

# DATA BASE

Development

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B 17A 316 was the last aircraft in the first batch supplied to the Imperial Ethiopian Air Force. CHRIS SANDHAM-BAILEY



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# SAAB 17

**WORDS:** JAN FORSGREN with KJELL NORDSTRÖM



A pair of B 17As operated by F 4 on patrol from Östersund. VIA SWEDISH AVIATION HISTORICAL SOCIETY

When, in 1936, the Swedish government initiated a rapid expansion of the Flygvapnet (Swedish Air Force), very few modern and combat-capable aircraft were in service. Plans were implemented for a total of 297 combat aircraft and 95 trainers to be acquired by 1943, with seven more wings to be established. However, Sweden lacked an indigenous aircraft manufacturing industry capable of designing and building modern types. Although licence agreements for Junkers Ju 86K medium bombers and Northrop 8A-1 light bombers had been signed, it was openly acknowledged that follow-on combat aircraft were to hail from the domestic industry.

By early 1937, companies including ASJA — which,

since 1931, had produced various types of aircraft at its Linköping factory such as the DH82A Tiger Moth, Focke-Wulf Fw 44J Stieglitz and Hawker Hart — as well as Bofors and engine manufacturer Nohab all showed interest in supplying the required aeroplanes. With ASJA and Bofors/Nohab being controlled by two highly

named Svenska Aeroplan AB, otherwise known as Saab, would handle actual production. In the event, ASJA was merged with Saab the following year and AFF disbanded.

Following a request from the Kungliga Flygförvaltningen (KFF, Royal Air Board), AFF proposed its F-1 reconnaissance aircraft. Designed by Alfred Gassner,

engineers to assist in the licence-production of the Northrop 8A-1 and North American NA-16-4M, put forward its own design, the L-10. On 11 November 1938, two prototypes were ordered. Initially, these were allotted the Flygvapnet designation P 7 (P being short for Prov, or test). Wind-tunnel trials both in Sweden and the USA showed promise, with the US engineers producing most of the basic design work. Swedish engineers, led by Frid Wänström and Bror Bjurströmmer, would handle the majority of the details. The L-10 was the first indigenous aircraft of all-metal monocoque construction. In addition to the two prototypes, a static test airframe (17105) was built.

The first prototype, the L-10-1 — designated P 7B — was to have a conventional wheel undercarriage, though it could be delivered with floats and a ski undercarriage as well. Power was to be provided by a Nohab-built 980hp My XXIV, a

## “ Getting the aeroplane into the air became a matter of the utmost urgency ”

competitive industrialists, Marcus Wallenberg and Axel Wenner-Gren, the solution was to form a holding company, AB Förenade Flygverkstäder (AFF, United Aeroplane Workshops Ltd) on 31 March 1937. The idea was that AFF would deal with design work, while ASJA and a new company established at Trollhättan on 2 April 1937

whose previous credits included being part of the design team for the Junkers Ju 88, this was a high-wing monoplane fitted with lower stub wings, looking remarkably similar to the Westland Lysander. In the event, it did not proceed beyond a wooden mock-up.

ASJA, which had begun to hire an increasing number of US

What looks to be a composite image depicts a B 17B in a shallow dive. VIA SWEDISH AVIATION HISTORICAL SOCIETY



A close-up view affords detailed inspection of the undercarriage fairings that were meant to double as dive brakes, and the configuration of a bomb load.

SAAB



The wooden mock-up of the Saab 17, with the rejected AFF F-1 behind. VIA SWEDISH AVIATION HISTORICAL SOCIETY

licence-built Bristol Mercury XXIV. The L-10-2 (P 7A) only had a wheeled undercarriage, being powered by a 1,065hp Pratt & Whitney R-1830-SC3G Twin Wasp. It was intended that series production aircraft would use the latter engine.

When war broke out on 1 September 1939, most of the Americans left Sweden, a few remaining there until March 1940. On 29 March, Saab made a formal offer to the KFF regarding series production of the Type 17. The two P 7 prototypes were almost ready for flight by early May. According to Saab test pilot Claes Smith, getting the aeroplane into the air now became a matter of the utmost urgency. The P 7B's first flight took place on 18 May. During the sortie, the canopy blew off, hitting Smith on the head. With blood streaming down his face, Smith nevertheless managed a safe landing at Linköping. One major issue was the aircraft's reluctance to get out of a right-hand spin. This was solved by adding a small dorsal fin.

The second P 7 prototype took to the air in June 1940, and floatplane trials were initiated by the end of the year. It was concluded that the P 7 was substantially more suitable than the Northrop 8A-1, which underwent similar trials during the summer. A modification to the floatplane was the addition of small vertical fins on the

stabiliser to improve directional stability.

Although originally intended for army co-operation and reconnaissance, the L-10 was, at Saab's recommendation, also developed as a light dive bomber. The designation B 8 was initially allotted to the latter, with the reconnaissance variant being designated S 15. In the event, following the introduction

of a new designation system, the L-10/P 7 became the B 17 and S 17 respectively.

The large undercarriage fairings were a major characteristic of the Saab 17. It was intended to use them as airbrakes during dive bomber attacks, but in the event they were rarely employed as such. Interestingly, during the latter stages of the war, the fairings

were the subject of a rather bizarre advertising campaign. It was claimed — with some justification — that they reduced the risk of damaging the aeroplane during forced landings.

The chosen engine was the Pratt & Whitney Twin Wasp, an order being placed in June 1940. It was intended for the Twin Wasp to be produced under

**DATAFILE SAAB 17 VARIANTS**

B 17A	Dive-bomber powered by SFA-built STWC-3 Twin Wasp; 132 built
B 17B	Dive-bomber powered by Nohab My XXIV (Bristol Mercury XXIV); 65 built.
S 17BL	Reconnaissance variant powered by Nohab My XXIV; 21 built; from 1943-45, 44 B 17Bs modified as S 17BLs
S 17BS	Twin-float maritime reconnaissance aircraft powered by Nohab My XXIV; 38 built, including one prototype; in 1944-45, 18 S 17BLs modified as S 17BSs
B 17C	Light bomber powered by Piaggio PXI RC40D; 77 built

Variant	Serial(s)	Quantity	Factory	Remarks
17B	3101/17001	1	Linköping	Prototype; originally designated P 7B
17A	3102/17002	1	Linköping	Prototype; originally designated P 7A
B 17A	17006 17238-17368	1 131	Linköping Trollhättan	Prototype for B 17A series
B 17B	17003-17005 17007-17016 17101 17105 17106-17115 17151-17164 17187-17202	3 10 1 1 10 14 16	Linköping Linköping Trollhättan Trollhättan Trollhättan Trollhättan Trollhättan	Static test airframe
B 17C	17017-17057 17102 17203-17237	41 1 35	Linköping Trollhättan Trollhättan	
S 17BL	17103 17131-17150	1 20	Trollhättan Trollhättan	
S 17BS	17104 17116-17130 17165-17186	1 15 22	Trollhättan Trollhättan Trollhättan	Prototype

Note: from 1943-45, 44 B 17Bs were modified as S 17BLs. Of these, 18 were modified in 1944-45 to S 17BS status.

The first prototype, serial 17001, following addition of the mainwheel fairings and revised national insignia. SAAB



licence, but in October 1940 the US government imposed an embargo against the delivery of aircraft, engines and other vital military materiel to Sweden. This problem was solved through reverse-engineering the Twin Wasp as the STWC-3, which was to power the B 17A. Interestingly, 115 Twin Wasps were acquired in early 1943 from German war booty stocks. These had powered Armée de l'Air Curtiss Hawk 75As, and eased the supply situation. Some 434 STWC-3s were built by Svenska Flygmotor at Trollhättan, also being used on the FFVS J 22 fighter and Saab B 18A medium bomber. Due to concerns over powerplant reliability, Flygvapnet ferry pilots were initially ordered to fly with the canopy open, so as to ease bailing out.

Swedish-built Nohab My XXIVs powered the B 17B and S 17B variants. In all, 332 My XXIVs were made, other employment being on the B 5B and C (Northrop 8A-1) and the B 3C (Junkers Ju 86K). With deliveries of STWC-3s running behind schedule, the Italian Piaggio PXI RC40D was selected as a substitute. A total of 180 such engines had been acquired in 1940-41, along with 60 Reggiane Re 2000 fighters. The Piaggio-powered variant was designated as the B 17C.

The B 17A/Bs of the dive-bomber wings were fitted with

the Saab BT2 bomb tossing device. Invented by Saab engineer Erik Wilkenson, this

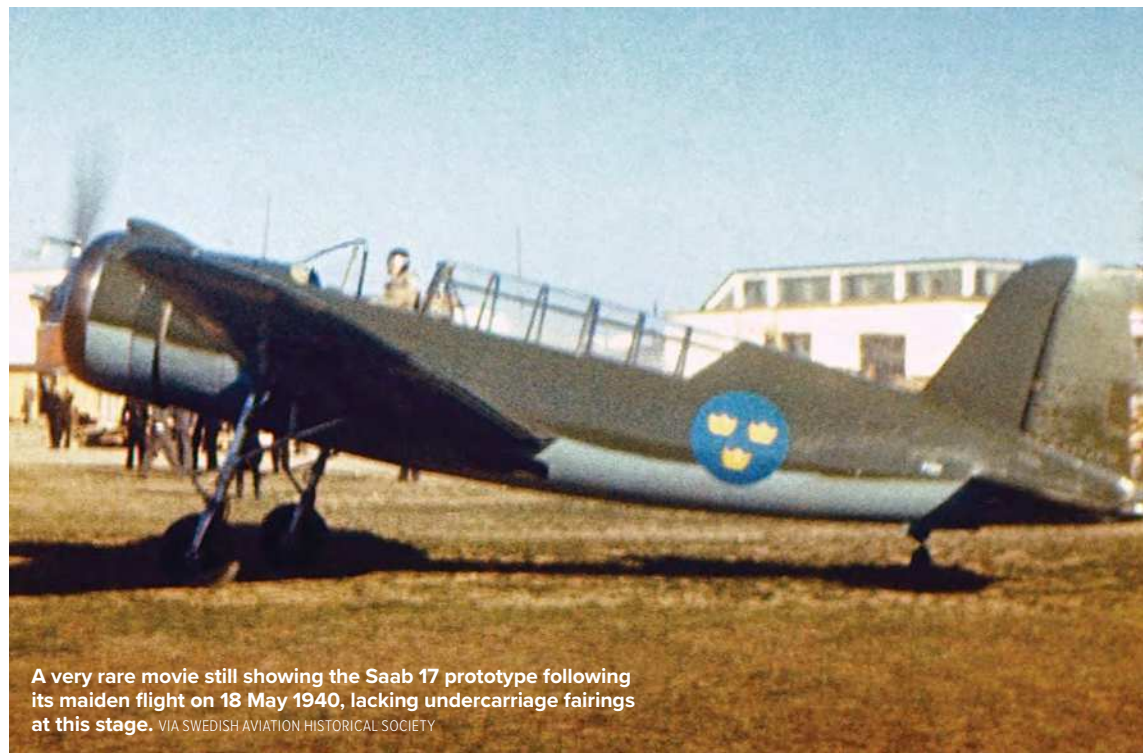
developed, being installed on Flygvapnet attack aircraft as well as the Boeing B-47 Stratojet.

**“ Work on the Saab 17 was highly secret, no information appearing until the end of 1941 ”**

allowed for shallower dives when attacking the enemy, making 90° dives unnecessary. Post-war the BT2 was further

Work on the Saab 17 was highly secret, no information appearing in the Swedish media until the end of 1941.

That November, the aviation magazine *Flygning* published a brief description of the new aeroplane. “In all countries”, it said, “new aircraft designs are shrouded in a veil of secrecy, something which has also been the case regarding the Type 17. Only a few have been aware that such an aeroplane exists, until the Flygvapnet recently lifted the veil and reported on some things, without really saying anything”. How familiar that sounds!



A very rare movie still showing the Saab 17 prototype following its maiden flight on 18 May 1940, lacking undercarriage fairings at this stage. VIA SWEDISH AVIATION HISTORICAL SOCIETY

The Saab 17 was a cantilever mid-wing tandem two-seat dive-bomber/reconnaissance monoplane, constructed entirely of metal. The monocoque fuselage was built of aluminium alloys, consisting of frames 400mm apart and stringers. The outer metal skin was flush-riveted. The two crew — pilot and observer/gunner — were seated in tandem beneath a continuous metal-framed glass canopy, with hinged and sliding sections over the respective crew positions. Between the front and rear cockpits was a roll bar frame, to which the radio antenna was attached. The lower forward fuselage contained the internal bomb bay. The fin was integral with the upper rear fuselage.

The wings consisted of a centre wing section and two outer wings, being built up from twin main spars, ribs and a flush-riveted outer metal skin. The centre wing spars passed through the fuselage, in front and to the rear of the pilot seat. Split flaps were fitted to the wing's trailing edge, along with trim-tab Frise-type ailerons.

There were two main types of undercarriage: wheels and floats. Skis could also be fitted for winter operations. The mainwheels and tailwheel were

## SPECIFICATIONS: SAAB 17

	B 17A	B 17B	S 17BS	B 17C
<b>POWERPLANT</b>				
	Pratt & Whitney STWC-3, 1,065hp	Nohab My XXIV, 980hp	Nohab My XXIV, 980hp	Piaggio PXI RC40D, 1,000hp
<b>DIMENSIONS</b>				
Wingspan	13.7m (44.9ft)	13.7m (44.9ft)	13.7m (44.9ft)	13.7m (44.9ft)
Length	9.8m (32.2ft)	9.8m (32.2ft)	10.0m (32.8ft)	10.0m (32.8ft)
Height	4.0m (13.1ft)	4.0m (13.1ft)	4.8m (15.7ft)	4.15m (13.6ft)
<b>PERFORMANCE</b>				
Maximum speed	444km/h (276mph)	395km/h (245mph)	345km/h (214mph)	433km/h (269mph)
Cruise speed	290km/h (180mph)	360km/h (224mph)	310km/h (193mph)	370km/h (230mph)
Service ceiling	8,700m (28,543ft)	7,000m (22,966ft)	5,400m (17,717ft)	9,500m (31,168ft)
Range	975km (606 miles)	975km (606 miles)	850km (528 miles)	775km (482 miles)
<b>WEIGHTS</b>				
Empty	2,650kg (5,842lb)	2,415kg (5,324lb)	2,660kg (5,864lb)	2,725kg (6,008lb)
Maximum	4,200kg (9,259lb)	3,800kg (8,378lb)	4,000kg (8,818lb)	4,200kg (9,259lb)
<b>ARMAMENT</b>				
	Three 8mm (0.3in) m/22 machine guns, one 250-500kg (551-1,102lb) bomb, eight 50kg (110lb) bombs	Three 8mm (0.3in) m/22 machine guns, one 250-500kg (551-1,102lb) bomb, eight 50kg (110lb) bombs	Three 8mm (0.3in) m/22 machine guns, nine 50kg (110lb) bombs	Three 8mm (0.3in) m/22 machine guns, 650-700kg (1,433-1,543lb) of bombs

all fully retractable, with large fairings being fitted in front of the main undercarriage legs.

Two fuel tanks (total capacity 333 litres each) were located in the left and right centre wing. The capacity of the left tank included 80 litres for use as reserve fuel. The reconnaissance variants had two additional fuel tanks (total capacity 133 litres

each) in the bomb bay area. The hydraulic system operated the retraction and lowering of the main undercarriage, the tailwheel and the flaps. The electrical system operated the instruments and the various electrical apparatus by means of a 24-volt DC system.

Armament consisted of two forward-firing m/22 8mm

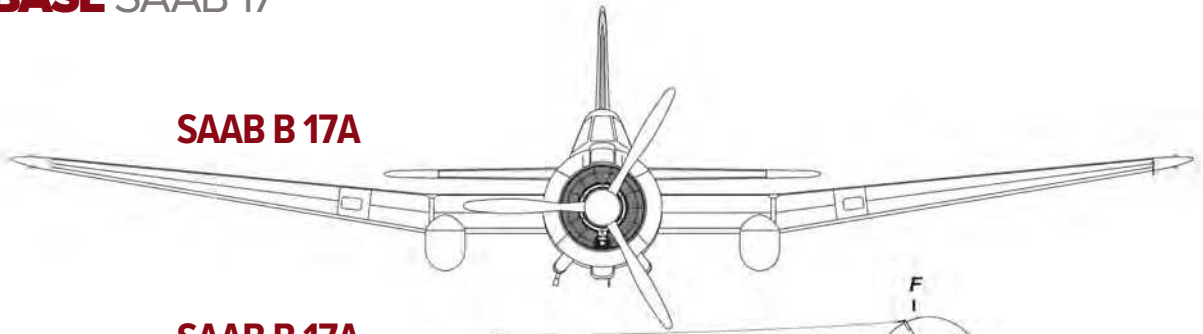
machine guns in the left and right outer wing sections, and one flexible m/22 in the rear cockpit. For aerial reconnaissance purposes, a hand-held Hk 7 camera could be carried in the rear cockpit. Depending on the variant, it was possible to carry a bomb load of up to 900kg in an internal bomb bay and on external racks. ➤

The Saab 17 assembly plant at Trollhättan.

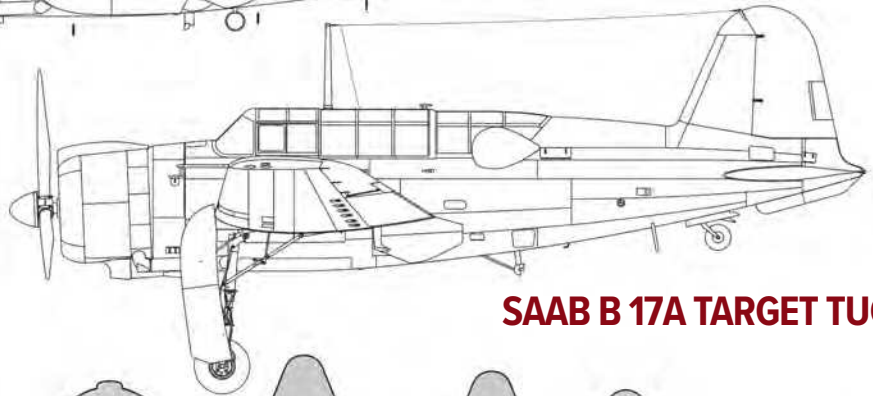
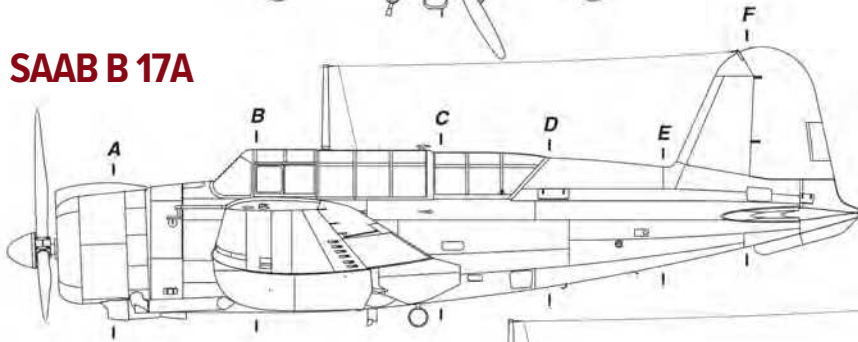
VIA SWEDISH AVIATION HISTORICAL SOCIETY



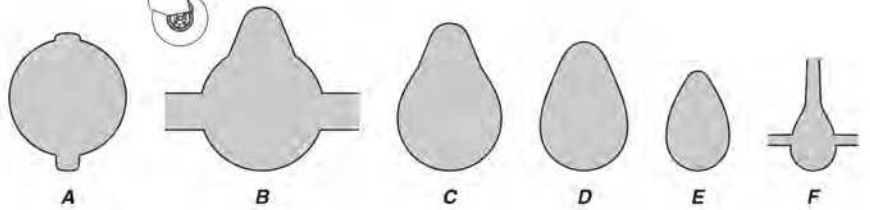
**SAAB B 17A**



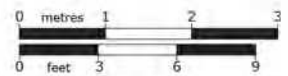
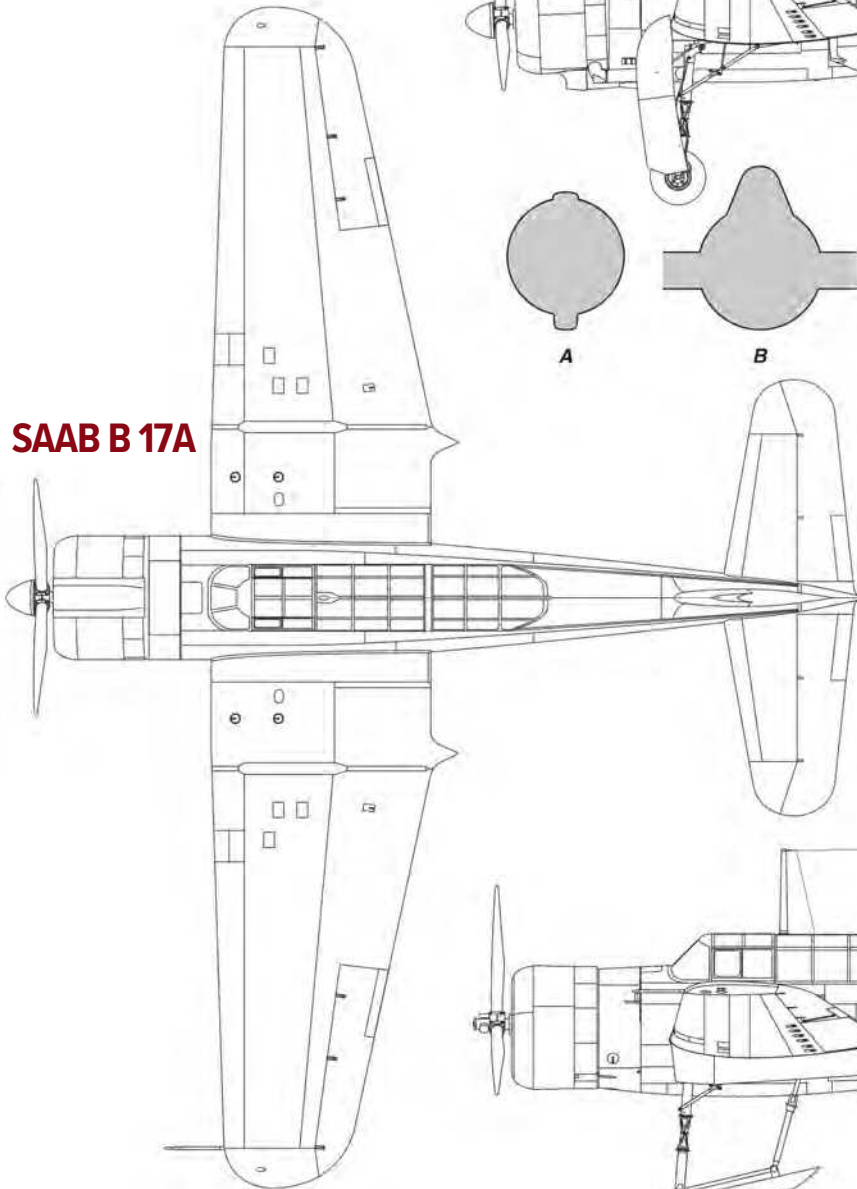
**SAAB B 17A**



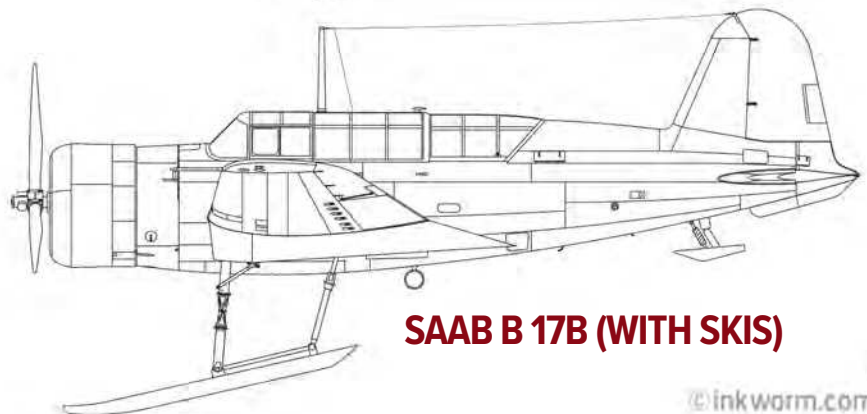
**SAAB B 17A TARGET TUG**



**SAAB B 17A**



**SAAB B 17B (WITH SKIS)**



©inkworm.com 

The arrival of the Saab 17 was eagerly anticipated by Flygvapnet pilots.

The luxury of sitting beneath an enclosed canopy in a high-performance and long-range aeroplane — at least when compared to the earlier Fokker CVs and Hawker Harts — was something to behold. Also, it was designed and built in Sweden. One early operational drawback of the 17 was that it demanded improved infrastructure with regard to airfields and maintenance.

An initial order for 86 aircraft was signed in December 1940. Of these, 65 were to be S 17BLs for F 3 wing, and 21 float-equipped S 17BSs for F 2. A second deal for 88 examples followed two months later, being intended to add a fourth operational squadron to F 2 and F 3, as well as equipping F 12 with B 17Cs. August 1941 saw a third order for an additional 88 aircraft, primarily intended to be built as B 17As for F 6. A fourth and final order for 60 aircraft was placed in September 1942, making a total of 322. However, the procurement plans underwent constant revision. The number of S 17BLs from the initial contract was eventually reduced to 21, with only 10 S 17BSs to be built. The remaining aircraft were produced as B 17Bs.



A ski-equipped, winter-camouflaged B 17B being bombed up prior to a training sortie. VIA SWEDISH AVIATION HISTORICAL SOCIETY

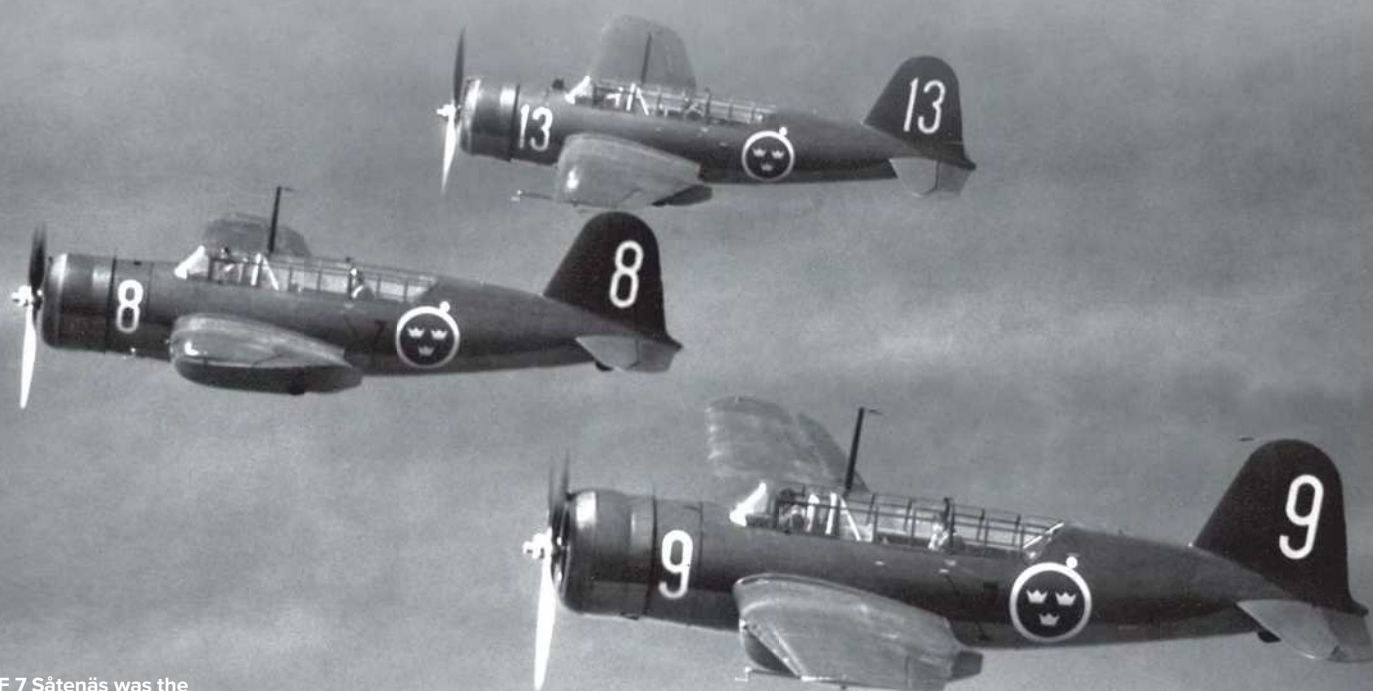
In the end, the production run amounted to 325, broken down into two prototypes, one static test airframe, 132 B 17As, 55 B 17Bs, 21 S 17BLs,

38 S 17BSs and 77 B 17Cs. However, as noted elsewhere, large numbers of B 17Bs were subsequently modified as S 17BL reconnaissance aircraft.

Other S 17BLs were converted into S 17BS floatplanes. Six Flygvapnet wings operated the type as a combat aircraft. By 1944, the air arm had no less than 294 examples on strength.

Based at Hägernäs, east of Stockholm, F 2 was the Flygvapnet's only maritime reconnaissance and naval co-operation wing. For the entire war, it was heavily engaged

**“ It was a luxury to sit beneath an enclosed canopy in a high-performance aeroplane ”**



F 7 Såtenäs was the largest user of B 17s. SAAB

in long-range patrols over the Baltic Sea. Convoy escort and anti-submarine sorties were also flown. The first of 37 S 17BSs arrived on 18 March 1942. One (17129) was written off in a pre-delivery crash. An additional 18 S 17BSs joined them in 1944-45. However, with the end of hostilities, the wing's aircraft strength was greatly reduced. The last S 17BSs were struck off charge in 1948.

One of the Flygvapnet's oldest wings, F 3 at Malmslätt was an aerial reconnaissance unit. On 20 February 1942, it received its first S 17BL (17103), the remaining 20 arriving between July and September 1942. An additional 18 B 17Bs were later transferred from F 7 for modification to S 17BL status. By mid-1943, all three squadrons were flying a mix of S 17BLs and Fieseler Fi 156s, designated S 14. A squadron of nine S 17BLs and one S 14 deployed to Kalix in north-eastern Sweden during early September 1944, the unit having been assigned the task of keeping a close watch on the German retreat from northern Finland. A fighter escort was sometimes provided. On two occasions, German flak fired on the Swedish aircraft. A III./JG 5 Messerschmitt Bf 109 pilot, Oblt Werner Gayko, damaged an S 17BL flying in Swedish airspace, causing a flurry of



B 17s awaiting delivery to a variety of Flygvapnet units, F 6 in the case of the two examples in the foreground. SAAB

diplomatic activity. Between December 1944 and March 1945, 24 B 17Bs were received. In July 1945, F 3 counted 45 operational S 17BLs. This soon changed, several aircraft being transferred

Östersund in central Sweden, F 4 retained its B 17As until 1947, when it was re-formed as a fighter wing, re-equipping with the North American J 26 Mustang.

the war, trials with RP-3 rockets obtained from Britain were conducted by the wing, though this weapon never became operational on the B 17. The type remained in service with F 6 until 1947, when the first Saab A 21As arrived.

Another dive-bomber wing, established at Sätenäs on 1 July 1940, F 7 eventually became the largest operator of the B 17. At the peak, more than 80 B 17A/B/Cs served with the unit. Its first B 17B arrived on 23 March 1942. By February 1943, F 7 was fully equipped with three B 17B squadrons. One accident that made national headlines took place on 25 February 1943. During a flight to Kalixfors in Swedish Lapland for winter exercises, one B 17B disappeared and another crashed near Gällivare. When the parents of the two crew in the first aircraft were told no funds were available for a thorough search effort, they offered to use their own money. However, just four days after they made their plea on 13 April 1943, a logger located the missing machine by chance.

In May 1944, German vessels in the Skagerrak fired at F 7-operated B 17s on several occasions. Although some of the shells exploded about 10m behind one of the aircraft, no damage ensued. Another interesting incident took place after the war. While flying in poor weather conditions, a B 17A ran low on fuel, the pilot electing to belly-land close to a small village in Norway. Just before setting

## “ German vessels in the Skagerrak fired at B 17s from F 7 on several occasions ”

to F 2. The S 17BLs stayed with F 3 until 1948.

The first of an eventual total of 50 B 17As began to replace the Northrop 8A-1s (B 5C/D) of F 4 in early 1944. Located at

Formed as a dive-bomber wing at Karlsborg on 1 July 1939, F 6 received an initial batch of 14 B 17s in August 1943. By March 1944, its full strength of 48 had arrived. Following the end of



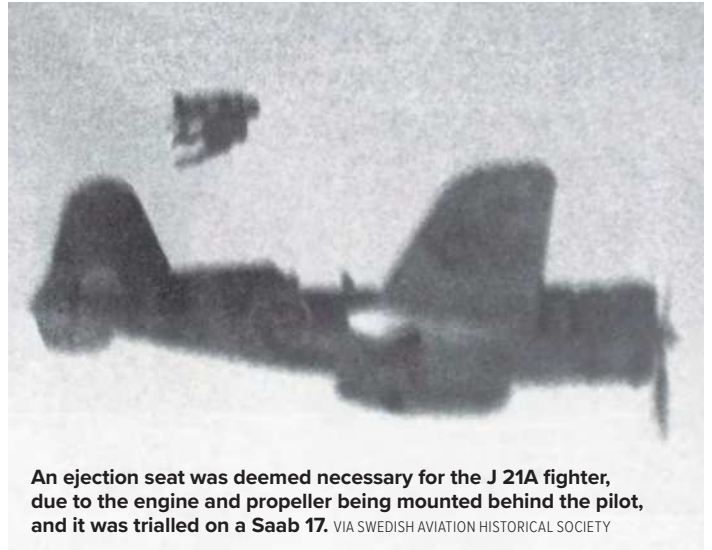
A B 17B from F 7's strength cruises along above the clouds. SAAB





**B 17Bs of F 7 during a dive-bombing training sortie.**

VIA SWEDISH AVIATION HISTORICAL SOCIETY



**An ejection seat was deemed necessary for the J 21A fighter, due to the engine and propeller being mounted behind the pilot, and it was trialled on a Saab 17.** VIA SWEDISH AVIATION HISTORICAL SOCIETY

the aeroplane down, the crew remembered the four bombs beneath the wings. They rapidly found a suitable spot to drop them and the bombs exploded safely among some trees, after which the pilot force-landed at the village of Ljördal. On visiting 40 years later, he discovered that Ljördal's history was divided between 'before and after the arrival of the Swedish bomber'.

F 12 was formed at Kalmar, south-eastern Sweden on 1 July 1942, and took on its first B 17Cs the following March. Between March and September 1943, 54 examples were received. On more than one occasion, they were scrambled to either turn

foreign intruders away or assist them to a safe landing. On 22 May 1944, a North American P-51B of the 4th FG/334th FS, flown by Capt Nick Megura, was escorted to Kalmar by a B 17C. However, the Swedish type's performance did not always match that of Allied aircraft. Lockheed F-5E 42-28616 of the 7th PG suffered engine trouble during a photo-reconnaissance sortie over the German Baltic coast on 22 November 1944, its pilot Lt Elston being forced to fly on one engine. Despite this, Elston had no trouble evading the pair of B 17Cs sent to intercept him, and he eventually landed at Bromma airport just

north of Stockholm. The final B 17Cs were struck off charge in 1947, F 12 converting to another Saab product, the J 21A. However, a few B 17As were delivered for second-line duties.

One historically significant event involving the 17B was its use as a platform for ejection seat trials, this technology being pioneered by Germany and Sweden. The first such tests occurred on 8 January 1942, the seat being intended for the J 21 pusher fighter. Post-war, jet-assisted take-off experiments were performed at the Försökscentralen (FC, the Flygvapnet's experimental centre). Although not adopted

for the B 17A, the JATO rockets were used operationally on the J 21 fighter.

By 1948, the 17B and C variants had been struck off charge. Only the B 17A was retained, the remainder being dispersed among almost every Flygvapnet wing, the sole exceptions being F 5 and F 20. In second-line service, the B 17s were used for various missions, like weather reconnaissance and liaison. Other, more light-hearted uses included weekend flights to the Swedish mountains for a couple of days' skiing. The last Flygvapnet B 17A was 17250, which was struck off charge on 21 December 1955.



**Another rare wartime colour image of a B 17 formation put up by F 7.**

VIA SWEDISH AVIATION HISTORICAL SOCIETY



**Given the right conditions, the S 17BS could also take off from snow.** VIA SWEDISH AVIATION HISTORICAL SOCIETY



**S 17BLs of F 3 at their Malmslätt base.**

VIA SWEDISH AVIATION HISTORICAL SOCIETY

## Denmark

Rather unexpectedly, the Saab 17 became the first Saab combat aircraft to be exported. Although Denmark was occupied by Germany on 9 April 1940, a civilian Danish government continued to rule the country. However, by the summer of 1943, the underground resistance had increased substantially. As a result, German forces initiated Operation 'Safari', the complete military occupation of Denmark, on 29 August 1943. With thousands of Danes fleeing their country, Danish politicians and representatives of the resistance movement entered negotiations to establish a training camp in Sweden, where Danish refugees would receive basic military training, thinly disguised as instruction for future policemen. By early May 1945, a Danish Brigade consisting of some 5,000 troops, composed of army and naval units as well as a small aviation detachment, was operational in Sweden, and ready for action against German forces in Denmark.

The story of the Danish Brigade is little-known outside Scandinavia. During the war, thousands of Danes sought refuge in neutral Sweden. Among them were airmen from the Danish army and naval air arms. Following protracted negotiations, an initial batch of 10 Danish pilots was allowed to enter service with the Flygvapnet from the spring of 1944. Initially, the Danes were not to fly as pilots in command. Instead, they would serve as observers. The prohibition was soon relaxed, though the fact that Danes were



The Danish-marked mounts of the Eskadrille B 17C run their engines. VIA DANISH NATIONAL MUSEUM

receiving flight training in neutral Sweden remained highly secret.

Soon further Danish pilots joined them, accompanied by mechanics, gunners and wireless operators. They flew Fiat CR42 (J 11) biplane fighters and Northrop 8A-1 (B 5) and Junkers Ju 86K (B 3) bombers. Following protracted and difficult

F 12, being organised into three groups as well as a staff flight.

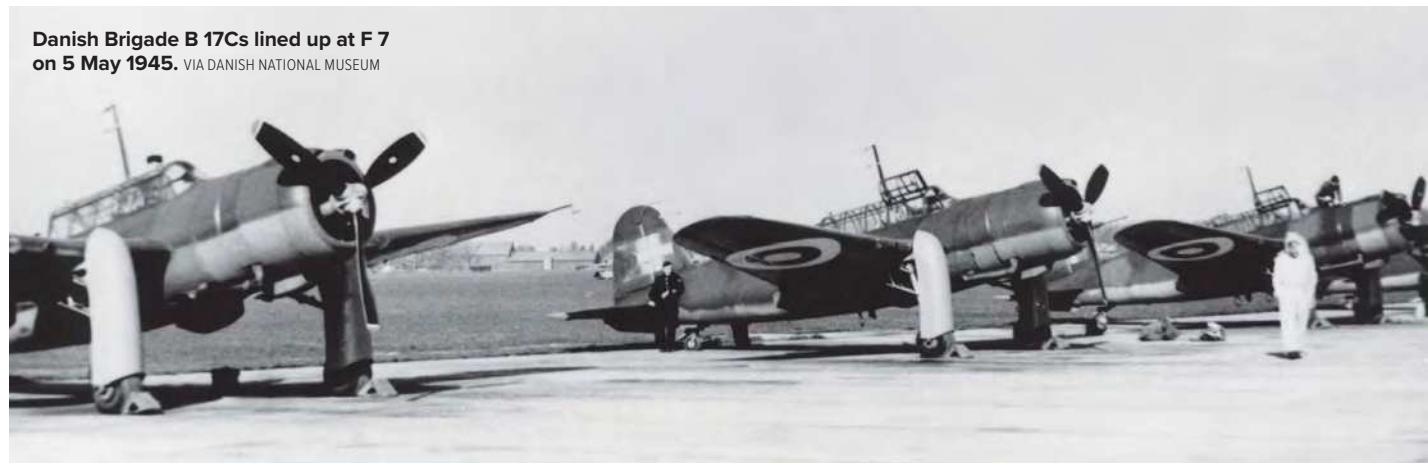
Operation 'Rädda Danmark' (Save Denmark) was set in motion during April 1945. This involved establishing a squadron of 12 B 17Cs, later increased to 15, at the disposal of the Danish Brigade and based at F 7 Sätenäs. Everything was ready in early May,

The Danish crews were enjoying a dinner with their Flygvapnet colleagues on the evening of 4 May when news arrived of the German surrender in Denmark. They feverishly began to prepare for the impending sortie. Although a directive regarding Danish markings had been issued, none of the Danes remembered its regulations. Instead, improvised national insignia were applied, the B 17Cs all being adorned with oversized white-red-white roundels, instead of the standard red-and-white. With only Flygvapnet templates available, the dimensions were the same as the Swedish air arm's underwing roundels! The commander of the groundcrew, C. H. E. Kallehaug, had earlier served in the navy. Kallehaug decided that a Danish naval flag was to be painted on the fin and rudder. Allegedly, black code letters from A to O were also applied.

## “ The Danish B 17 crews were eager to return to their homeland ”

negotiations with the Allied high command, the Danish Brigade was officially placed under the command of the Danish resistance movement's Krigsministerium (Ministry of War). As of March 1945, the Danish crews were in service with three different Flygvapnet wings, specifically F 4, F 6 and

the crews being eager to return to their homeland. The plan was to attack the Luftwaffe air base at Aalborg, where around 30 Heinkel He 111s were believed to be based. As it was unclear which of the hangars housed the Luftwaffe bombers, Sqn Ldr C. H. Sandqvist intended to make a low pass to establish their whereabouts.



Danish Brigade B 17Cs lined up at F 7 on 5 May 1945. VIA DANISH NATIONAL MUSEUM



A 1960 view of Imperial Ethiopian Air Force B 17A serial 316, with the country's emperor, Haile Selassie, standing on the wing. ALAMY

At 05.00hrs on 5 May, the Danish squadron, named Eskadrille B 17C, was ready for action. With the aircraft armed and fuelled, the signal for the bombers to take off, "Hans er blevet syg" (Hans has become ill), was eagerly awaited. However, the crews were told to wait. Their disappointment at not being able to return to a liberated Denmark by air was, needless to say, profound. Instead, time was spent on training flights, including gunnery exercises but no dive-bombing. Finally, on 12 May, orders arrived which emphatically ordered the crews to return to Denmark by train. In the meantime there had been negotiations for the purchase of the 15 B 17Cs, including spares and support equipment. The asking price was two million Swedish kronor. However, the offer was turned down. It was later deemed a mistake not to have purchased the bombers.

## Ethiopia

That the B 17A became the first combat aircraft to serve with the Imperial Ethiopian Air Force (IEAF) can be traced to the influence of the Swedish Count Carl-Gustaf von Rosen. Having served as an air ambulance pilot during the Abyssinian war against Italy in 1935-36, von Rosen managed to obtain the trust and respect of the Ethiopian emperor Haile Selassie. Having initially been given the opportunity to establish a national airline — a task eventually performed by

TWA — von Rosen was instead offered the job of reorganising and expanding the existing air arm. Although von Rosen had little experience of military matters, he accepted it. According to von Rosen, the B 17A was the ideal combat aeroplane for Ethiopia. It was rugged, easy to maintain and offered excellent endurance. Also of great importance was the fact that many B 17As were readily available from Flygvapnet

stocks. Swedish influence over the IEAF was very strong indeed, all of its commanding officers between 1947 and 1961 being Swedes. Many Flygvapnet pilots, technicians and others served with the IEAF. An initial batch of 16 B 17As, serials 301-316, were flown to Ethiopia between 30 October and 10 November 1947. The IEAF Flying School was formed at Bishoftu air base outside Addis Ababa on 13 November. Most

of the Ethiopian cadets had little or no technical experience, some learning to fly before they had ever ridden a bike. The main drawback of the B 17A was its tendency to ground-loop. As a result, several were damaged in landing accidents. In early February 1948, the IEAF consisted of 16 B 17As, five Saab 91 Safirs, four DH82A Tiger Moths, two Cessna Bobcats and an Avro XIX. The B 17As were assigned to the newly formed Attack Wing, and the other aircraft to the Flying School. Gradually the fleet was built up. Five more aircraft, serials 317-321, arrived in 1950, and another 10, serials 322-331, the following year. Serial 332 was built up from spares and components from crashed airframes. By this time, the IEAF had begun to take delivery of Fairey Firefly Is. Although a more modern type with better overall performance, the Firefly was not a success in IEAF service, and the B 17As soldiered on. Following the annexation of Eritrea in September 1952, almost every serviceable B 17A and Firefly was airborne, covering the emperor's entry into the city of Asmara. The Attack Wing



Surely a composite image of Ethiopian B 17As parading above Haile Selassie, given the lack of attention being paid to the flyover. VIA SWEDISH AVIATION HISTORICAL SOCIETY

Development

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The Finnish Air Force briefly operated two B 17As, including SH-1.

VIA SWEDISH AVIATION HISTORICAL SOCIETY



was also reorganised into three squadrons, No 1 Squadron being based at Asmara with Fireflies and Nos 2 and 3 Squadrons at Bishoftu with B 17As.

A final batch of 15 B 17As, serials 333-346, arrived during

1953. Apart from the B 17As, three B 17Cs were sold to Ethiopia for use as ground instructional airframes. As

of mid-1956, the air force had 23 B 17As in active service. Two years later, the USA set up a military mission to Ethiopia, and among the former US Air Force aircraft delivered to the ICAF were North American T-28As

and T-28Ds, the latter intended as replacements for the Saabs. Fifteen B 17As were still with No 3 Squadron in March 1960. However, the Trojans initially proved less than ideal for the local conditions. After landing

a T-28A at the Jijigga grass field, an Ethiopian pilot remarked, "I thought the whole aircraft would shake itself apart,

and could you please tell Saab to reinstate production of the B 17A?"

The hour of glory for the ICAF B 17As came in December 1960, when the emperor's bodyguard staged a coup d'état. On 15-16

December, B 17As and North American F-86F Sabres flew several sorties against rebel strongholds in central Addis Ababa. Partly as a result, the coup failed. ICAF aircraft, possibly B 17As, reportedly saw action in 1964 against insurgents close to the border with Somalia. A few B 17As are said to have remained operational as late as 1972-73, having served for some 25 years.

## Finland

Finland's experience with the type was not a happy one. Two B 17As, SE-BRO and SE-BPR, were sold by Svensk Flygtjänst to the Ilmavoimat (Finnish Air Force) in March 1960. Prior to the sale, SE-BPR had been withdrawn from use, and was parked at F 14 Halmstad for nearly a year. When the deal was concluded, a Svensk Flygtjänst mechanic was despatched to perform a brief initial check and engine runs. The B 17 was then ferried to Malmö-Bulltofta where it was overhauled.

Both machines were in fairly poor condition, but nevertheless entered Ilmavoimat service as SH-1 (17355) and SH-2 (17308) respectively. They retained the basic Svensk Flygtjänst colour scheme, with Finnish national insignia added. SH-1 was withdrawn from use and scrapped on 4 January 1962. It had not been flown following a failed attempt to start the engine on 30 May 1961. SH-2 only lasted about five months, being lost on 8 August 1960 in a crash at Pyhäjärvälä near Oulu in northern Finland. The cause was engine failure. The wreck was recovered, but scrapped for spares on 26 October 1960.

**“ A few Ethiopian B 17As may have served for some 25 years ”**

## Austria

One Svensk Flygtjänst B 17A, SE-BYF (17339), was delivered to the Österreichische Luftstreitkräfte on 29 August 1957. Retaining its overall yellow colour scheme but with Austrian Air Force insignia and the codes 4D-AA added, the B 17A accumulated some 400 flying hours on target-towing duties. Its last flight took place on 4 January 1962, after which the airframe was scrapped.

**B 17A 17339 joined Svensk Flygtjänst as SE-BYF upon retirement by the Flygvapnet, and then went to the Austrian Air Force.**

CHRIS SANDHAM-BAILEY



**Target-tugs and radar-tracking**

By the early 1950s, many Flygvapnet B 17As were becoming surplus to requirements, and 19 were transferred to the civilian company Svensk Flygtjänst (Swedish Air Service), which had fulfilled target-towing needs for the Swedish Army and Navy since 1939. Initially, the B 17As remained the property of the Royal Air Board (KFF), being operated and manned by Svensk Flygtjänst employees. Some were later sold to the firm itself.

A few of the B 17As, including SE-BWA, SE-BWC, SE-BYH and SE-BZH, were later transferred to the small AVIA company, which had the exclusive rights to conduct target-towing and radar-tracking sorties around the island of Gotland. Although the main task was target-towing, the B 17A proved less than ideal. When extended, the sleeve target had a braking effect of about 500hp, effectively reducing the engine output by half. As a result, the role of the B 17As soon centred on radar-tracking, five being equipped for electronic countermeasures duties. Two of them, SE-BWC and SE-BYH, still survive, the latter being the sole airworthy example. As already mentioned, one B 17A was sold to Austria and two to Finland.

SE-BWC was repainted as a Flygvapnet B 17A for the airshow at Malmslätt from 31 August-2 September 1962, celebrating the 50th



**B 17A SE-BWC in target-towing guise with Svensk Flygtjänst.** VIA SWEDISH AVIATION HISTORICAL SOCIETY

anniversary of the establishment of Swedish military aviation. It was subsequently returned to its yellow colour scheme. The last operational flight, a routine 55-minute target-towing sortie, took place on 10 June 1964, pilot Birger Ene touching down at Visby airport. The former bomber had accumulated 2,450 hours and five minutes of flight time. SE-BWC remained in outdoor storage, its civilian registration being cancelled on 2 September 1967. The sole remaining AVIA B 17A, SE-BYH, stayed in service with the concern until 30 June 1968.



**Incredibly, the German shepherd in the foreground remains calm and collected, even though B 17A SE-BUL — the last production example — is undergoing an engine run behind it.** VIA ARLANDA FLYGSAMLINGAR

**Ostermans Aero**

Two S 17BS floatplanes were civilian-registered. The first was 17185, which became SE-BFA on 31 May 1948. Then came 17174, which had SE-APC reserved in February 1950, and was officially registered on 12 April that year. The owner of both was the Royal Air Board.

SE-APC and 'BFA were sold on 17 May 1950 to Ostermans Aero of Stockholm. The float-equipped aircraft were used to transport newspapers to remote islands in the Stockholm archipelago, and fresh fish and shrimps from Bergen,

Norway, the latter cargoes being carried in some of the watertight compartments in the floats. However, neither S 17BS lasted very long. SE-BFA was written off in a crash in Karlstad harbour on 28 September 1951. After landing, the pilot taxied at too high a speed, hitting a bridge. The floats were torn off, the airframe continuing a few metres up the beach. The aeroplane was deleted from the civil register on 16 October 1951 as scrapped. SE-APC was withdrawn a short time afterwards, its registration being cancelled on 8 November 1952 and the airframe broken up.



**Two S 17BSs saw brief civilian use transporting newspapers and seafood, including SE-BFA.** SVERRESBORG TRØNDELAG FOLKEMUSEUM



The sole airworthy survivor has largely been confined to events in Sweden during recent seasons. LUIGINO CALIARO

The old lady is impressively big. In order to climb up to the pilot's seat, one has to use built-in steps and handles to get onto the wing. From there you walk towards the canopy hatch. The B 17 has an unusually shaped canopy that folds in half upwards before you are able to get in. Place one foot on the parachute, one hand on the canopy's top handle, and then you squeeze down into the seat. The front cockpit is roomy, reminiscent of American aircraft of the 1940s, this being a result of the loaned US designers who assisted in conceiving the Saab 17.

Parachute and straps on, I link up the helmet radio connection, a modern device. The first B 17s did not even have a radio, a telegraphic key on the canopy rail being the sole means of communication. Going through the checklist is a breeze — from left to right, engine levers, fuel, electrics and hydraulic systems

— before it's time to start the engine. The priming pump fills up the carburettor, and the propeller turns over a few times while simultaneously working the primer — then, 'contact'. Magnetos on, crank up the handle for 20 seconds and pull

out the handle to engage the starter motor.

The propeller whirls past the windscreen a few times, followed by the sound of ignition in the first few cylinders. Mixture rich, assist with a bit of primer, and after a few seconds one is

rewarded with the powerful roar of the engine, combined with a cloud of smoke.

Warming up the engine and checking the magnetos at 2,000rpm, the noise becomes deafeningly loud and the whole machine shakes and twists so much that you can see the 'stockings', as they're known, on the undercarriage legs moving up and down. Idling back, chocks away, I'm ready to taxi.

The forward view while taxiing is virtually non-existent, and you have to continuously weave the nose in both directions to see where you're going. Unlike the Sk 16 (Noorduyn Harvard), it is not possible to crank back the canopy and lean out to get a better view. The weaving is hard on the brakes as the rudder is inadequate for direction changes at such low rpm. After a long and careful taxi, I've reached the beginning of the runway and am ready to take off. A few final checks, of which the most



The spacious front cockpit is one of the design cues that resulted from US influence on the B 17. LUIGINO CALIARO

important is 'tailwheel lock on'. The B 17 has a reputation for being difficult to handle on the ground, one important step being to lock the tailwheel as a means of enhancing directional stability.

Push the throttle slowly forward to 2,550rpm and 86cm manifold pressure. The engine note increases to a roar and we accelerate rapidly along the runway. The acceleration is not as impressive as in a Mustang, but after only a few seconds I can lift the tail. Having rolled for about 350m the speed is 130-140km/h, and we're off the ground.

It's easy to maintain course during take-off by using the rudder, and as soon as

we're airborne I can retract the undercarriage. I see the huge undercarriage fairings fold up against the leading edge and the speed increases quickly to 210km/h, which is the recommended climbing speed.

As soon as I remove my hand, the throttle moves rearwards and I have to use the friction brake in order to lock it. The oil temperature is rising towards the yellow area, and I radio Weikko Sunell, who is escorting me in a Beech Baron, that I have a potential problem. By reducing

the rpm and increasing speed, the flow of air through the oil radiator increases.

I then begin to check the manoeuvring characteristics. Turning right and then left, I note the good rudder response and comfortable stick forces at around 300km/h. The oil temperature gradually decreases, and I continue to climb to an altitude of 2,000m for the test programme that we have agreed upon for this first flight. This involves checking stability, stick forces and stalls in all configurations, meaning

**“Turning right and left, I note the good rudder response and stick forces”**

different flap settings and with the undercarriage lowered and retracted.

I note that the stall speed conforms with that

of the manual almost to the exact kilometre per hour. A clean aeroplane should stall at 130km/h, and, unsurprisingly, at 130km/h the right wing drops without any noticeable stall warning. With the undercarriage and flaps lowered, the stall speed is 100km/h. We have calibrated the air speed indicator against that of the Baron at a few checkpoints, but at such low speeds there's no way Weikko can follow me. It is way too slow for him. I end with an acceleration test, but stop at



The surprising agility of the B 17 is demonstrated by Saab test pilot Johan Sjöstrand, as he banks B 17A SE-BYH vertically. LUIGINO CALIARO

**DATAFILE**

**“WE DIDN'T HAVE MUCH OF A CHOICE”**

Åke Nihlstrand, who flew the B 17A with Flygvapnet wing F 6 Karlsborg on second-line duties, later wrote, "First of all, the B 17 was conventional — apart from a few minor peculiarities, its flight characteristics were normally completely undramatic. We A 21 pilots saw the B 17 as a clodhopper, but as the aeroplane was built as a bomber, and a bomber is constructed to be sturdy... The B 17's least appealing trait was its landing characteristics. It demanded to be flown right down to the ground — any attempt at a three-point landing with a completely stalled aeroplane usually punished the pilot with a series of bounces that were difficult to master. If things turned ugly, this usually resulted in a ground-loop, which occasionally caused some form of damage, or at least a thorough post-flight check.

"The engine could also be a source of trouble. Initially, the STWC-3 provided the technicians with quite a few problems. A string of pilots had to make forced landings immediately after take-off, both into Lake Vättern and on dry land. The cause was, more often than

not, found to be sooty spark plugs of poor wartime quality. But we were spared from the difficulties of the Piaggio engines. Apart from the constant purely technical breakdowns, they had to get used to the fact that the engine soon became very tired.

"The so-called dive brake undercarriage fairings were a peculiarity. First of all, they were not necessary — the dive speed rarely reached the point where such brakes were needed. Additionally, the aircraft's trim setting changed. To keep an eye on the target, checking your speed as well as the trim setting changes made it difficult to concentrate on the main task.

"All in all, one has to admit, due to the prevailing circumstances, that Saab did a good job with its 'first-born'. All things considered, it was an honest aeroplane. Other manufacturers with a lot more resources at hand have produced worse. Perhaps it was because of this that most pilots overlooked the B 17's flaws and idiosyncrasies. After all, we didn't have much of a choice, despite our government's slogan, 'Our Readiness is Great.'"

**DATAFILE**

**IN PRESERVATION**

The first Saab 17 to be preserved was B 17B 17005, which was struck off Flygvapnet charge on 2 March 1948. It was handed over to the commander of F 3, Col Hugo Beckhammar, “for exhibition purposes”. This example is on static display at the Flygvapenmuseum in Malmen. It is the third production airframe, and the oldest Saab-built aeroplane to survive.

By the end of the 1960s, two B 17As, SE-BWC and SE-BYH, remained with AVIA, albeit withdrawn from use. Concerned about their uncertain future, members of the Swedish Aviation Historical Society contacted the company’s owner Nils Thüring. As a result, both were formally transferred to the fledgling Flygvapenmuseum on 24 January 1969. Late that year, they were transported by boat and lorry to Malmslätt. However, two B 17As was one too many, and SE-BWC was donated to the Royal Danish Air Force in commemoration of the Danish Brigade. On 5 May 1970, exactly 25 years after the surrender of German forces in Denmark, the B 17A was formally handed over by the Flygvapnet commander-in-chief, Stig Norén. Danish military insignia were applied, along with the code letter E (allegedly short for Egeskov, the location of the then Danish historical aircraft collection). Since 2000, the B 17A has been on display at the Danish Museum of Science and Technology in Helsingør.

The remaining B 17A, SE-BYH (formerly 17239), remained in storage until 1996. On 18 September, the night before the official roll-out of the two-seat JAS 39B Gripen, the idea of restoring SE-BYH to airworthiness was proposed during the course of a formal dinner for Saab officials. It met with



Painted in false Danish Brigade colours, B 17A 17320 is preserved at the Danish Museum of Science and Technology. SUSANNE KROGH-JENSEN/DMST

immediate approval, the former head of the Saab Scania workshop, Lennart Petersén, being appointed as project manager.

Just five days later, SE-BYH was moved into the Flygvapenmuseum workshop. The outer wing sections were transported to Saab for inspection. The target-towing gear was removed, and the electrical systems inspected. The main undercarriage units were replaced with items stored at the Flygvapenmuseum, as were one of the elevators and the rudder. The damaged STWC-3 engine was removed for refurbishment. A spare STWC-3 was later acquired on loan. The propeller was sent to Norway for overhaul.

It was discovered in mid-October 1996 that the rear fuselage frames were deformed. This was thought to have occurred in June 1947, when a bomb struck the lower rear fuselage. The resulting damage had been largely repaired, but the lingering frame deformation had to wait another 49 years to be fixed!

The first flight took place on 11 June 1997. Due to a lack of space in the Saab paint shop, a camouflage scheme was not applied until late June. Saab celebrated its 60th anniversary with an airshow in September 1997, where the B 17A was the big hit. Since then, SE-BYH has been a favourite at events across Sweden, with occasional visits to foreign shores, including Duxford for Flying Legends 2005. Although owned by the Flygvapenmuseum, the B 17A is flown and maintained by Saab. Three pilots now share the duty of piloting SE-BYH: Hans Einerth, Björn Rystedt and Johan Sjöstrand. By 1 July 2021, it had amassed 3,210 hours during 1,037 flights.

In 1996, two former IEAF B 17As, 338 (17365) and 341 (17273) were recovered from Ethiopia by South African businessman John Sayers, along with numerous Saab Safirs and two Fairey Fireflies. Both B 17As are currently stored in Lithuania, the intention being to restore one to airworthiness.

400km/h due to the aeroplane being incorrectly trimmed. It wants to roll to the left, and I have to use considerable force to remain straight and level.

After posing for the camera for 10 minutes, I veer off for more important matters — the landing. Pushing the nose down in a shallow dive, the B 17 accelerates to 400km/h. There is time for one low flyby along the runway, during which I glance at the enthusiastic throng of veterans and other spectators waving as I sweep pass them.

Out on the downwind leg, I reduce speed to 250km/h, put

the undercarriage down and the propeller into fine pitch, slow to 200 and extend the flaps. Turn towards the runway, reduce to 170. On finals, flaps fully down and reduce to 150. The landing circuit this time has to be wide in order to have time for checks and to gather my impressions. The aeroplane is stable at this speed — the needle sits nicely at 150 with some increase of rpm.

Over the threshold, I keep on flying carefully until the wheels touch the runway. Reduce rpm further, push the stick forward to keep the aeroplane down. I’m allowing the speed to drop to 100 before I set the tailwheel down, and at the same moment I must fend off a yaw to the right by pressing the left brake. I have huge respect for the aeroplane’s ground handling characteristics,

being prepared to adjust any tendency of yaw.

The speed has been reduced to a comfortable taxi, and I can take a breather. I open the canopy to increase my forward vision before coming to a halt in front of the hangar. I run up at 1,500rpm for a few seconds, reduce to idle and push the mixture lever forward to stop the engine. My first flight with 17239 has been completed.

**“ I have huge respect for the aeroplane’s ground handling characteristics ”**

Jan Forsgren thanks Lennart Berns, Reinhold Keimel, Susanne Krogh Jensen, Mikko Kymylä, Kjell Nordström, Björn Rystedt and Joakim Westh.