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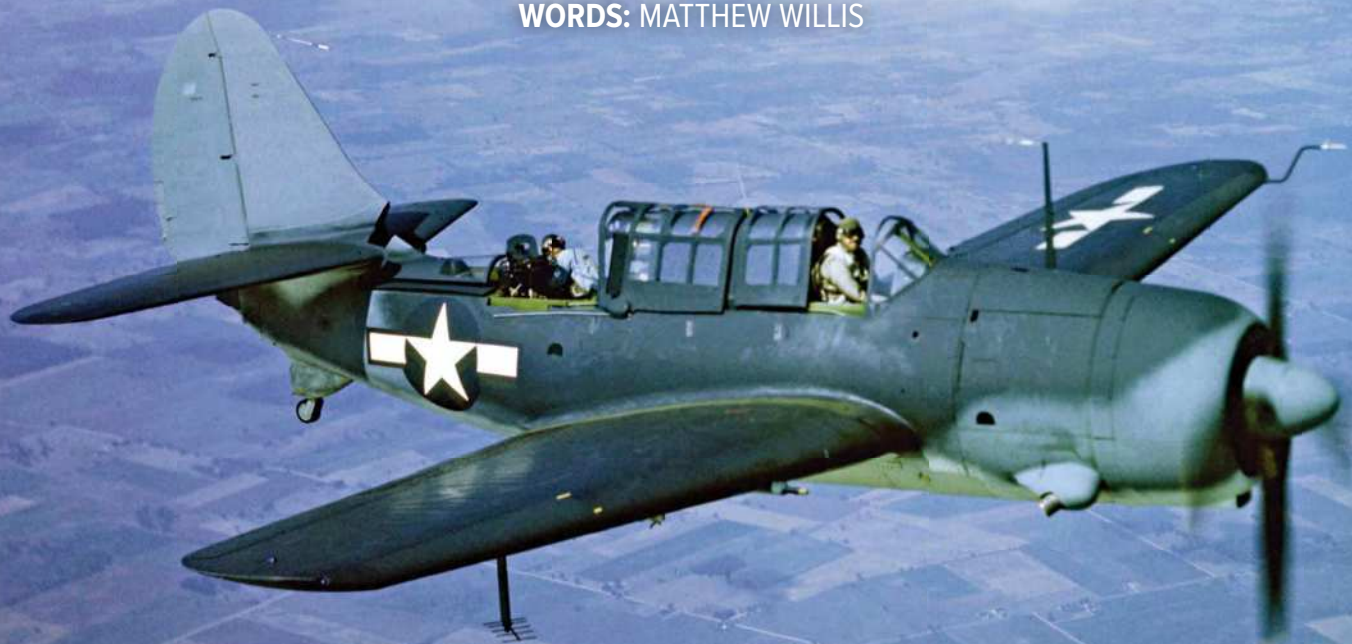
Helldiver I JW104 was one of the few to enter service with 1820 Squadron, Royal Navy.

CHRIS SANDHAM-BAILEY



CURTISS SB2C HELLDIVER

WORDS: MATTHEW WILLIS



Fresh from the Curtiss factory, this SB2C wears the standard camouflage scheme. US NAVY

Development

Technical Details

In Service

Insights

The Curtiss SB2C Helldiver is one of the most contradictory aircraft of the Second World War. The naval dive-bomber suffered a truly catastrophic development, leading to calls for its cancellation and political investigation of how the programme had gone so wrong. Yet when it finally reached front-line squadrons, at the start of the US Navy's triumphant push across the Pacific, it proved to be a dependable and hard-hitting aircraft, capable of more accurate delivery than the Grumman TBF/TBM Avenger and carrying more and heavier bombs than the Douglas SBD Dauntless.

The SB2C was conceived in 1938, two years before the aircraft it was intended to replace — the venerable SBD — entered service. 'SB' refers to a 'scout bomber', and 2C to the second aircraft in that class built by Curtiss to be operated

by the US Navy. The preceding 1935-vintage SBC was a biplane, albeit with modern features such as an enclosed cockpit and retractable undercarriage. In fact, the SB2C was the third Curtiss dive-bomber to be operated by the US Navy, the first being the 1920s F8C, and all were named Helldiver, though in the case of the pre-war biplanes that was unofficial. Curtiss played on its heritage by making the Helldiver name official for its new monoplane.

The US Navy's Bureau of Aeronautics (BuAer) issued a requirement for a scout bomber in June 1938. For the time, the specifications were extremely ambitious, calling for a 1,000lb bomb carried internally, and a 1,000-mile range, with a hoped-for speed of 300mph. Often quoted as the factor that fatally compromised the Helldiver was the insistence that the new dive-bomber be small enough that two could fit on the lift of

a fleet carrier. In fact, BuAer only demanded that the aircraft could be handled with wings folded on a lift measuring 41ft by 48ft, but did request that attention be given to fitting two aircraft on one lift. The thinking behind this was to speed up carrier operations, but it turned out to be impractical.

Curtiss and Brewster were given contracts for prototypes, and the Curtiss machine was designated XSB2C-1. It was to be powered by the new 1,600hp air-cooled Wright R-2600 engine (unsurprisingly, with Curtiss-Wright responsible for both programmes, as well as the propeller, from Curtiss Electric). While the design process was under way, the requirements were amended to include a hydraulic turret with a 0.50in machine gun, and a doubling of the bomb load. Curtiss requested that the turret be replaced with a conventional flexible gun mounting as the

weight of the aircraft was ever-increasing and its centre of gravity was creeping alarmingly to the rear. The navy relented but insisted on work continuing with three alternative designs in the hope that it might be able to be reintroduced later on.

The outbreak of war in Europe in 1939, and the prominence of dive-bombing over both land and sea, made the new aircraft increasingly significant. European air arms were expressing interest in it, while the need for US forces to modernise and expand was ever more acute. Production orders were placed for the SB2C before the prototype had even flown, and a land-based version for the US Army Air Corps, the A-25 Shrike, was procured as well. By January 1942, orders for the aircraft from various customers stood at 7,000, and additional production lines from two outside companies — Fairchild, and Canadian Car and Foundry — were established.



The XSB2C-1, BuNo 1758, makes its maiden flight from Buffalo, New York on 18 December 1940.

NATIONAL ARCHIVES AND RECORDS ADMINISTRATION

The result of the XSB2C-1's first mishap, following an engine failure on 8 February 1941.

NATIONAL ARCHIVES AND RECORDS ADMINISTRATION



With enlarged tail surfaces, the XSB2C-1 re-emerges from a hangar at Buffalo. US NAVY



The XSB2C-1 was finally completed in December 1940, and took to the air from Buffalo, New York, on the 18th of the month, with Lloyd Childs at the controls. Despite all the innovation, the aircraft bore a strong family resemblance to the SBC, the overall shape of the fuselage and tail clearly echoing its forebear. Problems soon became apparent, the main issue being a lack of stability. The fuselage length, kept short to help meet the navy's requirements for compactness, was one of the culprits here. Curtiss was allowed to extend the nose by a foot to help restore some longitudinal stability, but the maladies were only mitigated.

The test programme was barely under way when the still-temperamental R-2600 failed on approach, and the resulting heavy landing snapped the prototype's tail off, necessitating a complete rebuild. The XSB2C-1 returned to flight on 6 May 1941, only to suffer another landing accident four days later. Stability remained poor, so both horizontal and vertical tail surfaces were increased in several stages until an entirely new tail was fitted in September 1941.

Trials had been building up to the critical dive tests, to prove the Helldiver could do what it was created for, only for the prototype to break up in the air during a terminal-velocity dive in December due to a suspected failure of the horizontal stabiliser; pilot Baron T. Hulse took successfully to his parachute. This meant further testing had to wait until the first production machine was available, which would not be until the end of June 1942. When trials of that aircraft began, it

was clear that the handling and stability of a production-standard aeroplane fitted with service equipment were worse even than they had appeared on the prototype. Moreover, it gradually became apparent that many fabrications Curtiss had designed in aluminium or magnesium to keep the weight down were simply not strong enough and had to be replaced with

soon to end. In addition, the navy expressed a desire for the Helldiver to be adapted for the torpedo role, and vast effort was expended on equipment and trials for this task before it was abandoned.

For all the problems, deck landing trials seemed promising when they were carried out in October by the navy's flight test centre, NAS Anacostia in

in mid-air during a test dive, due to a catastrophic failure of the airframe. Curtiss test pilot B. A. Glover was flying BuNo 00001 from Anacostia, observed by a US Navy pilot in an SBD. The following was extracted from the BuAer report into the incident:

"The Navy pilot observed the start of the pull-out, altitude he estimated at 12,000 feet. After some 10° of the recovery, the airplane disintegrated. Of the cloud of wreckage which left the airplane, the Navy pilot could identify the left outer wing panel but nothing else. Although watching the airplane, the Navy pilot could not state what part left first. After a few wild gyrations, the airplane settled into a spin apparently striking the ground in an inverted attitude. The Curtiss-Wright pilot left the airplane at a rather low altitude but in plenty of time to effect a safe landing if his parachute had properly opened. It was later remarked that most of the shrouds on one side were cut apparently due to flying metal. The pilot was killed. There were no passengers."

The failure threw the programme into emergency mode. The wreckage was assembled and examined, and the National Advisory Committee for Aeronautics enlisted. It was considered that the tailplane had failed, leading to a change in angle of attack so violent that it had ripped the wings off and snapped the fuselage at the tail. A series of redesigns to the tail, wing and fuselage structure were ordered, and a programme of strengthening aircraft already built was implemented. Restrictions were placed on flight until the modifications had been embodied.

“In January 1943, the programme hit crisis point”

heavier steel versions. Persistent buffeting in the dive evaded all efforts to find a cure.

Further design effort was wasted with the hydraulic turret. As one of the three proposed designs was a Curtiss product, the company persisted with it long after it ceased to be relevant, only abandoning it in 1945 when Helldiver production was due

Washington DC. The Helldiver was felt to have good landing and take-off characteristics. More comprehensive tests began at NAS Patuxent River, Maryland, that month.

In January 1943, the programme, which until that point had merely been difficult, hit crisis point. The first production Helldiver broke up

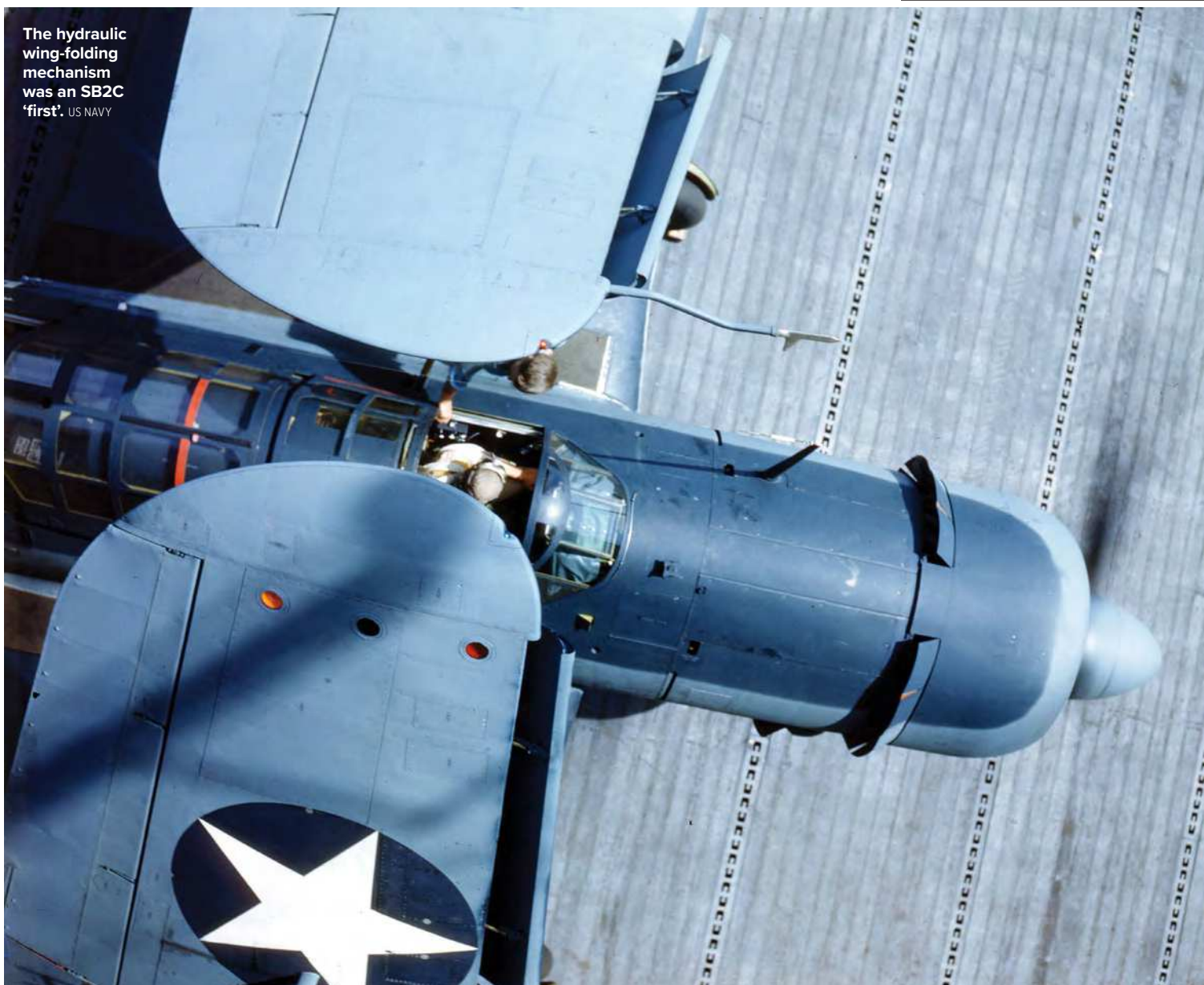
Now approaching definitive configuration, the initial prototype flight-tests the revised tail.

NATIONAL ARCHIVES AND RECORDS ADMINISTRATION



The bulky SB2C was quite an innovator as far as carrier aviation was concerned

The hydraulic wing-folding mechanism was an SB2C 'first'. US NAVY



The Curtiss SB2C Helldiver — known as the SBW in variants built by 'CanCar', and SBF if produced by Fairchild — was a conventional stressed-skin, two-seat monoplane built chiefly in light alloy. It did, however, contain numerous innovative features for an aircraft of its era.

While it had been common for US carrier aircraft to have fixed wings into the early 1940s, the Helldiver had not only wings that folded, but did so via a hydraulically powered mechanism. Hydraulics also powered the landing and dive flaps, the bomb doors and the rear 'turtledeck' that folded away around the rear cockpit to give a greater field of fire to the gunner. A sting-type arrester

hook was carried in the extreme tail, and hooks for catapult strops to enable tail-down catapult launching were fitted to all variants.

The aircraft was metal-skinned all over apart from the control surfaces, which were fabric-covered. Armament consisted of bombs carried within an internal bomb bay, which would be swung clear of the propeller disc on a crutch before release. Fixed forward-firing guns — initially Browning 0.50in machine guns and later 20mm cannon — were provided for the pilot and a twin flexible 0.30in gun in the rear cockpit. Later in World War Two, further weapons were added such as rocket projectiles carried on underwing mounts. The AN/APS-4 radar was included

DATAFILE // SPECIFICATIONS: SB2C-1C

POWERPLANT

One Wright R-2600-8 Twin Cyclone 14-cylinder air-cooled radial, 1,700hp at take-off

DIMENSIONS

Span:	49ft 8.5in (15.15m)
Length:	36ft 8in (11.17m)
Height:	13ft 1.5in (4.01m)

WEIGHTS

Empty:	10,114lb (4,588kg)
Loaded:	16,607lb (7,533kg)

PERFORMANCE

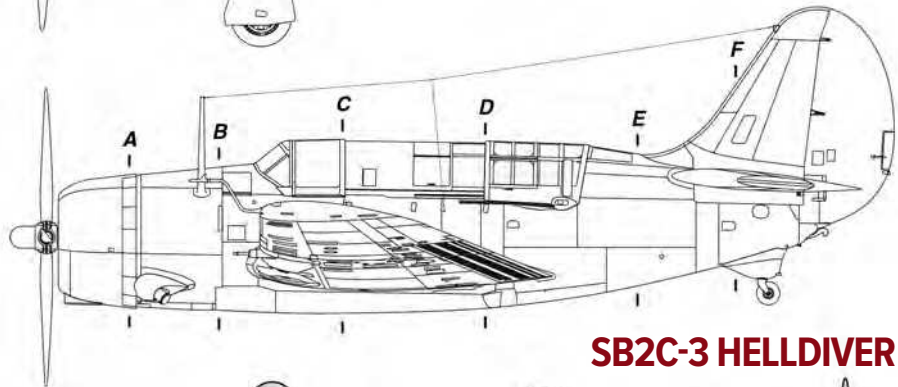
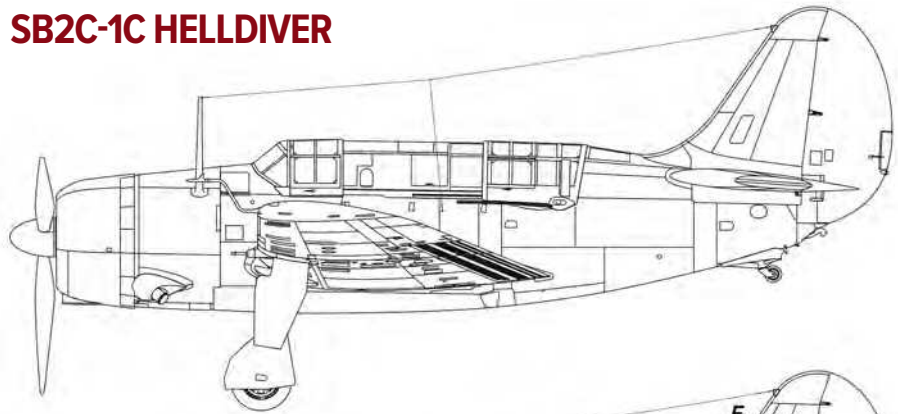
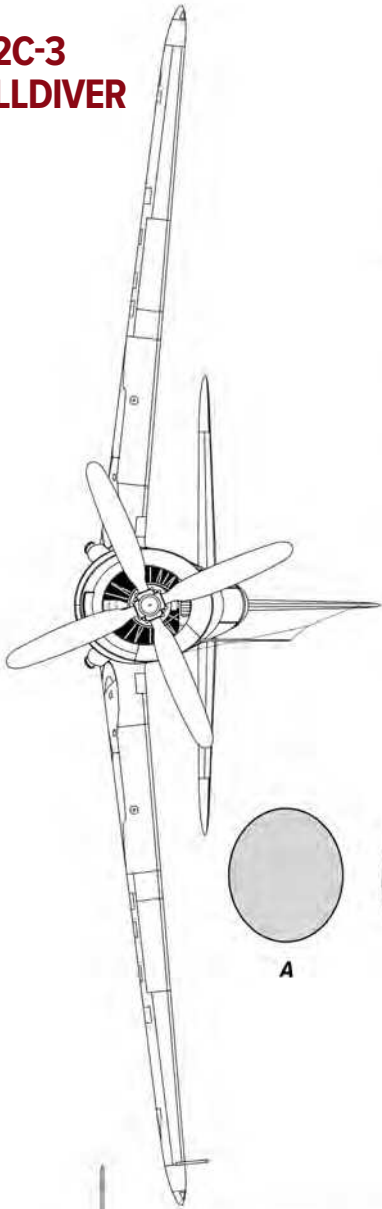
Speed:	273mph (439km/h) at sea level
Ceiling:	21,200ft (3,048m)
Endurance/range (dive-bombing condition):	1,375 miles (2,213km)
Payload:	2,000lb (907kg)

ARMAMENT

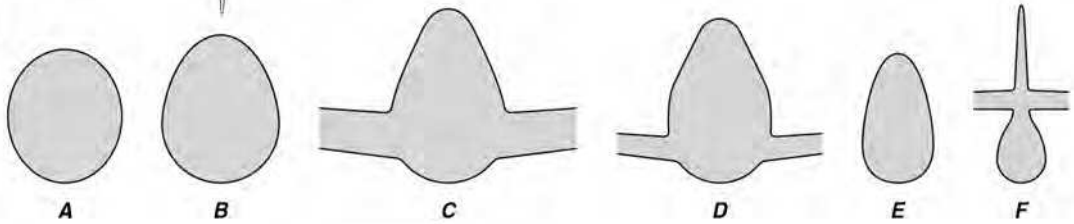
Two 20mm cannon (fixed), two 0.30in machine guns (flexible)

**SB2C-3
HELLDIVER**

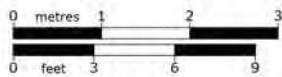
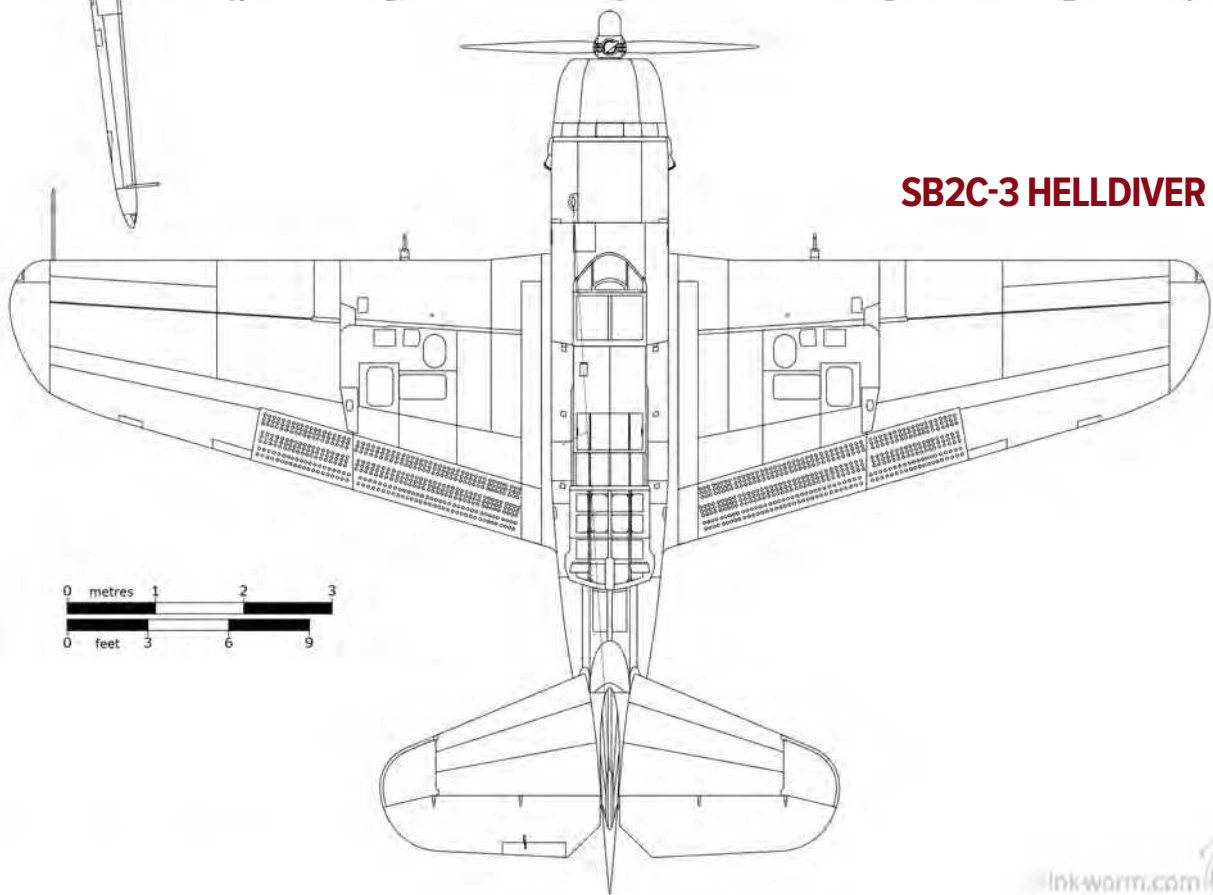
SB2C-1C HELLDIVER



SB2C-3 HELLDIVER



SB2C-3 HELLDIVER



inkworm.com



ABOVE: A 2,000lb 'blockbuster' bomb is wheeled towards the XSB2C-1, looking too large for the bomb bay. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION
RIGHT: The pilot's cockpit of an SB2C-5 model. US NAVY



internally, until the SB2C-5 model where it was deleted, thanks to the availability of the ASH radar pod that could be carried externally.

The Wright R-2600 Twin Cyclone air-cooled radial engine drove a Curtiss Electric constant-speed propeller, a three-blade unit on early marks and four-blade from the SB2C-3 onward. The Helldiver was particularly large for a single-

enged aeroplane, with a loaded weight that could exceed 16,000lb, making it the heaviest single-engined carrier type of the war. Its performance was a significant improvement on that of the SBD, but still relatively uncompetitive for attack aircraft by the standards of 1944-45. It remained survivable in combat largely thanks to the weakened state of the Japanese air arms and heavy fighter escorts.

DATAFILE



The sole XSB2C-2 at Anacostia on 29 September 1942. US NAVY

A ONE-OFF: HELLDIVER ON FLOATS

A single Helldiver, SB2C-1 BuNo 00005, was converted into a floatplane at NAS Anacostia during the second half of 1942 and as such redesignated as the XSB2C-2. An order was placed for, according to an official US Navy report, 294 examples of the production SB2C-2; however, the derivative was never to be built in

series. Not only was the extra weight a burden on outright performance, as flight trials from early 1943 discovered, but the requirement no longer existed, the combat seaplane concept having passed out of favour. The machines on order were completed as SB2C-4s instead. **Ben Dunnell**

Once the SB2C got over its teething troubles, it became a useful asset in the Pacific

An SB2C's pilot and gunner dressed in flight gear, almost ready to go aloft. US NAVY



In the US Navy's urgency to bring the Helldiver into service, it was arguably pushed into an operational unit too soon, setting the whole programme back and damaging the aircraft's reputation. The lead ship in a new class of carriers, USS *Essex*, was forming Carrier Air Group (CAG) 9 in December 1942, and early-production Helldivers were quickly delivered to scouting squadron VS-9 and bombing squadron VB-9. Before the end

of the month, VB-9 had lost its first aircraft. The crash was put down to pilot unfamiliarity, but the CAG was soon plagued with hydraulic problems and other snags. Worse was to come in January when VS-9's executive officer John Yoho was killed in an unexplained crash during a dive. Within a month, the loss of BuNo 00001 had thrown the programme into chaos. *Essex's* commanding officer, Capt 'Jocko' Clark, refused to take the Helldiver into combat and went

so far as to call for the aircraft to be cancelled.

There was no alternative, however. After the false start with CAG-9, responsibility for taking the Helldiver to war passed to a new air group. CAG-17 had been formed on 1 January 1943 for the *Essex*-class carrier USS *Bunker Hill*. As was the standard arrangement at the time, the air group would include two squadrons equipped with dive-bombers, a scouting squadron, VS-17, and a bombing squadron,

VB-17. For their early existence, these units were equipped with North American SNJ trainers and Douglas SBD dive-bombers, but a month later 36 SB2C-1s arrived at NAS Norfolk, assigned to CAG-17. In recognition of the fact that there was essentially no longer any difference between the work of the scouting and bomber squadrons, on 1 July 1943 VB-17 and VS-17 merged to form a dive-bomber squadron under the command of Lt Cdr J. E. 'Moe' Vose. ➤



Flight deck crewmen rush to the aid of an SB2C-1 which has landed on the USS *Yorktown* with a broken tailwheel during carrier qualification flying in May 1943. US NAVY

Mere days later, the reorganised unit embarked on *Bunker Hill* in time for a shakedown cruise to Trinidad (the carrier's fighter and torpedo squadrons had already embarked, on 28 June), departing Norfolk on 13 July. Training operations were intensive, carried out in the Gulf of Paria away from the threat of U-boats.

Numerous problems were encountered and many aircraft damaged, the most common issue being pilots striking the deck with the tail too hard and knocking off the tailwheel. The landing signal officer, Lt Shailer Cummings, was instructed to wave off any aircraft whose approach was not perfect. After a sequence of wave-offs, VB-17's executive officer, Lt Cdr Geoffrey P. 'Jeff' Norman, complained to Cummings and insisted he simply line up the bomber, while Norman would "take care of the landing." Norman's very next landing was captured in prose by the journalist Robert Olds, then 'embedded' with CAG-17, and on camera by a navy photographer. As described by Olds, "Jeff cut the engine. On the first bounce the tail wheel was buried into the fuselage. On the second violent thump the arresting hook caught one of the wires of the arresting gear. With a jerk the entire rear end of the plane came off. Looking quite ridiculous, the rest of the plane skidded down the deck. A tense

moment was broken when Dave Garver, riding in the rear seat, turned around and surveyed the situation. Extreme nonchalance was written all over his face — as though this were a very common occurrence. Everyone roared."



Concerns remained about the new dive-bomber. After VB-17's fraught work-up, it was suggested that it exchange its Helldivers for SBDs, but Vose was adamant that 'Bombing 17' would be the unit to take the new machine into combat. Unlike 'Jocko' Clark of the *Yorktown*, Capt John J. Ballentine, *Bunker Hill's* commanding officer, was a believer in the Helldiver and

was happy to support Vose in persisting with the type. Even so, it was conditional on the many modifications and improvements highlighted during training being applied to the squadron's aircraft. Accidents continued, especially with night flying and deck-landing training, but the crews were gradually getting on top of the 'Beast's' foibles.

The variant VB-17 went to war with was the SB2C-1C, the 'Dash 1' model with the first two modification programmes implemented. Many more enhancements were still to come, but for now the Helldiver was finally considered fit to face the enemy.

Bunker Hill arrived back at Norfolk on 10 August 1943, and CAG-17 returned briefly to shore-based status while ship and squadrons made their final preparations. "Nothing had been easy for Bombing 17 to date", wrote Olds. "Simplicity was just not on the cards when one attempted to blend a new squadron with a new plane. Not only did the 'guinea pigs' have to master the Helldiver for conventional operations such as formation flying, dive bombing, carrier landings and takeoffs, but they had experimented with the bomber under all kinds of conditions."

Early the following month, *Bunker Hill* arrived at Hawaii.



About to land on USS *Bunker Hill* during 1943, an SB2C-1 of VB-17 receives a very last-minute wave-off. US NAVY

To the disappointment of all on board, VF-17 with its Vought F4U Corsairs disembarked to become shore-based, replaced by VF-18 with Grumman F6F Hellcats. Experiments into the operation of the Helldiver were still under way, and losses inevitably occurring. At Pearl Harbor, the first night deck landings led to the loss of one aircraft when it hit the barrier, and another when it drifted and ran into the starboard catwalk before falling into the sea. The pilot survived, but a sailor unlucky enough to be in the Helldiver's path was killed. In October, just weeks before the Helldiver was expected to make its combat debut, trials with catapult launching led to the loss of one aircraft and the death of a gunner, when the aeroplane climbed steeply after launch and stalled in.

VB-17 was mainly made up of new personnel but a core of experienced aircrew, collectively

veterans of "almost every major carrier action since the war's start" according to Olds, helped to cement the unit. An unnamed officer was reported as saying, "We

were proud of the fact that our ship, with the new Helldivers aboard, would be the most powerful carrier in the world. We knew that our planes could carry twice the destruction to the enemy that any other dive bombing squadron out there could."

Of Capt Ballentine, it was said, "For every problem that rose to beset the squadron he had a sympathetic ear, and his determination to take the Helldiver to sea kept us going through many a trying time". Indeed, it is telling that ongoing problems with the Corsair led to *Bunker Hill's* fighter squadron being replaced by a Hellcat unit before it went into action, but the Helldivers remained in the order of battle. Prior to its maiden dive-bombing operation, VB-17 was eased in with daily anti-submarine patrols. *Bunker Hill* joined Task Group (TG) 50.3, the

southern group of fast carrier Task Force (TF) 50.

The crews of VB-17 had been promised "something easy" for the combat debut of both the squadron and its aircraft, but were disquieted to learn that the target would be Rabaul on New Britain in the Solomon Islands chain. This was one of the most heavily fought-over locations in the Pacific, which Admiral William Halsey, commander of forces in the South Pacific area, had recently referred to as "[Hideki] Tojo's strongest South Pacific base". The reason for the 'green' task group being thrown into such a hot target was the American amphibious landings on Bougainville, which had to be protected from the Imperial Japanese Navy (IJN)'s attentions at all costs.

The previous week, aircraft from USS *Saratoga* had stirred up the hornet's nest with a raid that sank several Japanese

warships, but drew significant reinforcements to the port's four defensive airfields. Contemporary US Navy estimates put the number of fighters at around 150,

while the harbour was heavily protected by anti-aircraft emplacements. There were also large numbers of bombers that would doubtless be searching for the American force.

Co-ordination between the Helldivers and the accompanying torpedo squadrons was paramount, so the ships' anti-aircraft defences were divided and put under as much pressure as possible. While the navy's dive-bombers had typically been the most destructive part of the aerial armoury, this had come about through the total inadequacy of the service's torpedo-bombers and aerial torpedoes than as a result of any deliberate planning. The introduction of both the Avenger and better torpedoes threw the ship-killing role back towards the torpedo squadrons, meaning the Helldivers' chief task would be suppressing

“Co-ordination between the SB2Cs and torpedo units was paramount”

DATAFILE

THE LAND-BASED SHRIKE



A-25A serial 42-80184 with bomb bay doors open. USAF

For all the Helldiver's difficulties, its rival for the US Navy contract, the Brewster SB2A, never made it into front-line service. The SB2C's successes in the Pacific, however, bely the fact that certain variants failed completely, and non-US customers of the type declined to put it into service during the war.

The success of the Junkers Ju 87 'Stuka' in 1939-40 caused the US Army Air Corps to wake up to the tactical possibilities dive-bombing offered, long promoted by the US Navy. As the army had no dive-bomber types of its own in development, it turned to those already in the works for the navy. At the end of 1940, the AAC ordered 100 Helldivers, designating the type as the A-25 Shrike.

As the war in Europe progressed and Axis forces advanced, everywhere supported by the ubiquitous Ju 87, the AAC increased its orders until, by the time of the Japanese attacks on Pearl Harbor, 3,000 were on Curtiss's books. By this time, the Helldiver programme was in trouble, and the Shrike itself was not helped by the army adding as many of its own requests for modifications as the navy, until what had been intended as a basic de-navalisation of the SB2C was now a distinct type in its own right. Armour plate was added, as were larger wheels, a different gunsight and tailwheel. The complication increased when the Royal Australian Air Force requested 150 Shrikes under Lend-Lease, with its own equipment specifications.

The initial batch of pre-production Shrikes proceeded slowly, as the navy had priority and the army was beginning to get cold feet about the concept. The last of nine initial series aircraft only arrived for test in March 1943. By this time, the Army Air Forces — as the Army Air Corps had become — were convinced that dive-bombers like the A-25 were obsolete, and was pursuing fighter-bombers for the attack role. None went into front-line service with the AAF.

Australia was still pushing for its Shrikes. Unfortunately, politics intervened and after 10 were sent, AAF Gen George Kenney put a stop to further deliveries. Trials could not even be carried out at first due to a lack of spares. Some test-flying eventually took place, but by then it was academic.



Just 10 Shrikes made it to the Royal Australian Air Force; A69-29 was not delivered despite being photographed in RAAF colours. US NAVY



After 4 July 1944's strikes on Chichijima, SB2C-1s overfly Task Force 58's carriers while returning to USS *Yorktown*. US NAVY

anti-aircraft defences to give the torpedo bombers the best chance to deliver their 'fish' unhindered.

The Helldivers would not be alone, however. It was planned that the Hellcat fighter escort would accompany the bombers in the dive, strafing as they went — presuming the force had not already been bounced by enemy fighters. The plan was for 24 of *Bunker Hill*'s 36 Helldivers to go in on the first strike. Even with all the work during development and by VB-17 to prepare the Helldiver for combat, problems immediately arose on the day of the attack, 11 November. The aircraft of Lt R. L. Gunville was unable to gain altitude after take-off and ditched. Gunville and his gunner E. S. Burrow got out before the SB2C sank, but the pilot was unable to stay afloat and drowned.

Shortly after the strike force sighted the target, enemy fighters were reported. At 09.00hrs, 'Moe' Vose received the order to attack a group of cruisers from the air group commander. Vose directed his deputy, 'Jeff' Norman, to attack one with his section, while Vose aimed at another. Other attacks were directed at more cruisers and destroyers, which were all manoeuvring fiercely to avoid the oncoming strikes. The rookie squadron claimed multiple direct hits and near-misses in a successful day for the US Navy, despite cloud over the target preventing success on the level *Saratoga*'s aircraft had enjoyed. One cruiser was

torpedoed, a destroyer sunk by a bomb and several more destroyers severely damaged, to add to the six cruisers damaged during earlier attacks. The Helldivers claimed three Mitsubishi A6M Zero fighters shot down.

most escaped to make it back to the carrier. One aircraft, that of Lt Robert Wood, crashed on deck after having been badly shot up, while 'Flip' Gerner ditched his damaged Helldiver by a destroyer. A second strike was being readied when Japanese

“ VB-17's role in the Rabaul attacks augured well for the Helldiver ”

Most importantly, the IJN force had been rendered unable to intervene in the American landings. The Helldivers got away relatively lightly. Although several were attacked by fighters,

aircraft from Rabaul found the task group and the Helldivers were held on deck, some of the bombers' gunners staying at their posts and adding to the carrier's anti-aircraft fire.



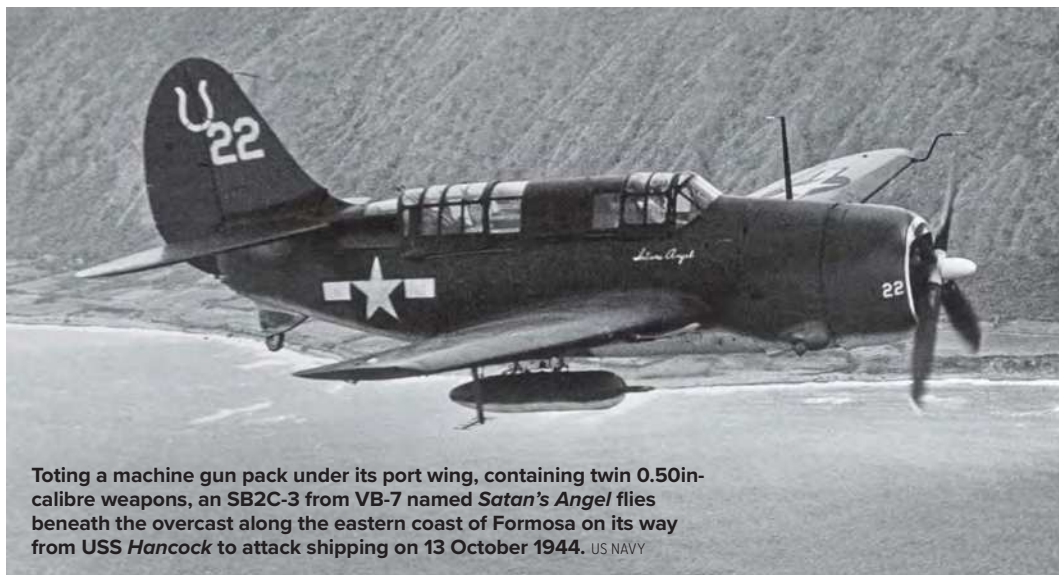
Having carried out strikes on Japanese shipping in the China Sea, circa mid-January 1945, a formation of SB2C-3s banks over USS *Hornet* prior to landing. US NAVY

At the time the raid arrived, three SB2Cs were airborne on anti-submarine duties, and Ensign W. H. Harris claimed an Aichi D3A 'Val' shot down after the dive-bomber strayed into his patrol area. Unfortunately, Ensign Thompson's Helldiver never returned to *Bunker Hill*, probably shot down by the strike force's escort.

The November 1943 attacks on Rabaul were an unmitigated success, and 'Bombing 17's' role in them augured well for the Helldiver's future career. The remaining Japanese naval forces in the area were withdrawn to the north, and the invasion force was able to establish a beach-head on Bougainville.

VB-17 was in action again almost immediately, with attacks on Betio Island, Tarawa Atoll, as part of the raids on the Gilbert Islands. The intention was to soften up Japanese defences for two days before the US Marine Corps went ashore. The first raid would mainly target coastal artillery and anti-aircraft defences in the early morning, making the approach in darkness. VB-17 found the island thanks to the flashes of Japanese guns that were already in action when they arrived. Despite the presence of an airfield on the island, the Helldivers were on no account to hit it, even though it could be used by defending fighters. The marines hoped to capture it intact.

Despite heavy anti-aircraft fire, none of the SB2Cs received anything more than light damage. Over the following days, it became harder to identify targets due to the pall of smoke and dust hanging over the island from the successive onslaughts. While the defences had clearly taken damage, on 'D-Day' the marines faced more concerted opposition than US forces had so far encountered in their advance. VB-17 continued its attacks in support of the landings, enthusiastically strafing in addition to bombing. No Helldivers were lost, but 17 aircraft needed repairs to one degree or another. Once the island had been taken, the carrier group moved to Makin Island, the northernmost in the chain, to provide air cover for Seabees building an airstrip.



Toting a machine gun pack under its port wing, containing twin 0.50in-calibre weapons, an SB2C-3 from VB-7 named *Satan's Angel* flies beneath the overcast along the eastern coast of Formosa on its way from USS *Hancock* to attack shipping on 13 October 1944. US NAVY

VB-17 returned to its regular anti-submarine patrols.

Once the Gilberts had been recovered, the carrier group moved south-east to Nauru, which had provided significant mineral resources for the Japanese war effort. The tiny island would not be invaded, as its isolated position made it of little strategic value in its own right, but merely attacked from the air to deny its airfields

to Japanese aircraft. During the first attack, Ensign E. D. 'Willie' Williams was shot down by ground fire, and he and his gunner killed. Afterwards, *Bunker Hill* withdrew, and the crews regrouped at Espiritu Santo on 12 December. By now, VB-17 numbered 33 aircraft. *Bunker Hill* returned to action in a couple of weeks' time, with a transfer to the Third Fleet and TG 37.2 for raids on the port of

Kavieng, New Ireland, alongside the light fleet carrier *Monterey*. On Christmas morning, VB-17 arrived over Kavieng at dawn with total surprise, no fighters to greet them and little anti-aircraft fire. One transport ship was sunk and another damaged, along with two minesweepers. In return, attacking Japanese torpedo-bombers interrupted VB-17 just as the unit was sitting down to Christmas dinner.

A second raid on New Year's Day 1944 saw the Helldivers contributing to severe damage to the light cruiser *Noshiro*, though the defence was stiffer this time and one of the bombers was shot down. Following a third raid three days later, Kavieng was bypassed as the US advance moved north.

The next major target was the stronghold of Truk, 700 miles north of Kavieng. This atoll had been the Japanese Combined Fleet's main anchorage for Pacific operations earlier in the war, and was a convenient location for launching a response to attacks on Japanese-held territory at New Guinea to the east, the Marshall Islands to the west or the Solomon Islands to the south. It was a sign of the growing strength and confidence of the US Navy that Rear Admiral Marc Mitscher considered it was ripe for an assault only months after most of his newest carriers had first met the enemy.

The Fifth Fleet's fast carrier force, TF 58, hastily assembled at a recently captured port in the Marshall Islands in early February and sped north for Truk. This included *Bunker*

DATAFILE

BRITAIN AND THE 'BEAST'

The Fleet Air Arm expressed early interest in the Helldiver. Like the US Navy, the Royal Navy believed in dive-bombing as part of its tactics against enemy battle fleets and the advent of the Helldiver was an appealing prospect, especially when it was considered that the type would be able to act in the torpedo-bombing role as well.

The FAA was promised a supply of Helldivers from 'CanCar', and the Admiralty kept a close eye on developments in the US. The crash of the first production aircraft and the huge list of modifications required as a result slowed matters considerably. Furthermore, the Helldiver's ever-expanding weight had a deleterious effect on the aircraft's take-off run. This was no insignificant matter given how the RN's carriers were smaller than those of the US Navy, and the type could not be operated from escort carriers at all. To complicate matters further, the folded height of the Helldiver was such that it could only be accommodated in the RN fleet carriers with the tallest hangars, and even then would only fit between deck beams.

The Ministry of Aircraft Production was confused as to what role the Helldiver would fulfil in the RN, and by summer 1943 it was clear that it would be incapable of operating from smaller carriers. The British Air Commission informed the MAP, "It is doubtful whether the first SBW will reach UK before February 1944, and even then, this aircraft cannot be considered an operational aircraft as interchangeability is non-existent."

Deliveries had at least begun in a paltry fashion, and 1820 Squadron was formed in September 1944. By June that year, the

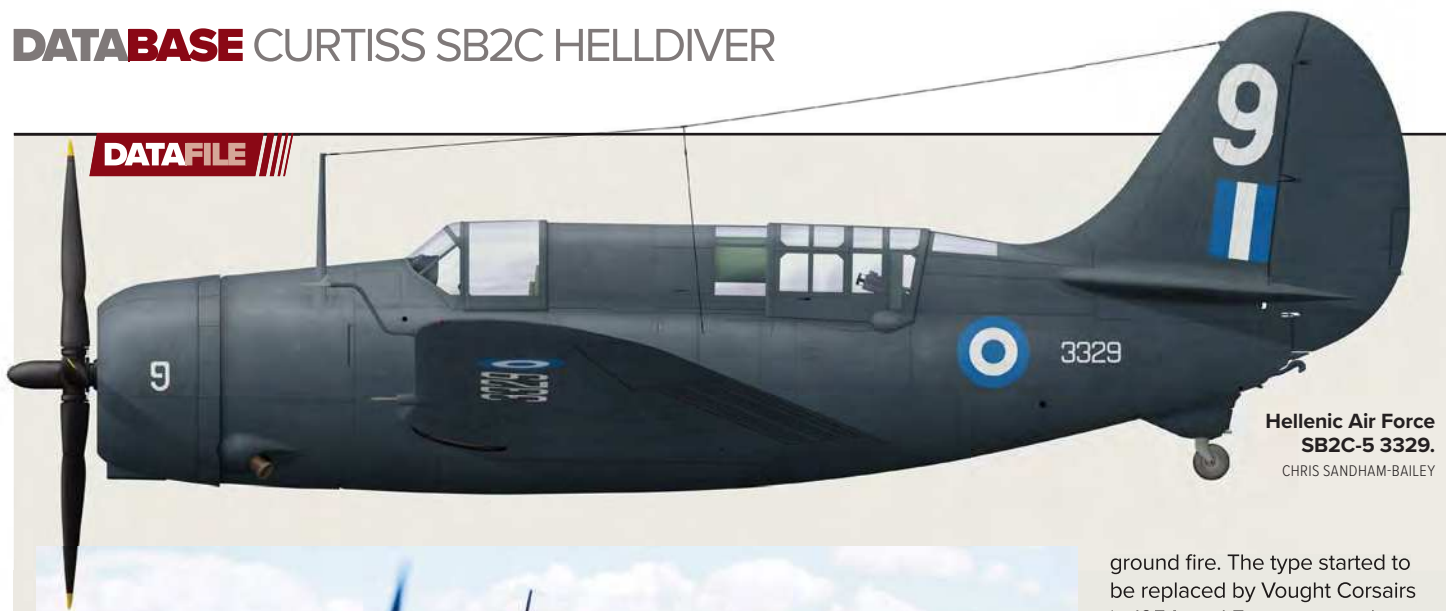


Taxiing, probably at Hatston, Orkney, in late 1944 is Helldiver I JW107 from 1820 Squadron. VIA P. H. T. GREEN

Aeroplane and Armament Experimental Establishment had been able to carry out trials, but it was clear that the Helldiver was still far from ready for service. After 26 had been delivered, it was apparent that no more would be forthcoming, and it was not clear that the RN wanted them.

At Hatston, 1820 Squadron attempted to work up while respecting numerous restrictions on flying, but by the end of the year the Admiralty had given orders that it was to be disbanded. The squadron was loaned to the Home Fleet in December with instructions that it "May be used operationally despite all its disadvantages until the end of the German War". The chief naval representative at MAP said, "I think that, provided a sufficiently important operation is envisaged, the use of the aircraft is fully justified". No such operation was necessary, and 1820 Squadron was disbanded in May 1945 without having seen action.

DATAFILE 



**Hellenic Air Force
SB2C-5 3329.**
CHRIS SANDHAM-BAILEY



Rocket-armed Portuguese Air Force SB2C-5 serial AS-19 taxiing at Montijo in 1957, with a PV-2 Harpoon behind. VIA FILIPE SILVA

ground fire. The type started to be replaced by Vought Corsairs in 1954, and France ceased military operations when Indochina — now Vietnam — was partitioned. Retirement of the last Helldivers, by now in second-line roles, was in September 1958.

Italy

Italy received 24 SB2C-5s in 1950, to be used strictly in the anti-submarine role by the country's air force, the Aeronautica Militare. Due to restrictions placed on the former Axis nation, it was mandated that the bomb doors be welded shut! Entering service with the 86° Gruppo Antisom (anti-submarine squadron) at Grottaglie, they adopted the S2C-5 designation, deleting the 'B' for bomber. Once attitudes to Italy had thawed somewhat, the Helldivers were allowed to join NATO exercises.

Sixteen more were obtained in early 1952, allowing the Catania-based 87° Gruppo Antisom to briefly re-equip. As it converted to the Lockheed PV-2 Harpoon from February 1953, the latter's S2C-5s transferred to the 86°

FOREIGN HELLDIVERS

Greece

The large numbers of surplus Helldivers found a welcoming home in numerous small air arms building up their strength after the Second World War. These included Greece, which acquired 42 SB2C-5s for the Hellenic Air Force in 1949 and immediately put its aircraft into action during that country's civil war, in the tactical reconnaissance and strike role with 336 Mira at Larissa. Retirement began in 1953, but a few soldiered on as recce platforms until 1957.

France

France also purchased Helldivers in 1949, to equip its burgeoning naval air arm, the Aéronautique Navale, and replace obsolete SBDs which had been worn out in operations against the communist insurgency in Indochina. The French SB2C-5s, 100 of them in all — 10 others being acquired for spares use — were operated by three squadrons, Flottilles 3F, 4F and 9F. Of those, 3F was the main user, from 1950-54, closely followed by 9F from 1951-53.

Assignment to 4F was brief before re-equipment with Avengers in 1951.

The French Helldivers flew from three carriers, the *Arromanches*, *Bois-Belleau* and *La Fayette*. 3F and 9F undertook combat operations in 1951-52, mostly in the army support role. They proved effective against Viet Minh columns on the Indochina coast, with dive-bombing, rocket attacks, strafing and use of napalm. Later they were employed in interdicting supply routes, successfully, though not without losses to



Flottille 3F SB2Cs on the deck of the French carrier *Arromanches* in the Gulf of Tonkin during November 1953, with F6F Hellcats at right. US NAVY



The Italian Air Force's Helldivers were given the S2C-5 designation, this one hailing from the 86° Gruppo Antisom at Grottaglie. ALAMY

Gruppo, and by the start of 1954 the whole fleet was stationed at Grottaglie. With Harpoons and then Grumman S2F Trackers entering service as anti-submarine platforms, the unit's Helldivers took on target-towing duties, which they performed up to retirement in early 1959.

In addition, two Helldivers were the first aircraft to equip Italy's post-war navy, the Marina Militare. A small number of naval pilots converted to type in the USA, and the aircraft were transported to the Mediterranean aboard the USS *Midway* in December 1952, flying off to Naples-Capodichino airfield. They never flew again with the navy, being transferred to the air force during August 1953.

Portugal

The Portuguese Navy was allocated SB2C-5s through the US Military Assistance Program in 1950, receiving 24 from November 1951 onwards. Starting operations the following year, they were used in the anti-submarine role by the Esquadilha Operativa Anti Submarina (Anti-Submarine Operational Squadron), stationed at Aveiro. After just six months of activity, the Helldivers were transferred to the newly formed Portuguese Air Force on 1 July 1952 when the naval air arm ceased to exist. The existing examples moved to Montijo by the year's end, and all 24 had arrived as of 1955, split between the two bases. But already the PV-2 Harpoon was rendering the SB2C obsolete, the Curtiss machines being put to second-line tasks. Retirement of the last appears to have taken place in December 1958.

Thailand

The last country to receive Helldivers was Thailand, which was supplied with six SB2C-5s for the Royal Thai Air Force in 1951. They were operated in the attack role against communist guerrillas until the type was retired in 1957.

Hill with VB-17, now lacking 'Moe' Vose who had been posted home to take up a role with BuAer. 'Jeff' Norman took over.

Truk's ideal location had been mitigated somewhat by the US launching simultaneous attacks on the areas guarded by the anchorage — the fleet could not be in two places at once, never mind three — but Mitscher considered that a raid on Truk at the same time as landings in the western Marshall Islands was worthwhile to tie down the fleet properly. In fact, on learning of the approach of the US force, Admiral Koga withdrew the majority of the Combined Fleet to Palau, leaving only two light cruisers, eight destroyers and around 50 support vessels at the mercy of the five fleet carriers, four light carriers and their 500 aircraft.

The raid on Truk marked a shift in tactics from the US Navy. Hitherto, the 'hit-and-run' attack had been favoured, minimising the risk of carrier groups to land-based aircraft. At Truk, Mitscher elected to keep his carriers on station for days at a time, helping form the 'power projection' model of strike carrier operations that remains in favour today.

A huge fighter sweep preceded the main strikes, eroding the Japanese fighter and anti-aircraft defences, and then the bombers and torpedo aircraft got to work on the ships. Many were hit in the lagoon, others as they tried to escape. The light cruiser *Naka* made it 40 miles to the west before Helldivers and Avengers from *Bunker Hill* and *Cowpens* found it and attacked with bombs and torpedoes until it broke in two and sank. A group of vessels which included the light cruiser *Katori* was also located while fleeing, and hit hard. The cruiser was only saved by Mitscher calling off the strike in favour of a surface engagement. VB-17 was disappointed not to make certain of even more ships, and its combat report was said to state that the Helldivers had "jettisoned their bomb loads on a large school of fish suspected of having Japanese sympathies."

At the end of the raids, the defenders had lost two light cruisers, four destroyers,

three auxiliary cruisers, 19 transports, one merchantman, two submarine tenders, five tankers, two submarine chasers, one auxiliary minesweeper and a motor torpedo boat, a score VB-17 contributed to heavily. More importantly, Japanese supply lines had been greatly complicated. As with Kavieng, Truk — now posing little threat to the Allied advance — was bypassed.

Advancing on Japan

While VB-17 was proving the Helldiver in combat, other front-line units were finally preparing to join it in the fray. VB-8 deployed aboard *Intrepid* for training flights in late 1943 and early 1944, transferring to *Bunker Hill* to replace VB-17 at the end of its tour in March. Helldivers would not grace the air group of another carrier in an operational role until VB-14 aboard *Wasp*

“ Only the US Navy's large fleet carriers embarked Helldivers ”

joined the Marshalls campaign in April 1944.

The US Navy's carrier groups had made astonishing progress in the early months of 1944, and their advance had taken them as far as Tinian in the Marianas by the end of February. The Marianas themselves, on the eastern edge of the Philippine Sea, were the next key battleground, as they could potentially provide a base for long-range bombers to strike at the Japanese home islands.

There were now four carrier task groups within Task Force 58, each with one or two fleet carriers and two light carriers. Each of the carrier task groups included a complement of SB2Cs apart from 58.3, where *Lexington* and *Enterprise* were still equipped with the SBD. After *Bunker Hill* had for so long been the only carrier in operational service in the Pacific

with Helldivers embarked, it was now joined by four more with the type: in 58.1, *Hornet* and *Yorktown*, in 58.2 *Bunker Hill* and *Wasp*, and in 58.4 *Essex*, by herself due to *Intrepid* suffering a torpedo strike during an earlier sortie. That meant a total of 174 of the newer dive-bombers were in the force.

Only the large fleet carriers embarked Helldivers. The smaller Independence-class light carriers, based on light cruiser hulls, were too short for the dive-bomber to safely operate with their 600ft flight decks. This was demonstrated in dramatic fashion during the coming operations.

The IJN was determined to oppose the landings, realising this might be the last chance to force an engagement that could turn the war back in Japan's favour. What resulted was the largest carrier battle of the war and saw the end to the IJN's carriers as a viable force.

Although opportunistic raids had been carried out against Guam, Saipan and Tinian at the end of February, the invasion force was not ready to commence operations until May, and it was 11 June before TF 58 repeated its earlier attacks on the three islands, focusing most heavily on Saipan. On the 13th, four Helldivers which were engaged in a long-range search for Japanese warships ran low on fuel and had to put down on the light carrier *Bataan*. Three landed successfully, but the last missed the wires and bounced over the barrier, destroying all four machines. Mitscher detached TGs 58.1 and 58.4 to attack the Bonin Islands on 15 June. Several Helldivers were shot down over Iwo Jima and another crashed on landing.

A large group of Japanese ships was sighted that afternoon in the San Bernardino Strait in the Philippines, and another force including the huge battleships *Yamato* and *Musashi* approaching from New Guinea. From the 18th, both sides despatched scouting forces, while TF 58 continued to send out raids against the airfields and artillery positions on Saipan. The Japanese force located TF 58 early the following day and Admiral Ozawa launched



The Iwo Jima invasion fleet provides an impressive backdrop to SB2C-4s which have launched from USS *Yorktown*, en route to bomb targets on 22 February 1945. US NAVY

326 aircraft in a series of strikes, but despite having the critical advantage of locating the enemy first, the following battle turned into a rout, dubbed by the US Navy as the 'Great Marianas Turkey Shoot'.

As well as being the first to pinpoint the enemy forces, the wind was also in Ozawa's favour — TF 58 had to turn away from the Japanese ships to launch aircraft, opening the distance. When Mitscher finally located Ozawa's carriers on 20 June, the range was at the extreme end of what the American aeroplanes could manage. He ordered a strike anyway, with 226 aircraft launching, 51 of them Helldivers. A second wave was readied, but scrubbed as daylight was running out. SB2Cs from the *Wasp* were drawn off course investigating spurious sightings and, already short on fuel, had little time to look for the Japanese fleet. When they found a group of Ozawa's tankers, the Helldivers' leader decided it was better to attack them than nothing. Two of the five eventually sank, while a third was left heavily damaged.

Ozawa's carriers were around 35 miles to the west, and the remaining aircraft from TF 58 located them in the last of the day's light. Machines from *Hornet* and *Yorktown*, plus *Bataan*, pasted a rapidly manoeuvring *Zuikaku* with bombs, one hit causing a

serious aviation fuel fire, and it was almost abandoned before its crew got the situation under control. Helldivers from *Bunker Hill* attacked *Chiyoda*, all narrowly missing, though Avengers scored two hits with bombs. While the four carriers that had seen bomb hits would all survive, the IJN could not recover from the loss of aircraft and experienced aviators, and its carriers were never again a threat to US Navy operations.

The strike force still had to make it back to TF 58 and land, however, in the dark and with

Philippine Sea still represented an unqualified American victory.

With the advantage now to the US in the Marianas, the Allies debated the strategy for the next phase of the Pacific war. Opinions were divided between invasion of Formosa with a blockade of the Philippines, and invasion of the Philippines themselves. Over the summer of 1944, the US Third Fleet under Admiral Halsey carried out a number of opportunistic carrier raids on the islands, meeting with little resistance and leading Halsey to throw his

“ Helldivers were vital in dividing and degrading the defences ”

fuel running low. Numerous accidents took place as pilots, desperate to get their aircraft down on the last drops of gas, ignored wave-offs. More than a third of the aircraft launched were lost. Indeed, 32, over half of the Helldivers, were forced to ditch even before reaching a carrier deck, which did little to boost confidence in the still relatively new bomber. Eight more were lost over the target. Worst hit was VB-8 of *Bunker Hill*, which lost 11 of the 12 Helldivers it had sent out. Nevertheless, the Battle of the

weight behind the Philippine advance. An assault on Leyte was therefore planned for October, with the Seventh Fleet providing direct support to the amphibious forces and the Third Fleet (TF 38) covering the invasion from the IJN.

The IJN still had considerable strength, particularly in battleships, and formed a plan for Ozawa's remaining carriers, making up the southern force — but now with very few aircraft and aircrews — to sortie and lure American covering forces away, while two forces of big-

gun warships, the central and southern forces, would attack the amphibious landings. The plan almost caught the US Navy napping, as two of TF 38's task groups had withdrawn to refuel and reprovision when the attack came. Furthermore, the bluff almost worked.

What became known as the Battle of Leyte Gulf consisted of four separate but related actions. The first was the Battle of the Sibuyan Sea on 24 October when Admiral Kurita's central force, led by the super-battleship *Musashi*, made for the San Bernadino Strait, being spotted by a scout from *Intrepid*. Aircraft from *Enterprise*, *Franklin*, *Intrepid* and the light carrier *Cabot* launched, and *Enterprise's* VB-20 soon found Kurita's group, being surprised to find themselves under fire from 10

miles out with 'beehive' rounds fired from *Musashi's* huge main guns. Wave after wave of US Navy aircraft threw themselves at the battleship, which attracted the vast majority of the attacks. During the second, a flight of nine Helldivers off *Enterprise* scored four direct hits with 1,000lb armour-piercing bombs, while VB-15 from *Essex* attained up to six more. While they could not hope to sink the vessel, it was still possible to cause severe damage deep within its vitals. A third wave saw further hits from aircraft from *Enterprise* and *Franklin*. But the dive-bombers, in addition to causing damage in their own right, were also helping to facilitate the truly deadly torpedo attacks by Avengers. *Musashi* rolled over and sank in the evening, and *Kurita* was forced to withdraw.

However, Halsey overestimated the damage to Kurita's force, which despite the loss of *Musashi* was still powerful, with most of his ships relatively undamaged. When Ozawa's northern group was finally detected the next day, Halsey made to intercept, leaving the San Bernadino Strait undefended. Fortunately, Kurita failed to press his attack home. Meanwhile, the Battle of Cape Engaño saw 527 sorties launched by TF 38 throughout the day against Ozawa's carriers. Helldivers from *Franklin* and *Lexington* contributed to the

destruction of the carriers *Zuikaku*, *Chiyoda* and *Zuiho*. While the northern force had only a token fighter defence, anti-aircraft fire still inflicted casualties — during the third and fourth strikes, two Helldivers from *Franklin* were lost with their crews. The chief damage to TF 38, however, was done by kamikazes after the battle itself.

Reflecting both the kamikaze attacks in the Philippines campaign and the shrinking strength of the IJN, the formation of air groups was adjusted. Increased numbers of fighters were carried with corresponding reductions in the complement of torpedo and dive-bombers. By the campaigns which took place in the early part of 1945, only around 15 of each were embarked. Further improvements to the Helldiver were filtering through, and the SB2C-3 and -4 models were now the standard variants in service.

The battleship *Yamato* had escaped at Leyte Gulf, but fuel shortages restricted the IJN's operations, especially those involving heavy units. US preparations to land on Okinawa, the southernmost of the Japanese home island chain, compelled the IJN to bring it into action. With little fuel and no air support from carriers, the operation was dubbed a 'special attack' mission — a suicide run — accompanied by a light cruiser and eight destroyers. On 6 April, submarines reported



SB2Cs, with F4U Corsairs forward, aboard *USS Midway* as the carrier noses through scattered sea ice in March 1946 during her Arctic experimental cruise. US NAVY

that *Yamato* had sortied and Mitscher dispatched TF 58 to intercept. The battleship had derisory fighter cover until 10.00hrs and none thereafter. As a result, shadowers were able to continually report the ship's position and course with impunity. By 12.10 the outer escorts were under attack by dive and torpedo-bombers, and the destroyer *Asashimo* was sunk with all hands by aircraft including Helldivers from *Bunker Hill*. Just over 20 minutes later, the US aeroplanes came into sight from the battleship, and for the next two hours *Yamato* was subjected to an

aerial bombardment as heavy as any ever experienced.

Unsurprisingly it was torpedoes from Avengers that did the fatal damage, but Helldivers were vital in dividing and degrading the defences, and multiple hits by large bombs on *Yamato's* upperworks wrought much destruction. The Helldivers aimed at the bridge area, trying to destroy its command and control capability. They pressed their attacks home hard, releasing low to ensure the greatest number of hits but exposing themselves to thick anti-aircraft fire. Of 12 aircraft from *Essex* in the second

wave, five took damage, but several claimed direct hits.

Bomb and torpedo hits mounted, mostly on *Yamato*, but her escort had not gone unnoticed. The cruiser *Yahagi* took numerous hits and sank at 14.05. A quarter of an hour later *Yamato* was on her beam ends, and 10 minutes after that she virtually sank when a massive magazine explosion ripped the vessel apart. In addition, a cruiser and four destroyers were sunk. Only three destroyers of the entire force made it back to Japan, one so severely damaged that it was never repaired.

With the IJN effectively dealt with, the Helldiver was principally employed on shore strikes in support of ground forces for the rest of the Pacific war, now including some US Marine Corps squadrons. By June 1945, the definitive wartime model, the SB2C-5, was reaching squadrons. As with previous versions, huge orders had been placed — 3,730 were to be built, but the end of the war saw 2,500 of them cancelled.

The US Navy kept the SB2C in service post-war but dramatically drew down its operations. In line with the evolution of tactics, bombing squadrons became attack squadrons. The remaining Helldiver units continued training, but the Douglas AD Skyraider was on its way, and the last SB2C unit, VA-54, gave up its aircraft in June 1949.



A canary-yellow Helldiver belonging to the Naval Air Modification Unit at Johnsville, Pennsylvania. US NAVY

Some pilots thoroughly disliked the Helldiver, while others appreciated it a lot more

In their element, SB2C-5s from VA-1A roll into dives to support amphibious forces during a 1947 landing exercise. This attack squadron was assigned to Carrier Air Group 1 on the USS *Tarawa*. US NAVY



The Helldiver tended to divide opinion among those who flew and operated it. Indeed, there is probably no single view to be reached, as those who flew the early, rough-around-the-edges variants undoubtedly experienced more difficulties and fewer refinements than those who encountered the SB2C in its later marks. Cdr Charles Shuford told the dive-bomber expert Peter C. Smith, “As you know, many pilots did not like the SB2C and preferred the SBD. There were a lot of fatalities during training prior to entering combat. The electric prop wasn’t too popular and the hydraulic system was a plumber’s nightmare!” However, he continued, “I had good experiences myself.”

It was a different story with early aircraft. The commanding officer of NAS Norfolk could barely contain his annoyance when he reported to BuAer on service tests of the SB2C-1: “This accelerated Service Test has revealed entirely too many discrepancies in the production model of this airplane, and it is believed that a high percentage of these discrepancies are due to the use of materials of insufficient strength or inferior quality, installation, and inspection. Unless this condition is corrected prior to placing these airplanes in service it is felt that the maintenance problems to be overcome by operating personnel will be entirely too great and that the combat value of the airplane will be seriously reduced.”

Even into 1944 it was clear that the Helldiver was far from a well-sorted aircraft. While reports on service tests from the Aeroplane and Armament Experimental Establishment are usually bland and neutral, terms such as “objectionable” and “unpleasant” turn up with unexpected regularity when it comes to the SB2C.

“The amount of friction in the elevator control circuit became noticeable and was somewhat objectionable as it made the control too heavy in relation to stick movement and aircraft speed,” noted the anonymous test pilot, who added, “owing

The crew of this VB-15 SB2C-1C, which has recovered safely to USS *Essex* on 20 May 1944, was presumably grateful for the airframe's toughness. US NAVY



to the excessive friction in the aileron control circuit, the control column would not centralise after being displaced and it had to be moved about to find the trimmed position. The effectiveness of the ailerons varied with speed, being good at climbing speed and above, but poor on the glide."

Stability was a perennial issue for the Helldiver, and despite mammoth efforts to address it, the aircraft was often marginal in this regard. This became particularly disconcerting in the

“Terms like ‘objectionable’ and ‘unpleasant’ turn up”

dive. According to the A&AEE, "As speed was increased the rudder became very light. At a speed of about 270 mph with feet off the rudder bar and 300 mph ASI with normal footload the aircraft began to oscillate directionally when

disturbed by bumps, slight rudder displacement, or trimmer adjustment". The only way the pilot was able to damp out oscillation was to press his feet on the rudder bar until the movement had ceased. With the centre of gravity anywhere near

the aft limit, handling could be "unpleasant", and the machine overall "difficult and tiring to fly."

'Moe' Vose, skipper of the first squadron to take the Helldiver into combat, called it, "A good plane, a damn good plane." On the other hand, Fritz Armstrong, believed to be the last surviving Helldiver pilot, "Didn't like the plane, said it scared him badly", according to his stepson Matt Floyd, who added that Fritz, "Had friends die in training. Said he couldn't see anything, it was so big in front." **A**

DATAFILE



The sole airworthy Helldiver, SB2C-5 BuNo 83589/NX92879 is a jewel in the Commemorative Air Force's crown. KEY/STEVE FLETCHER

SB2C SURVIVORS

While single examples of the SB2C-5 are preserved in the Hellenic Air Force Museum at Tatoi and the Royal Thai Air Force Museum at Don Muang, it is naturally in the USA where the greatest concentration of Helldiver survivors is to be found. Foremost among them is another -5, BuNo 83589/NX92879 of the Houston-based Commemorative Air Force West Texas Wing, which is the only airworthy SB2C. The same variant is represented in the National Air and Space Museum's Steven F. Udvar-Hazy Center at Washington's Dulles Airport by BuNo 83479. Numerous other Helldivers are under restoration, among them the Fagen Fighters WWII Museum's -5 BuNo 83393, which should fly this summer at Granite Falls, Minnesota.

Ben Dunnell