all troubles which had to be solved.

The 20th BC flew its first combat mission on 5 June 1944, against Bangkok; ninety-eight aircraft took off from the Indian bases, one crashing shortly after take-off and seventy-seven bombed the railway yard at Bangkok, the primary target. Five aircraft were lost, and it took several days to round up stray bombers from various diversionary

Rarely photographed because of the special radar equipment they carried, B-29s of the 315th Wing carried a diamond device, in this case enclosing the letter 'B' to denote the 16th Bomb Group. Although lacking gun turrets, the machine retains tail defence and tail-warning radar, the spherical housing for which can just be discerned below the extreme rear fuselage.

airfields, where several had landed with assorted mechanical troubles.

The next Superfortress raid was the long-awaited first strike on Japan. The bombers staged through the Chinese bases to attack the steel works at Yawatta, although the Indian bases were barely completed in time and the advanced bases in China had been built by an army of peasant labourers. In the absence of airfield construction machinery, runways were laid by hand, the Chinese using picks and shovels and thousands of wheelbarrows brought from their family plots. Operating from these forward bases, which were able to provide only the most basic needs of a bomber unit, was to be a most difficult problem in the coming months. Added to this were the inevitable shortages caused by having to airlift all kinds of supplies, tools, spare parts and every drop of petrol over the Himalayas.

Each B-29 left its Bengal airfield with a full load of ammunition and bombs, and required only fuel from the Chinese staging airfield. Two heavily loaded take-offs per sortie proved taxing on both men and machinery, engine wear being a great problem on CBI-based Superfortresses.

The Yawatta raid was scheduled for 15 June 1944, to coincide with the landings on Saipan, it being hoped that the appearance of US bombers over the home islands would divert Japanese forces from the Marianas. Of the

sixty-eight Superfortresses dispatched, forty-seven actually bombed the steel works in a night raid. Results were difficult to evaluate because of haze and smoke, but the raid was hailed as a milestone in America as the first raid on Japan since Doolittle's gallant effort in April 1942.

This raid had set the pattern for CBI-based Superfortress raids. Other targets attacked from China during the latter part of 1944 and early 1945 included Sasebo and Omura in Japan, Hankow and Anshan in China. Palembang, in Sumatra, was attacked on 10 August by Superfortresses staging through an airfield in Ceylon.

On 29 August Gen. Curtis E. LeMay assumed command of the 20th BC, replacing Gen. K. B. Wolfe, who had brought the command to India after overseeing the testing and development of the entire B-29 project. On 5 November, Superfortresses from India attacked the naval dockyards at Singapore. Primary target was the King George VI Graving Dock, which was hit by at least two 1,000lb bombs, causing it to flood. Bombing from a height of 20,000ft, this attack was a landmark in 20th BC operations. Another outstanding operation was the incendiary raid on Hankow on 18 December, in which riverside dock and warehouse facilities were badly damaged in a crippling attack on the Japanese Army supply base.

However, events elsewhere had overtaken the CBI-based 20th BC. The invasion of Saipan, Guam and Tinian in the Marianas had provided Allied-held territory from which Superfortress attacks could be mounted. Moreover, they were much closer to the USA than the CBI, and there would be no need for an effort-sapping Hump supply operation. Accordingly, the next Superfortress wing due for overseas movement, the 73rd, was diverted to Saipan.

An enormous airfield construction programme was initiated, and existing Japanese airstrips were rapidly enlarged. At least two giant runways were to be built at each airfield, along with hardstands, servicing areas and headquarters buildings.

The incoming personnel from the four bomb groups lived in tents until they could build their own living quarters. By 28 October, the new 21st BC sent the first of its B-29s on one of several shakedown missions against Japanese islands. General Hansell, the 21st's commander, had intended to fly on the operation, but his aircraft was one of the four to abort. By the end of November, the 73rd's four groups, the 497th, 498th, 499th and 500th, were in position on Isley Field; they were all based at one airfield, setting a pattern for all future Very Heavy Bomber Groups, as B-29 units were designated.

On 24 November, the Marianas-based Superfortresses attacked the Musashino aero-engine plant near Tokyo, in the first attack on Japan from the Marianas. B-29s from all four groups of the 73rd Wing took part, 111 machines being led by 'Dauntless Doty' of the 497th Group. Bad weather had forced at least two postponements of the mission, but when at last it was dispatched, an army of soldiers, marines, airfield construction workers and



Men at work: B-29 ground crew probe the innards of a Superfort's starboard engines while a refuelling crew top up the tanks. The vehicle in the foreground is the ubiquitous GMC 2½-ton tanker.

ground crews lined the runways to watch the giant bombers lift off.

In 'Dauntless Doty' was Brig.-Gen. 'Rosy' O'Donnell, Commanding General of the 73rd Wing, whilst in the right-hand or co-pilot's seat sat Maj. Robert K. Morgan, better known as the one-time pilot of the 8th AF's famous B-17F 'Memphis Belle'. The 20th AF had a number of airmen throughout its organization with experience of operations with other air forces.

There were seventeen aborts, and only twenty-four aircraft unloaded on the primary target, another sixty-four dropping their bombs on dock and urban areas. But although the first B-29 operation from the Marianas could hardly be termed a success, it set the pattern for the first three months of operations by the 21st BC. By the first week of March 1945, Musashino had been hit eight times,



Men at work: bomb casings were unloaded from trucks onto small trolleys for the fins to be fitted prior to being pushed under the bomb bay and hoisted up into the racks. This type of trackage was not 'GI' and was a good example of the improvisation in which ground crews indulged.



and still stood. Every possible difficulty had been encountered, varying from high winds at the altitudes at which the bombers flew to undercast that made visual bombing very difficult. The tactics used were those which had proved so successful elsewhere — high-altitude, close-formation daylight bombing. Other targets which had been attacked during this period included Nagoya, Akashi and Kobe.

In January 1945, Gen. Arnold had reshuffled his 20th AF commanders. General LeMay came from the 20th BC in China to the Marianas to take over the 21st BC, while Hansell returned to the USA to head an expanded B-29 training organization. Brigadier-General Roger Ramey went from the 21st BC to the CBI to become the Commanding General of the 20th BC.

A second wing of Superfortress groups had arrived in the Marianas by this time and had begun operations in February 1945. This was the 313th Wing, also with four groups; the 6th, 9th, 504th and 505th. This wing was based on Tinian Island, adjacent to Saipan, and, like the 73rd Wing, occupied one large airfield.

On assuming command, LeMay launched several more high-altitude formation attacks, with varying results. A programme of lead crew training, similar to that used in the CBI, was then started and ditching drills and air-sea rescue procedures, the cause of a number of personnel losses, were tightened up.

Tragedy—No. 192 of the 345th's 498th 'Falcon' Sqn. on fire during a low-level raid on the Byoritsu oil refinery, Formosa, on 26 May 1945. Immediately to the rear of the stricken Mitchell are parachute bombs, probably dropped by the aircraft from which this photograph was taken. No. 192 crashed a few seconds later, killing the pilot, Lt. Robert Kanuf, and all four other crew members. With its aircraft rigged as strafers by the fitment of extra nose guns the 345th Group conducted numerous missions at ultra low level; there was little chance for the crew if their aircraft took a vital hit.

Lying half-way between Saipan and Japan, Iwo Jima became a haven for damaged Superfortresses. Eventually, a complete service organization was established on the island, along with fighter groups to escort the Superfortresses over their targets.

Meanwhile, at Arnold's request, LeMay dispatched several incendiary raids against Japanese cities. Results indicated that such strikes resulted in greater destruction than normal high-explosive loads. After carefully weighing the arguments for and against, a plan was devised to fire bomb the major Japanese cities from an altitude of 10,000ft, instead of the usual 20 to 30,000ft. LeMay was of the opinion that the Japanese had no viable defence against night attack, and an experimental nocturnal raid was scheduled. One of the advantages of bombing from lower down was that there would be no petrol-consuming close-



Montage of 5th Air Force Liberator nose art. Included in the 23 pictures are aircraft of the 20th CMS and 90th and 43rd BGS.

formation flights, and more fuel would be saved because there would be no need to climb to a great altitude. Furthermore, in this initial raid, it was decided to save weight by leaving out the ammunition for the guns of the bombers, which resulted in a big increase in bomb load, an average of about six tons per Superfortress.

Briefing for the mission planned for the night of 9-10 March 1945 was a traumatic affair; the instructions were heard in stunned silence by the majority of crews. The entire doctrine and theory around which the Superfortress was conceived was being disregarded, based as it was on the established concept of daylight formation precision bombing of specific targets.

Much of the reason for this radical departure from accepted practice lay in the nature of the targets. Tokyo, for example, was crammed with small industries, many of them modest family businesses, all feeding the Japanese war machine and located in the heart of the teeming city centre. The structure of these buildings was such that they were far more vulnerable to fire than any comparable Western city. A few airmen conceded that the precision attacks of the Superforts so far made on Japanese industry were somewhat disappointing, and realized that LeMay's bold plan was an attempt to get the campaign back on the rails. Grudgingly, they decided that it might work. Most pilots expressed worry over the possibility of collisions and thoroughly briefed their gunners, who, without weapons, were to act as 'scanners', to maintain an alert lookout for other bombers. Other airmen doubted the wisdom of carrying no weapons—if the Japanese did possess a night-fighter force, the 21st BC could lose many aircraft. The comparatively low altitude over the target concerned others, and they felt that the Japanese flak would cause many losses. LeMay, however, was a veteran of the European theatre and had personally led many attacks on some of the roughest targets in north-west Europe. He considered Japanese flak far less dangerous than the German variety. In the end, it was LeMay's personal decision to launch the raid. If it failed, the losses could be very heavy, and his career as a bomber commander would be over.

A maximum effort was ordered for the operation, involving 334 aircraft, a record number at that time. Apart from the 73rd and 313th Wings, the newly arrived 314th Wing provided some aircraft from its 19th and 29th Bomb Groups. Two other groups, the 39th and 330th, were not yet ready for operations.

Aircraft of the 314th Wing took off first at 1735hrs on 9 March. They were some forty minutes earlier than the Saipan- and Tinian-based 73rd and 313th Wings because the 314th's base at Guam was farther from Japan than Saipan or Tinian. Nearly three hours were required to get the whole force airborne. The first bomb actually fell on Tokyo shortly after midnight, and within a few minutes the fires raged out of control. The raid was highly concentrated, as the intervalometers in most bombers were set to release the incendiary clusters every 50ft on the



More of Al Merckling's handiwork on the nose of a 20th CMS F-7, the cleverly composed 'American Beauty'.

target run. Before long, the many conflagrations fused together to form a huge fire storm, which swept unchecked through the city. Destruction was enormous, and over sixteen square miles of the Japanese capital was devastated. Violent thermal updraughts threw some of the 60-ton bombers thousands of feet in the air; crews were choked by smoke and acrid fumes which entered the cabins, and the airmen were forced to use their oxygen masks, although the flight was below oxygen height.

On the ground, horror piled on horror as the fire storm, previously seen only in Hamburg and Dresden, swept over the city. Many listed targets were in the burned-out area, and Japanese accounts listed 83,000 dead and at least 40,000 injured. The US losses were fourteen aircraft, but five crews were picked up by air-sea rescue units.

On their return, crews were elated at the success of the raid, and airmen left off the roster for the first one clamoured to go on the next, which was not long in coming. On 11 March, less than twenty-nine hours after the last B-29 had returned from Tokyo, the first of 313 aircraft began to take off for Nagoya.

A force of 285 Superfortresses reached Nagoya and dumped its incendiaries over a part of the city which included several aircraft plants, but the attack did not repeat the vast devastation seen two nights before in Tokyo. As well as being a more modern city with fire breaks in the streets, Nagoya had a more efficient fire department, and there was a lack of surface wind to spread the fires, factors which combined to limit the damage to a total of slightly over two square miles. Even so, to the citizens of Nagoya, the attack must have been a shattering experience. A US submarine reported wood smoke 150 miles offshore. By the late afternoon of 13 March, 301 bombers had been again readied for take-off, their target this time being Osaka. As a precaution on the Nagoya raid, each bomber had carried 200 rounds of ammunition for the tail guns, as it was thought that the Japanese would have stepped up their defences after finding that B-29s that had crashed after the Tokyo raid had been unarmed. For the Osaka strike, the aircraft flying in the lowest height band



A latecomer to the Pacific war was the B-32 Dominator, developed as an insurance against the failure of the B-29. Several engineering problems delayed the type's combat debut and only one unit, the 386th BS of the 312th BG, formerly equipped with A-20 Havocs, received Dominators before VJ Day. In this photograph, 42-108529, named *'The Lady is Fresh'*, stands at Florida Blanca airfield in the Philippines. One of the first B-32s to arrive in the area, the machine flew several missions before an engine fire grounded it. Shortage of parts kept the 'lady' on the ground until VJ Day and she arrived on Okinawa on 20 August.

also had ammunition for their two lower turrets, as there may have been an opportunity to knock out searchlights in the target area. The 274 Superfortresses which got over the target bombed by radar through cloud and burned out over eight square miles of the city. The chief commercial district and 110 major war factories were utterly destroyed.

On the night of 16-17 March, 307 Superfortresses dumped over 2,300 tons of fire bombs into Kobe, one of Japan's most important ports and transport centres. The attack lasted only 128 minutes, and almost three square miles of the city were left in ruins. Although the staff of the 21st BC considered that the attack was not as damaging to the city as they hoped, many industrial targets, including a shipyard, were badly hit.

The fifth and last attack in this series was a second fire raid on Nagoya. Launched on the night of 19 March, one-third of the aircraft carried two 500 lb HE bombs to disrupt the fire services of the target city—by now, practically all stocks of incendiaries in the Marianas were becoming exhausted. Of the force of 313 dispatched, 290

Superfortresses burned out three square miles of the city, and several important targets, amongst them Nagoya arsenal, the rail yards, and an aero-engine factory, were destroyed.

In ten days, the 21st BC had dispatched 1,595 aircraft against Japan, and had dropped over 9,000 tons of bombs, practically all of them incendiaries. Four of Japan's major cities were left with huge areas of fire-blackened devastation. The Superfortresses had won a major victory and the March 'fire-blitz' had succeeded in a manner which could hardly have been foreseen when such raids had been planned. Some of LeMay's crews had flown on all five missions, and all aircrews were tired. Ground crews had been involved in hours of almost non-stop work and were exhausted.

However, after a short rest, the Superfortresses were out in force after different targets. The 21st BC was called upon to support the Okinawa campaign, with the landing due on 1 April 1945.

From 29 March, B-29s attacked airfields in Kyushu, the southernmost island of Japan proper, airfields from which the Japanese launched many attacks against the US fleet off Okinawa. As the threat from Kamikaze attacks increased, so the B-29s of the Marianas-based 21st BC increased their attacks on the airfields in southern Japan. By mid-May, however, US airfields on Okinawa were handling enough aircraft to release the Superfortresses from their airfield strike task.

At the same time as the airfield attacks on Kyushu were launched, the command launched the first of many sea mining sorties, which had been in the planning stage for several months. LeMay delegated the task to Brig.-Gen.

John H. Davis of the 313th Wing, the first mission being flown on the night of 27-28 March by 105 Superfortresses. Each bomber carried a six-ton load of 1,000 and 2,000lb mines, which were released by parachute at heights of 5,000 to 8,000ft, using standard AN/APQ-13 radar. Some flak was encountered from enemy shipping in the target area, the Shimonoseki Strait, and three B-29s were lost. Many further mining operations were flown by the 313th Wing, which proved to be a most effective method of destroying Japanese shipping. By the end of the war, in conjunction with submarine operations of the US Navy, practically all Japanese shipping activity had been strangled. Eventually the mining task fell to the 504th BG of the 313th Wing, which, except for a short period of twelve days in July 1945, successfully completed the B-29's anti-shipping activities single-handed.

Following the raids on airfields in support of the Okinawa operations and the inauguration of the mining campaign, the Superfortresses returned to the destruction of cities. Stocks of incendiary bombs were built up after the March blitz; and the command launched a series of strikes on the major Japanese cities beginning in April 1945. This included daylight precision attacks, daylight urban area incendiary attacks and night area attacks on the March pattern. Parts of the major cities which had remained undamaged in earlier raids were bombed, and the aiming points were moved around to eliminate whole areas of commerce and industry.

In mid-June, a series of attacks was begun against smaller Japanese cities (those with populations of 100,000 to 200,000), following the established pattern of fire raids at night. One combat wing of Superfortresses attacked each city, and on most occasions four cities were bombed on the same night.

By early May 1945, the operations of the 20th BC in India and China had been closed down, and the entire 58th Wing, with its four bomb groups, the 40th, 444th, 462nd and 468th, was moved to a newly built airfield on Tinian. The 58th Wing flew its first mission from the Marianas on 5 May, a raid on Kure.

The 21st BC now consisted of four Superfortress wings, the 73rd, 313th, 314th and 58th, each based on its own airfield. A further wing arrived in the Marianas and began operations in June 1945. This was the 315th, the fifth and last B-29 wing, consisting of the 16th, 331st, 501st and 502nd Bomb Groups, which was based on a second airfield on Guam. Earlier, the 21st BC had experimented with night precision attacks on small targets, but the AN/APQ-13 radar proved unsuitable for this technique, although it was used for the urban area fire raids. However, the aircraft used by the 315th Wing were B-29Bs, the fastest version of the Superfortress. Built by Bell at Atlanta, this model deleted all defensive armament except the tail guns, which had a built-in radar-controlled fire system. Removal of the heavy turrets and Central Fire Control (CFC) system of the earlier Superfortresses saved much weight and in the B-29B had the new high-definition AN/APQ-

7 (Eagle) radar, which could seek out small, specific targets. Training of the four groups of the 315th had emphasized precision night attacks by radar instead of formation flying and visual bombing.

The 315th Wing was allocated the task of destroying the Japanese oil industry, and flew all its missions against such targets. After a few initial shakedown strikes against Japanese-held islands, the wing flew its first mission against a Japanese oil refinery on 26 June and by 14 August (VJ Day) it had flown fifteen missions against ten oil refineries, losing only four Superfortresses. Over 1,200 sorties were dispatched in these attacks and very heavy bomb loads, up to ten tons per aircraft, were carried.

In May 1945 another unit, known as the 509th Composite Group, came to Tinian, with only one Superfortress squadron instead of the usual three per group and, unusually, a C-54 Skymaster-equipped transport squadron. It moved into a hardstand area on Tinian, adjacent to the 313th Wing, and promptly used its own tough military police unit to bar a number of buildings to non-509th personnel. No outside personnel knew anything of the 509th, and all its activities were cloaked in the utmost secrecy.

The unit's orders were received direct from 20th AF headquarters, and its tactics differed from those of all other Superfortress groups. These consisted of attacks by small numbers of B-29s, each aircraft dropping a single large bomb on a Japanese city. The bombs were released at a great height, and the release was followed by a rapid turn and dive away from the target.

Because of the secrecy surrounding its operations, and the fact that its aircraft and crews did not take part in the mass raids flown by the other groups, the 509th inevitably became the object of some barbed witticisms from other units on Tinian.

In July 1945 came a number of wholesale organizational changes to the command structure of the B-29 force. The 21st BC became the HQ 20th AF, and the Washington-based command was discontinued. General Doolittle brought a nucleus of his European-based 8th AF to Okinawa to establish a Superfortress organization on that island, many of his staff coming from the now defunct 20th BC headquarters in India.

The Commander of the US Army Strategic and Tactical Air Force was Gen. Spaatz, who was to control 20th and 8th Air Forces' attacks on Japan. He had had a similar function in Europe, controlling the UK-based 8th AF and the Italian-based 15th AF. The way was now clear for an invasion of Japan, planned for 1 November 1945.

However, on 6 August came the news that the city of Hiroshima had been devastated by a single bomb dropped by an aircraft of the 509th Group. The bomb was an atomic weapon. American scientists had perfected the bomb under conditions of the greatest secrecy, and a test weapon had been exploded in the desert at Alamogordo in New Mexico on 16 July. The crews were briefed to expect an explosion equivalent to about 10,000 tons of con-

ventional high explosive, but this estimate was, as later events showed, much too low.

The first bomb, a uranium weapon, was ready for use on 6 August 1945, and the 509th Composite Group was ordered to drop it on either Hiroshima, Kokura or Nagasaki. The 509th Group's Superfortress squadron, the 393rd BS, consisted of fifteen specially prepared aircraft, and a task force of seven aircraft was briefed to make the attack.

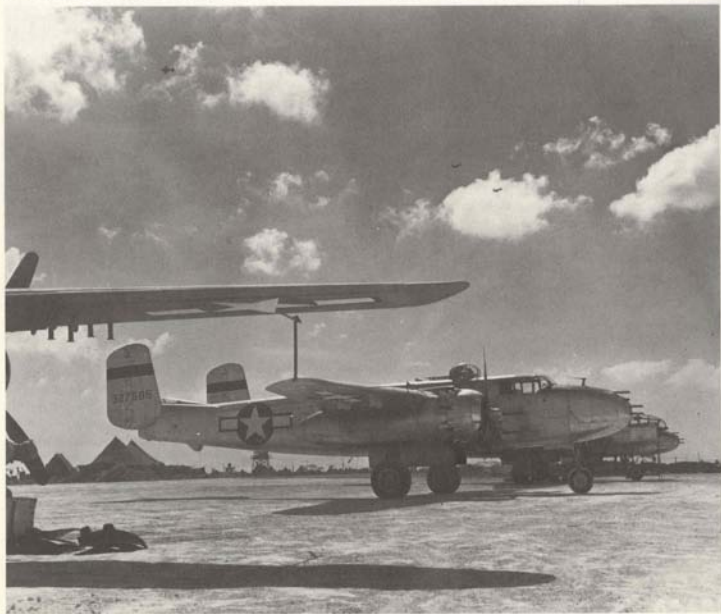
B-25Js lined up on Iwo Jima, 27 June 1945. Each strafing model mounts no less than twelve fixed forward-firing guns, a formidable battery without flexible guns, which brought the type's gun armament to eighteen. When even this weight of firepower was boosted by eight high-velocity aircraft rockets, the B-25J was the most heavily armed aircraft in the US inventory at the end of WWII. With a single glazed nose J model in the line, these aircraft are almost certainly from the 7th Air Force's 41st BG and may have later received OD and grey camouflage in common with the vast majority of Pacific-based medium bombers.

Three of these bombers were to fly over the three target cities, and radio a weather report to the strike aircraft. This B-29, captained by Col. Paul W. Tibbetts, carried the bomb. Two others were to act as instrument and photography aircraft, with a seventh in reserve. The latter was to be positioned on Iwo Jima, in case Tibbetts's aircraft had to divert there with any kind of malfunction.

Shortly before the take-off for Hiroshima, Tibbetts had his mother's name 'Enola Gay', painted on the nose of the bomb-carrying aircraft, a name by which the most famous Superfortress has been known ever since.

The 'Enola Gay' arrived over Hiroshima, the primary target, at 0815hrs after a completely uneventful flight. The bomb had been armed in flight by Capt. William S. Parsons, USN, in case a take-off crash caused an atomic explosion on Tinian.

The bomb was released at a height of 31,600ft, and immediately it had left the aircraft, Tibbetts pulled his B-29 into the oft-rehearsed 150-degree turn away from the target. The bomb was exploded by radar proximity fuses at





a height of 1,850ft. A searing flash and enormous explosion was followed by the now-familiar mushroom-shaped cloud, which reached a height of over 50,000ft, the top of it being visible from the Superfortresses at a distance of 390 miles. The reason for the unusual tactics of the 509th was now apparent. 'Enola Gay' made an uneventful landing back on Tinian, to be met by senior staff officers, pressmen and their cameras.

It was fully expected that the Japanese would surrender following the first atomic attack. When no such move was forthcoming, the 20th AF ran a 131-aircraft mission against Tokokawa on 7 August and an incendiary mission against Yawatta on the 8th. With still no word of surrender from the Japanese, a second atomic strike was scheduled for 9 August, using a plutonium bomb, identical to the weapon tested in the New Mexico desert on 16 July except for the addition of fins.

The primary target was Kokura and Nagasaki the secondary; planning for this second strike was similar to that for the first. Weather reconnaissance aircraft were to precede the weapon carrier and indicate whether the target was clear for visual bombing. As on the Hiroshima strike, the orders specified a visual drop. However, the trouble-free flight of 'Enola Gay' was not to be repeated for 'Bock's Car', the bomb carrier on the Nagasaki strike. Just before take-off, it was found that 600 gallons of much-needed fuel were trapped in a bomb bay fuel tank by a faulty fuel pump. On the trip up to Japan, more fuel was used while fruitlessly circling when a photographic aircraft missed a rendezvous.

Kokura was covered by cloud, but three runs were made in case a last-minute break in the cloud cover made a visual bomb run possible. After the third run, the task force left for Nagasaki. As that city was also clouded in, a radar run-in was started, a method of attack decided upon because of the now urgent fuel situation. However, at the last moment, the bombardier of 'Bock's Car' got a good sighting of the city, and made a visual drop. Again a huge mushroom cloud rose above the stricken city.

The pilot of the atomic bomb carrier, Maj. Sweeney, circled for a short time and then turned for an emergency

The B-29's combat career began and ended with supply flights, the latter being to prisoners of war immediately after the Japanese surrender. With the lettering 'PW SUPPLIES' barely visible under its port wing, 'Re-amatroid' also exhibits the last four digits of the serial on its fin and the identifying markings of the 6th Bomb Group, which include red cowlings panels and fin tip. The pirate's head badge of the 6th is carried on the distinctive flaming comet on the nose.

landing on Okinawa to refuel. Here emergency radio calls were not heard by the tower and various coloured flares were shot from 'Bock's Car' before those on the ground realized the aircraft was in trouble. There was very little fuel left apart from the inaccessible 600 gallons, and the aircraft only just made a safe landing on Okinawa. After refuelling it flew back to Tinian the same day.

The second atomic attack convinced the Japanese that there was no other course open to them except capitulation. After some delay, they accepted the Allied unconditional surrender terms on 15 August. Between 9 and 14 August, however, other conventional attacks were made by 20th AF's Superfortresses.

* * *

After the Japanese surrender, which was broadcast by Emperor Hirohito, the Superfortresses, along with other aircraft, flew over Japan and located many prisoner-of-war camps. These were followed by low-flying formation flights to parachute food and medical requirements into the camps.

The surrender stopped many planned operations and deployments of bomber units. The 'new' 8th AF did not fly a bomber operation, although it controlled some fighter operations by groups reassigned to it from the 7th AF. The redeployment of the 8th's bomber groups from England had barely started. The first 8th AF bomber wing headquarters, the 316th Wing, had arrived on Okinawa, and was in process of setting up its organization. Aircraft of two of the wing's component groups, the 346th and 383rd,

had started to arrive, but were too late to fly combat missions before VJ Day. The two groups did make a few 'show-of-force' and reconnaissance sorties just after 15 August, however.

In the 5th AF, the 319th Group, equipped with A-26 Invaders, had arrived on Okinawa and had just become operational. This group had flown B-26 Marauders and B-25 Mitchells in combat in the Mediterranean, and was the first ex-European group to move to the Pacific theatre.

The A-26 had begun to replace the A-20 Havoc in the 5th AF; the 3rd Group was converted to the new attack bomber by VJ Day, and the 417th would have followed suit if the war had continued.

A planned re-equipment of the 312th BG from A-20 Havocs to B-32 Dominators had just begun, and the latter

had carried out a few raids from Luzon bases, before moving up to Okinawa. Only the 386th Sqn. had been re-equipped by VJ Day and the B-32 had more than its share of teething troubles. Conceived as a back-up design in case the Superfortress failed, the Dominator reached the 5th AF when Gen. Kenney asked for this type after B-29s were refused him. Despite its poor engineering record, the Dominator claimed the last Japanese aircraft shot down by US bombers, during reconnaissance/show-of-force flights on 17 and 18 August, after the Japanese surrender. There was considerable confusion at this time and some Japanese units did not believe the surrender orders. On the 17th, one enemy fighter was claimed and two more the following day; the losses among Dominator crews were one killed and two seriously wounded.

Superfortresses continued their air drops to PoW camps until 20 September 1945, by which time the camps had been reached by ground forces. With this work of mercy the activities of the US bomber fleets in the Pacific ended, and the aircraft were either scrapped or flown home. In the USA many were scrapped, but a large number of B-29s were 'cocooned' in plastic against the future requirements of the USAAF. The war was indeed over.

A quartet of A-26 Invaders of the 319th BG, with the nearest aircraft retaining the white numerals on black marking of the Mediterranean area, where the group had previously been based. Along with the 3rd BG, the 319th operated Invaders in the Pacific during the closing weeks of the war.



Page 29: Boeing B-29A-40BN Superfortress 44-61639, 768th BS, 462nd BG, 58th BW, Tinian, printemps 1945. L'appareil conserve le gouvernement rouge utilisé par l'unité du CBI, ainsi que sa lettre d'appel individuelle et, sur le capotage extérieur du moteur, le numéro attribué à l'escadron dans le groupe; l'emblème du groupe ne figurait qu'à tribord.

Page 30 en haut: Consolidated B-24J-170-CO Liberator, 494th BG février 1945. Cet appareil portait sur sa surface métallique naturelle les marques noires typiques du groupe, ainsi qu'une décoration, nasale et des noms adjacents aux postes d'équipage. Une tourelle arrière du type 'Pacific' fut montée, les mitrailleuses étant remplacées par des armes individuelles.

Page 31 en bas: Les bulldozers constituèrent un matériel indispensable dans la campagne que menait l'USAAF dans le Pacifique; ceci est un appareil typique, équipé d'une lame à fonctionnement mécanique.

Page 32 (1) Ce membre de l'équipage d'un bombardier de l'USAAF des années 1944 à 1945 porte le casque d'aviateur modèle AN-H-16, la combinaison de vol légère spécialement conçue pour l'été, modèle AN-S-31 ayant l'insigne des Forces Aériennes de l'Armée appliqué sur l'épaule et le harnais complet comportant le parachute et le gilet de sauvetage. Ce membre d'équipage porte des sacs à dos, une sangle sur le côté gauche de la poitrine garnie d'une poignée pour tirer la corde d'ouverture du parachute, des chaussures classiques de militaire et une ceinture à pistolet avec un bidon.

(2) Armurier, aux environs de 1943, en train d'armer les canons .50 cal. d'un avion bombardier sur une piste aménagée sur une île. Il porte la 'casquette de baseball' que l'on voit partout aux États-Unis, fabriquée en toile olive, un pantalon de corvée du même ton, un T-shirt et des chaussures normales de militaire.

(3) USAAF *Brigadier-General* en tenue de ville du Pacifique. La version légère, dite 'chino', du calot porte l'étoile de son grade et le galon d'or indiquant le grade de général. La chemise porte la marque du grade sur les pointes du col et l'insigne de la 20th Air Force sur l'épaule gauche; le seul autre insigne est le signe distinctif du pilote, des ailes en argent.

Farbtafeln

Seite 25 oben: North American B-25C-NA Mitchell, 41-30117 der 405th BS, 38th BG, 5th Air Force von Major Ralph Cheli geflogen, als er einen Angriff auf Dagua Flugplatz in New Guinea führte (18 August 1943). Obgleich sein Flugzeug während des Anfluges von feindlichen Jägern in Flammen gesetzt wurde, hat der Cheli die Staffel weiter zum erfolgreichen Angriff geführt, bevor er ins Meer abstürzte. Für dies Führerschaft wurde er mit dem *Medal of Honor* ausgezeichnet. Zur Zeit der MoH Aufgabe war das Flugzeug mit vier zusätzlichen Rumpfspitzkannonen ausgerüstet, um es für die Strafrolle anzupassen: die originale Glasrumpfspitze des Bombenschützes wurde mit Farbe überstrichen und ein spezielles Ring und Korn Visier montiert, wodurch der Pilot selbst zielen konnte. Eine weitere Feldmodifikation war das Anbauen von doppelten .50 cal Maschinengewehr 'Paketen' auf jeder Seite des unteren Rumpfes.

Seite 26 unten: Douglas A-20G-DO Havoc, 43-1815 der 80th BS, 3rd BG, 5th Air Force, in normalen Geschwaderabzeichen, die Staffel wird

durch die Farbe des Schwanzstreifens gekennzeichnet, gelb bedeutet die 8th, rot die 13th und weiss die 90th. Das Gerippe hinten am Rumpf deutet auf die Spitzname des Geschwaders—'The Grim Reapers'.

Seite 27 oben: North American B-25J-NC, 44-30285 der 430th BS, 42nd BG, 13th Air Force. Das 42nd BG war unterschiedlich indem die Mehrzahl seiner B-25 mit einer zweiten Seriennummer gekennzeichnet wurden. Es gab auch keinen durch Schwanzspitzenfarben markierten Unterschied zwischen den Staffeln. Wie hier geschildert, sind alle genannten Exemplare rot gewesen. Das zweite Wort des Namens hies entweder 'Terry' oder 'Jerry'.

Seite 28: Boeing B-29 Superfortress des 505th BG, 313th BW, North Field, Tinian, 1945. Dieses Flugzeug trägt im Bilde die Markierungen des Flugordnungsführers—wie man an den Streifen am hinteren Rumpffeldes bemerken kann—and stellt die gewöhnliche Art—obgleich unvollständig—der Rumpfspitzmarkierungen unter der 313th dar.

Seite 29: Boeing B-29A-40-BN Superfortress, 44-61639 der 768th BS, 462nd BG, 58th BW, Tinian im Frühjahr 1945. Das Flugzeug behält das rote Leitwerk üblich in der Einheit im CBI und dazu auch die eigentümliche Ruffbuchstabe und Staffelnnummer im Geschwader ausserhalb der Motorenhaube aufgetragen; das Geschwaderabzeichen wurde nur am Steuerbord angebracht.

Seite 30 oben: Consolidated B-24J-170-CO Liberator, 44-40686 der 867th BS, 494th BG, 7th Air Force, angesehen während des Angriffs auf Cabello und Corregidor in den Philippinen in Februar 1945. Dieses Flugzeug trug die typischen schwarzen Geschwadermarkierungen auf seiner einfachen Metallführung sowohl als Rumpfspitzverzierungen und Namen neben den Mannschaftsstationen aufgetragen. Eine 'Pacific type' Hinterkanal wurde angebracht, worin die kraftgetriebene Geschütze mit Handmaschinengewehr ersetzt wurden.

Seite 31 unten: Panzerschaukel waren unentbehrliche Ausrüstungsgegenstände im Feldzug des USAAF im Stillen Ozean, wo sie gebraucht wurden, um riesengrosse Flugplätze aus den Inselwäldern auszuscheiden—und zwar oft besonders schnell. Hier sieht man eine typische Maschine, die mit einer Mechanisch getriebenen 'doser'-Schaukel versehen ist.

Seite 32: (1) Mitglied des Personals eines Bombers des USAAF, 1944-45: er trägt den AN-H-16 Fliegerhelm: den leichten AN-S-21 Fliegeranzug mit Army Air Forces Schulterabstreifen; und vollem Fallschirm und Rettungswestgewerk. Dieser Mannschaftsmitglied trägt Tornister mit Reissleingriff am linken Brustriemen, normale Militärschneidmesser, und ein Pistolengürtel mit Feldflasche.

(2) Waffenmeister i. 1943 bei der Ausrüstung der .50 cal. Geschütze eines Bombers auf einem Inselflugfeld tätig. Er trägt die überall befindliche abgefärbte dunkelgrün-braune 'Baseballmütze' und Drillhosen der gleichen Farbe, mit Sporthemde und gewöhnlichen Ausgabestiefel.

(3) Brigadegeneral der USAAF im alltags Pacific Dienstanzug. Die aus leichtem 'chino' hergestellte Feldmütze trägt den einzelnen Stern seines Ranges und den goldenen Schnurbesatz eines Generals. Das Rangabzeichen befindet sich auf den Kragenspitzen des Hemdes und ein 20th Air Force Tuchstreifen am linken Schulter; das einzige übrige Kennzeichen ist das silberne Fliegerabzeichen.

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