Post war PBY-5A KK-G (Bu.Aer.No. 45613) flying low over the sea. This aircraft served with the RNoAF from July 1954 until it was lost in July 1960 (via Nils Mathisrud)

Norwegian Cats

Surfing the net can have its bright moments, such as when one encounters a brilliant site with exotic material which simply cries out to be turned into a modelling feature in some magazine. This is what happened when Richard J. Caruana discovered Nils Mathisrud's website, complete with some of the most colourful schemes one can imagine, such as those dedicated to Norwegian Catalinas, which were born within the Royal Air Force during World War Two, continued to be operated post-war by the Royal Norwegian Air Force, and even flew for a civilian operator.

The Catalina started life as the Model 28, the result of an order placed by the United States Navy (USN) with Consolidated Aircraft in October 1933 asking for a new flying boat for maritime patrol duties. Design of the new flying boat was entrusted to Isaac Macklin Laddon, under whose guidance an innovative aircraft began taking shape.

This included the design of an internally braced wing which reduced the need for external struts and bracing wires; stabilising floats retracted into the wingtips. The XP3Y-1 prototype performed its first flight in March 1935. The initial order in March 1935 called for 60 examples, bearing the designation PBY-1. In October 1935, the concept of the long-distance patrol bomber was proved when an example covered 3,443 miles (5541 km) in 35 hours. Other important features included an enclosed cockpit, de-icing boots on all leading edges of flying surfaces, two hardpoints under the wing capable of carrying torpedoes, and 0.30in machine guns in waist and nose positions.

Originally, the PBY-1 appeared as a pure flying-boat, needing a trolley for beaching, or had to be hauled out of the water by means of a crane. By the time of the Pearl Harbor attack in December 1941, the USN had 16 squadrons equipped with the type. It was powered by a pair of Pratt &Whitney 900hp R-1830-64 Twin Wasp radials mounted on the wings, and proved capable of carrying a formidable payload. Its operational range of 2,545 miles (4092 km) was a considerable improvement over other flying boats then in USN service.

The PBY-2 incorporated four underwing hardpoints which could each take up to 1000lb (454kg). Waist armament was replaced by 12.7mm calibre machine guns. Engines on the PBY-3 were changed to 1000hp R-1830-66 Twin Wasps, these being uprated to R-1830-72s, and rated at 1,050hp on the PBY-4. Bulged waist gun transparencies were introduced on this model. Foreign interest, and further orders for the USN, resulted in the PBY-5, the first major production version of which over 800 examples were to be built. It was originally powered by a pair of R-1830-82 Twin Wasps rated at 1,200hp, although these were eventually changed to R-1830-92s. The PBY-5A (803 examples built) was the first amphibious version, fitted with a retractable wheeled undercarriage, while the PBY-6A was equipped with air-to-surface radar and had a change in armament calibre to 12.7mm Brownings in the bow position.

Catalinas for Britain

The Royal Air Force received 99 PBY-5s (28-5ME), which were redesignated Catalina Mk I in British service. Armour protection was increased, while defensive armament was changed to 7.7mm Vickers guns; one in the nose, another in a ventral tunnel, and two in the blister positions. There was also a change in power plants to Pratt &Whitney R-1830-S1C3-G Twin Wasps rated at 1,200hp. The Catalina Mk IA was based on the PBY-5A (28-5AMC) amphibian.

While only 14 Mk IA were acquired by the RAF, 225 examples of the Mk IB were delivered, this being based on the PBY-5B. Other RAF versions were the Catalina Mk II (28-5ME – 6 examples), 36 Mk IIAs (28-5MC Canso – ordered for the Royal Canadian Air Force – RCAF), 12 Mk IIIAs, based on the PBY-5A, the Mk IVA (97 examples supplied under Lend-Lease), the Mk IVB (200 Canadian-built PB2B-1, equivalent of the PBY-5A), and the GR.Mk VI (61 Canadian-built PB2B-2, based on the PBY-6). Other licence-

1.

VINGTOR

W8424

QL-R

VINGTOR

2.

VIKING

FP314

A

VIKING

3.

W8424

3

VINGTOR

Scrap view shows camouflage colours painted around the name on the nose of W8424 (above)

Below:
Upper plan view showing the typical pattern in Extra Dark Sea Grey and Slate Grey. It is applicable to W8424 after repainting, with code 3-B. Upper wing Type B roundels were used until January 1945

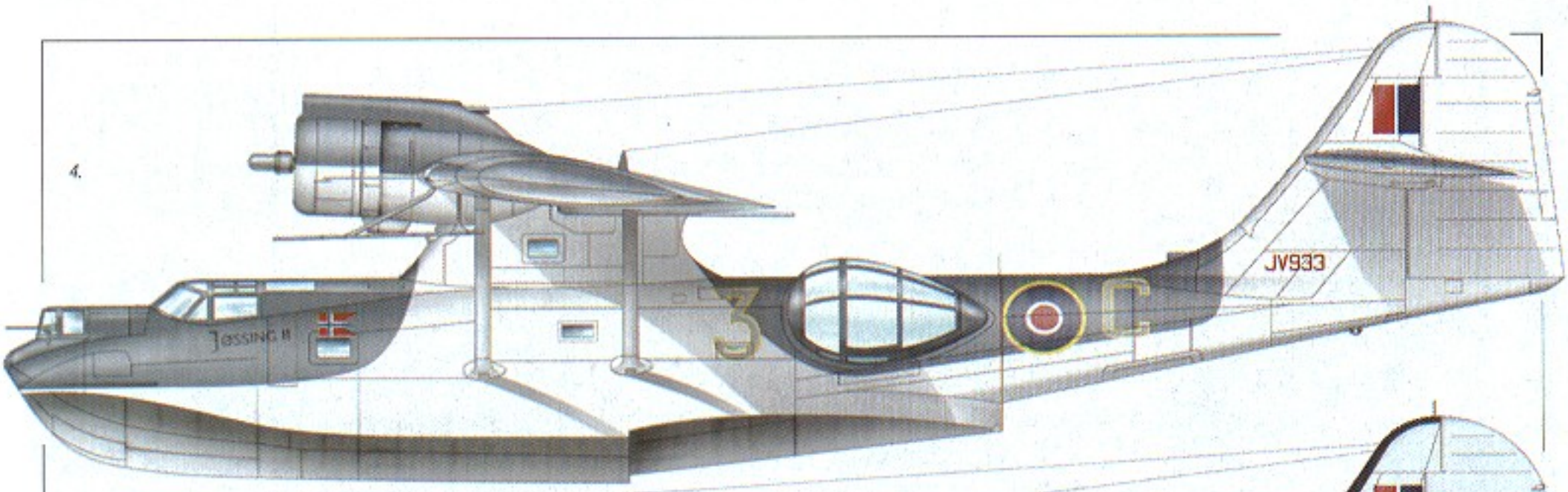
VINGTOR

Captions to Profiles:

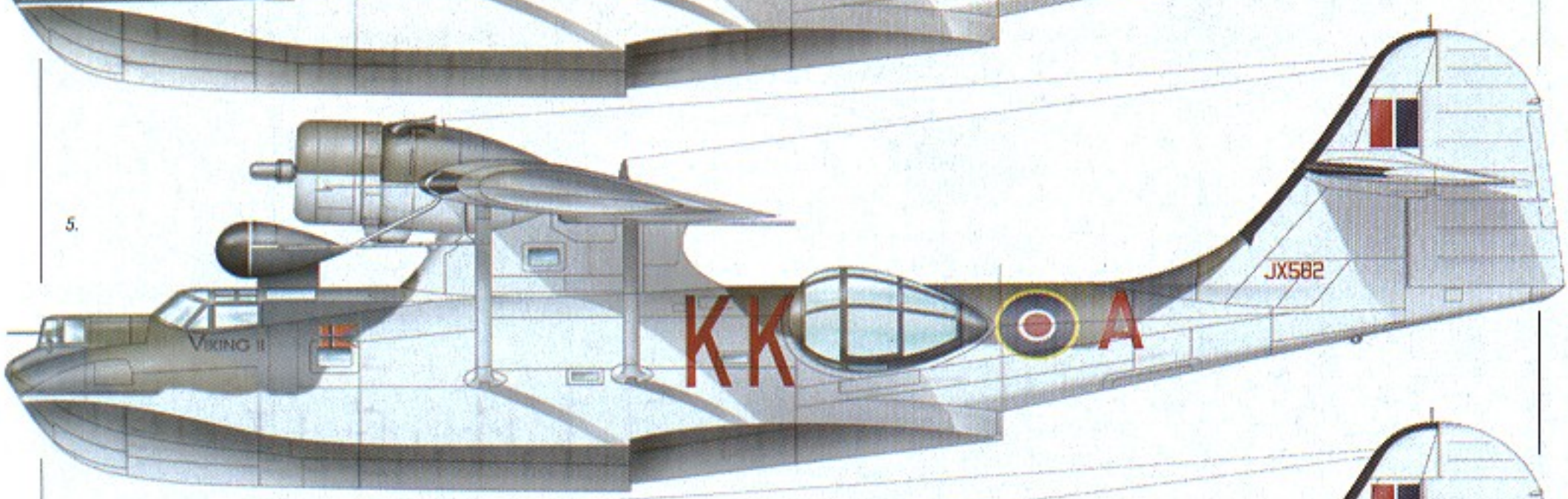
1. *Consolidated Catalina Mk I, W8424/QL-R "Vingtor", 1477 (Norwegian) Flight RAF, Woodhaven, Scotland 1942. Extra Dark Sea Grey/Dark Slate Grey/Sky. "B" roundels above wings. Codes, remaining from its former operator, are 36" high Medium Sea Grey. 8" high U.S. style Night serial numbers. The name "Vingtor" is in Night*
2. *Consolidated Catalina Mk IB, FP314/A "Viking", 333 (Norwegian) Sqn. RAF Woodhaven, Scotland 1943. Extra Dark Sea Grey/Dark Slate Grey/Sky. "B" roundels above wings, "C1" fuselage roundels. Code in in Red; name "Viking" under cockpit. The former U.S. insignia shines through the paint on the nose*
3. *Consolidated Catalina Mk I, W8424 / 3-B "Vingtor", 333 (Norwegian) Sqn. RAF Woodhaven, Scotland 1944. Extra Dark Sea Grey/Dark Slate Grey/Sky, with a slightly different camouflage pattern. "B" roundels above wings, "C1" fuselage roundels. Codes are 36" high in Medium Sea grey outlined Yellow. 8" high U.S. style Night serial. Name "Vingtor" is in Night*

Below: 1:72 scale reproductions of the main early style RAF markings: 6"x8"x8"x27" fin flash; 42" diameter fuselage 'A1' roundel and 90" diameter upper wing roundel

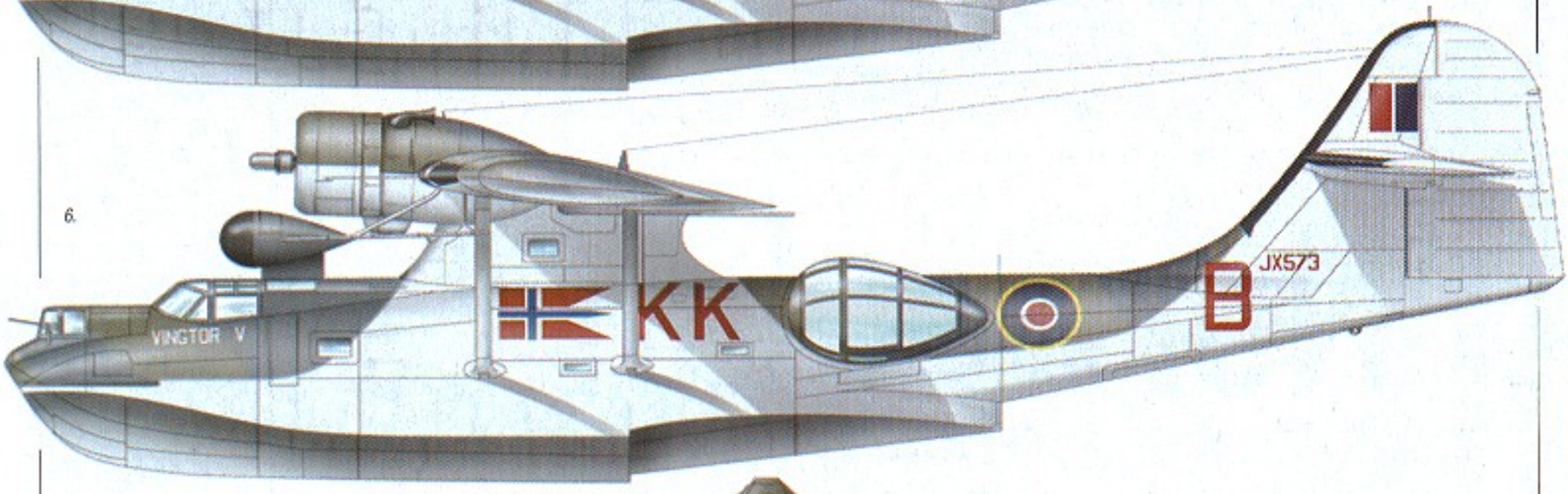
4.

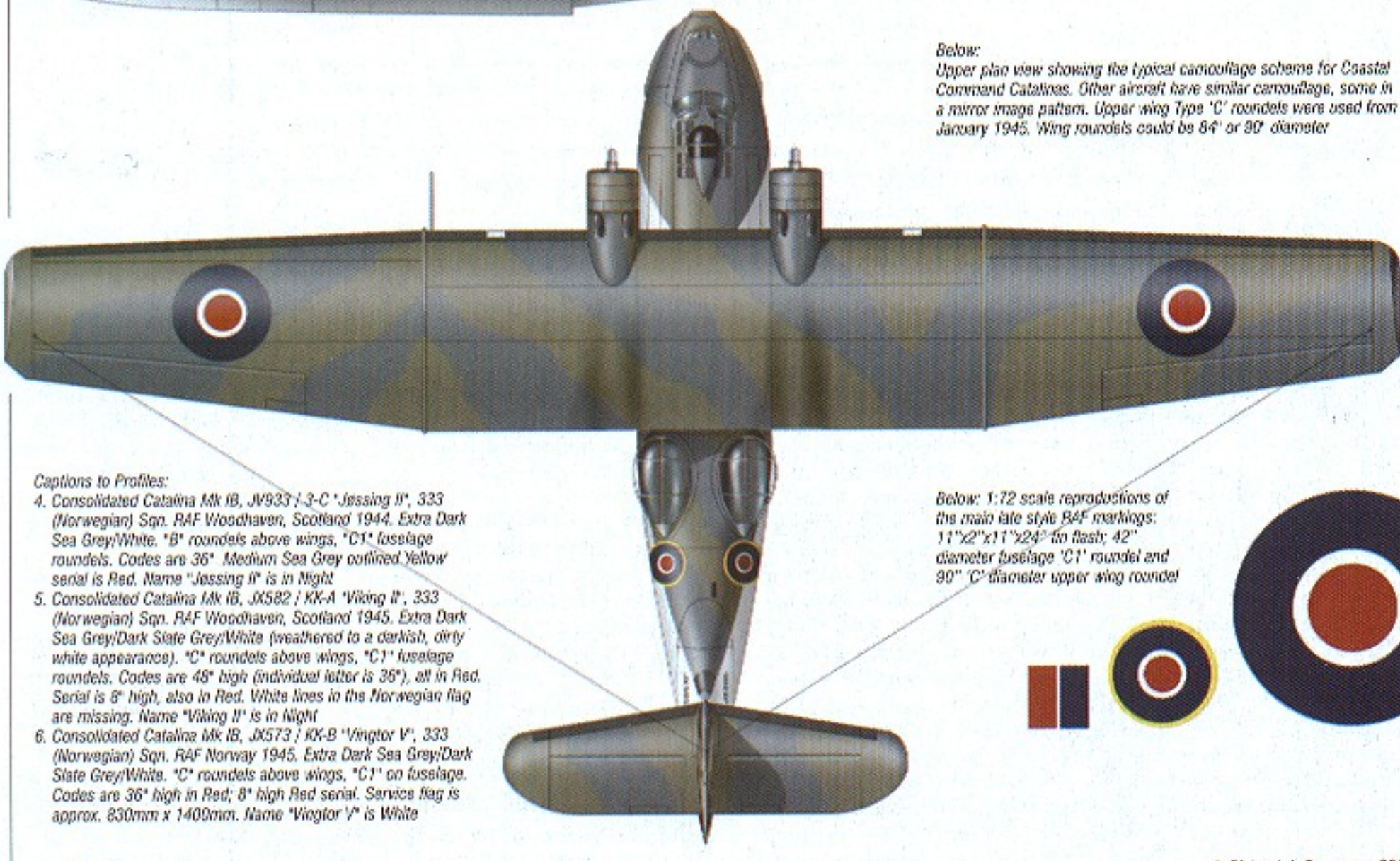


5.



6.



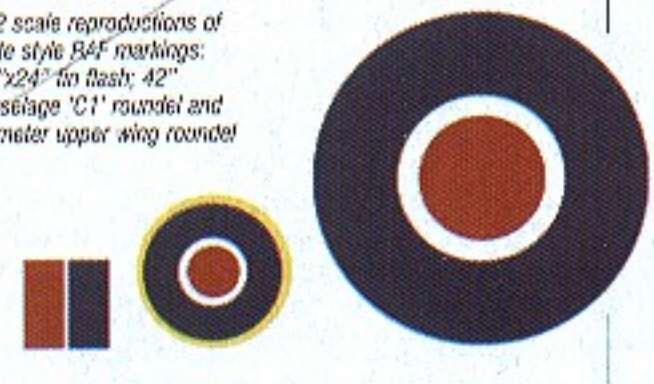


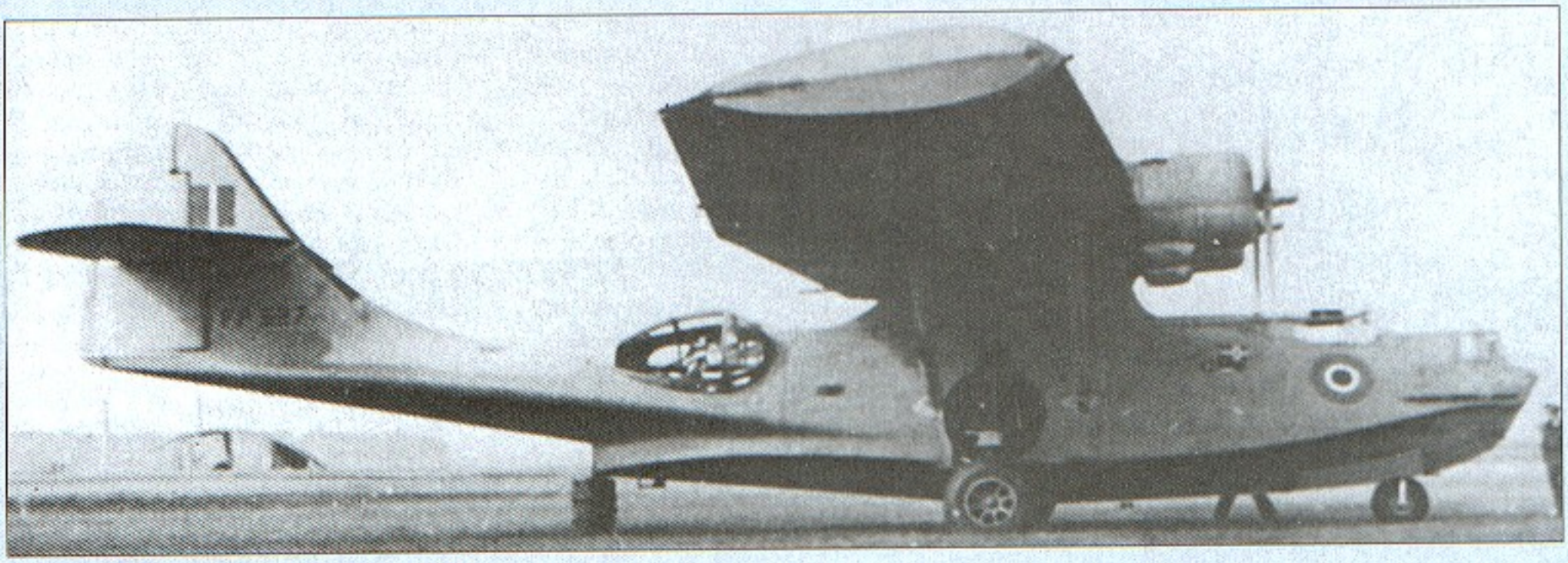
Below:
Upper plan view showing the typical camouflage scheme for Coastal Command Catalinas. Other aircraft have similar camouflage, some in a mirror image pattern. Upper wing Type 'C' roundels were used from January 1945. Wing roundels could be 84" or 90" diameter

Captions to Profiles:

4. *Consolidated Catalina Mk IB, JV933 / 3-C "Jessing II", 333 (Norwegian) Sqn. RAF Woodhaven, Scotland 1944. Extra Dark Sea Grey/White. "B" roundels above wings, "C1" fuselage roundels. Codes are 36" Medium Sea Grey outlined Yellow serial is Red. Name "Jessing II" is in Night*
5. *Consolidated Catalina Mk IB, JX582 / KK-A "Viking II", 333 (Norwegian) Sqn. RAF Woodhaven, Scotland 1945. Extra Dark Sea Grey/Dark Slate Grey/White (weathered to a darkish, dirty white appearance). "C" roundels above wings, "C1" fuselage roundels. Codes are 48" high (individual letter is 36"), all in Red. Serial is 8" high, also in Red. White lines in the Norwegian flag are missing. Name "Viking II" is in Night*
6. *Consolidated Catalina Mk IB, JX573 / KK-B "Vingtor V", 333 (Norwegian) Sqn. RAF Norway 1945. Extra Dark Sea Grey/Dark Slate Grey/White. "C" roundels above wings, "C1" on fuselage. Codes are 36" high in Red; 8" high Red serial. Service flag is approx. 830mm x 1400mm. Name "Vingtor V" is White*

Below: 1:72 scale reproductions of the main late style RAF markings: 11"x2"x11"x24" fin flash; 42" diameter fuselage 'C1' roundel and 90" 'C' diameter upper wing roundel





Catalina Mk IIIA FP527 photographed at Leuchars, summer 1942 (Photo: Knut Olsen)

built versions included those built by Boeing Canada/Vickers Canada as the Canso A based on the PBY-5A (210 examples) and the Vickers Canada PBV-1A (PBY-5A). Boeing Canada also built 40 PBY-5s as Catalina PB2B-1a and six PBY-6 as Catalina PB2B-2s.

Norwegian Catalinas

The first Norwegian Catalina unit within the RAF was formed on 8 February 1942, when the Norwegian Detachment of Coastal Command's N° 210 Squadron was established at Woodhaven, in Scotland. Later that same month the unit received its first Catalina Mk I with which it could begin its operations. These consisted in flying along the Norwegian coastline, delivering and picking up agents and equipment in cooperation with the local resistance movement. A secondary task was submarine hunting, reconnaissance and convoy escort duties, as well as transport flights to Murmansk. This first aircraft (W8424) carried the name 'Vingtor' on its nose, together with a small Norwegian service flag, and retained the QL-R codes denoting its previous operator, N° 413 Squadron, RCAF. The unit received two more Catalinas, 'Jøssing' and 'Viking', in March of the following year, by which time it had been redesignated as N° 1477 (Norwegian)Flight.

On 10 May 1943 it gained squadron status as N° 333 (Norwegian) Squadron, thus becoming the fourth Norwegian Squadron within the RAF, and continued to operate its 'A' Flight with Catalinas, 'B' Flight being equipped with de Havilland Mosquitos. 'Jøssing' was heavily damaged in May 1944 by several shots fired from a German U-Boat and had to be written off. It was replaced by 'Ulabrand', although afterwards the four names were retained, followed by Roman numerals to denominate a replacement, such as JX582 'Viking II'. These names are still carried today on the noses of N° 333 Squadron P-3C Orions.

With the German withdrawal from Northern Norway, 333 Squadron Catalinas were engaged in ferrying all sorts of supplies to the liberated, but impoverished, people in the area. With the end of the war, the squadron moved to Norway on 11 June 1945, taking up its first station at Fornebu just outside Oslo. This was a time of reconstruction from the devastation of war, necessitating the movement of people and equipment throughout the country. The squadron was thus increased with the delivery of three ex-*Luftwaffe* Arado 196A-3s and two Dornier Do 24T-3s. Due to shortage of pilots, some of these aircraft were flown by German personnel. With passage of the squadron's command to Norwegian authorities, the Catalinas (which were still RAF property) were returned to Britain.

The second Norwegian unit to operate Catalinas during World War II was, in fact, the first unit from that country to be formed within the RAF. N° 330 Squadron was formed on 25 April 1941 at Corbett Camp, near Reykjavik, Iceland. Initially it was equipped with 18 Northrop N-3PB seaplanes which had been ordered by the Norwegian Naval Air Service before the war. Apart from mundane tasks, such as reconnaissance, submarine hunting and convoy escort, the unit occasionally operated ambulance flights for the local population. 'A' Flight of N° 330 Squadron was established at Corbett Camp, while 'B' Flight was stationed at Akureyri and 'C' Flight at Budareyri.

While awaiting the replacement of the Northrops with Hudsons, Coastal Command decided that the new type for the unit would be the Catalina. The RAF had received 12 PBY-5As on Lend-Lease basis, designated Catalina Mk IIIA. Six of these were delivered to N° 330 Squadron, with three aircraft held in reserve. This meant that to fulfil its tasks, the unit had to retain six of the Northrops alongside the new flying-boats.

On 1 December 1942, the squadron was ordered to leave Iceland for Oban, in Scotland, to initiate training on Short Sunderlands. 'C' Flight remained at Budarejri flying the Northrops until April 1943 when the squadron was declared operational on the Sunderland. The next move took the unit to Sullom Voe on Shetland where it remained until the end of the war.

Norway's Catalinas Post-War

On 11 June 1945 No. 333 Squadron left Scotland for deployment in Norway. During the following months the Catalinas were flown frequently on transport missions all over Norway. The huge task to rebuild the country required almost an unlimited need for transportation of people and goods, and all available aircraft were used. In addition there was a need for transporting both military personnel and civilian authorities between south and north, thus a regular service between Oslo and Tromsø was established, flying two or three times a week. Once a week the flight was extended all the way to Kirkenes.

At the turn of the year, between 1945 and 1946, the squadron moved from Fornebu to Sola near Stavanger. The four Catalinas were returned to the RAF, while nine new airframes were acquired and flown over from Wig Bay. Their main tasks during the following years consisted of transport, rescue and mine searching missions, while herring spotting was also called for from time to time! A detachment was established at Skattøra, in Tromsø, for the transportation of mail and equipment to the Norwegian Arctic outposts at Spitzbergen, Bjørnøya and Hopen.

As an aircraft was lost in an accident on 8 July 1946, two new Catalinas were acquired from Britain during the spring of 1947. One of these was, however, in a bad shape and had to be scrapped a year later. It was replaced by an aircraft bought from a civilian operator, Vingtor Luftveier.

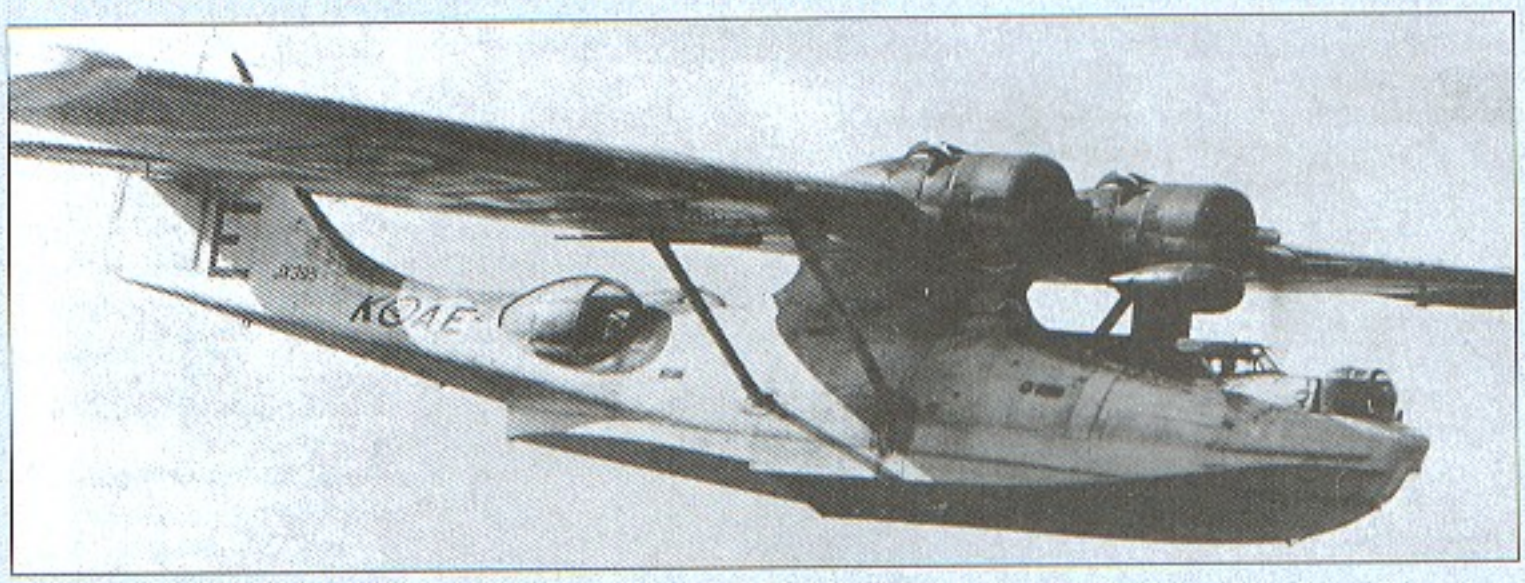
Early in 1950, rumours started spreading that the squadron would be disbanded, and the aircraft sold to Indonesia. The aircraft were worn out and were spending more time in maintenance and repair than in operational use by the squadron. With the outbreak of the Korean war, Norway was committed by NATO to patrol the North Atlantic Ocean. Thus 333 Squadron moved from Sola to Skattøra for the duration of that conflict.

As the Catalina Mk IV had reached a sad state of repair, they were replaced in 1954 by six newly refurbished PBY-5A amphibians delivered through the American weapons supply programme MAP. These aircraft were to remain in service for many years, performing transport and rescue duties, as well as mapping. Other infrequent duties included counting seals and polar bears from the air.

In 1961, Catalina operations by the RNoAF had reached their end. They were replaced by Grumman HU-16B Albatross, nine aircraft delivered to N° 333 Squadron, with a further nine went to N° 330. Five surviving PBY-5As were returned to the United States Air Force (USAF), being flown to Wiesbaden in West Germany.

Camouflage and Markings

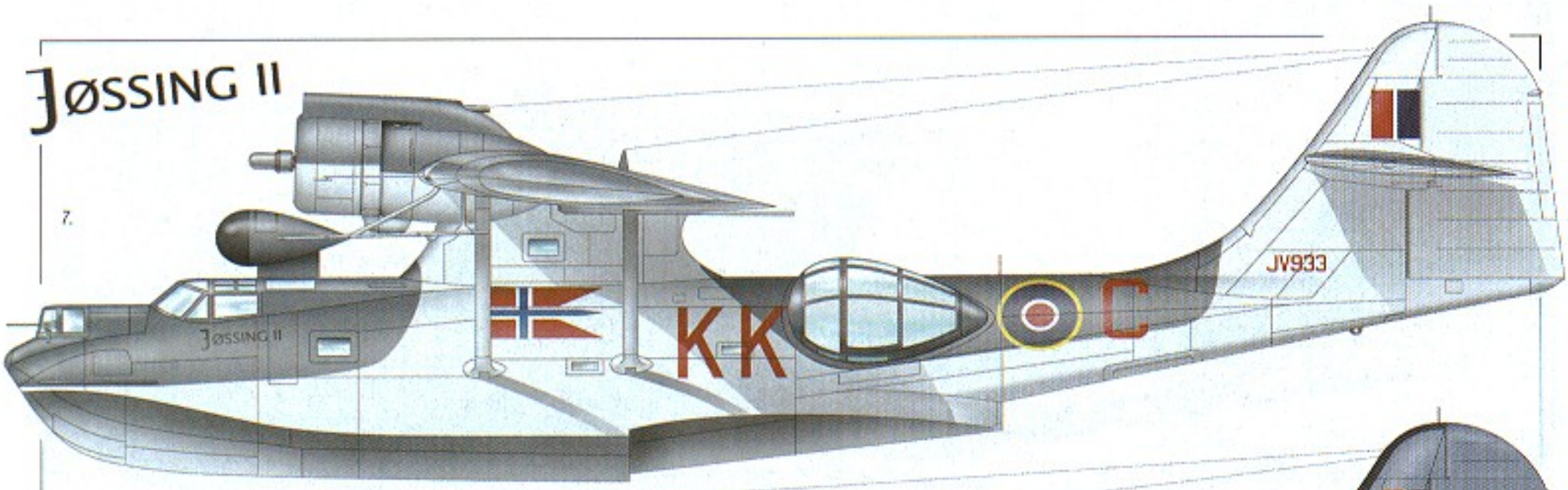
N° 333 Squadron's Catalinas were painted to Coastal Command specifications, as directed for seaplanes. Initially, upper surfaces and fuselage sides were camouflaged in a wavy



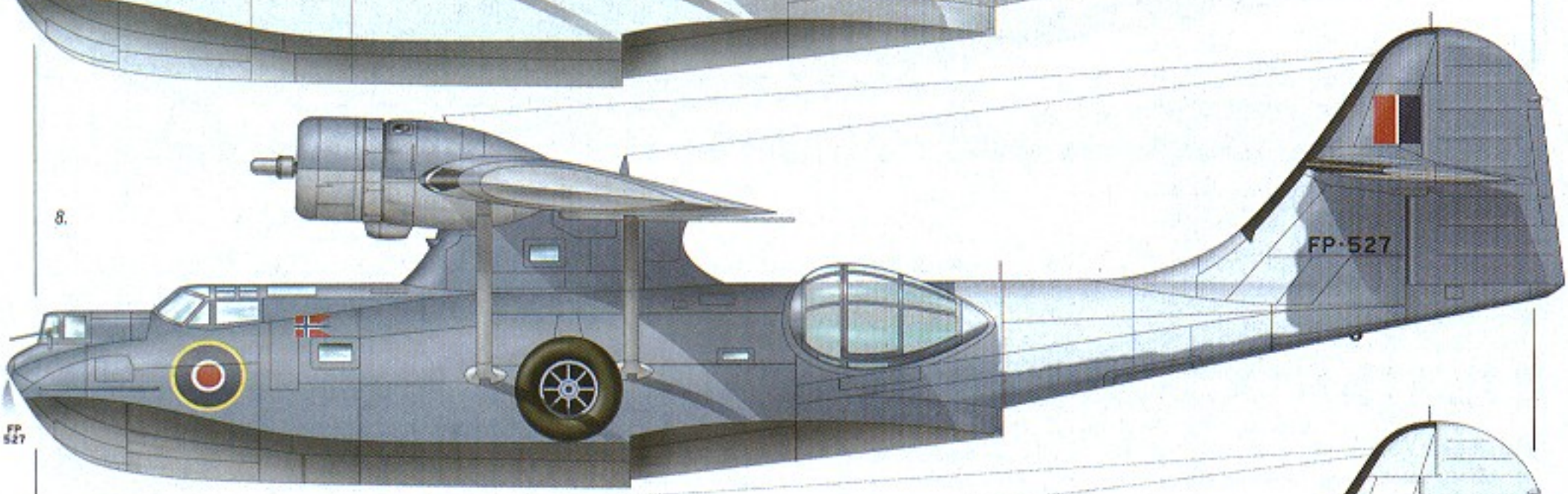
A classical portrait of Catalina JX395/K-AE, probably taken in 1946. Notice the underwing serial number has been overpainted and the addition of RNoAF roundels on the underwing surfaces (RNoAF)

JØSSING II

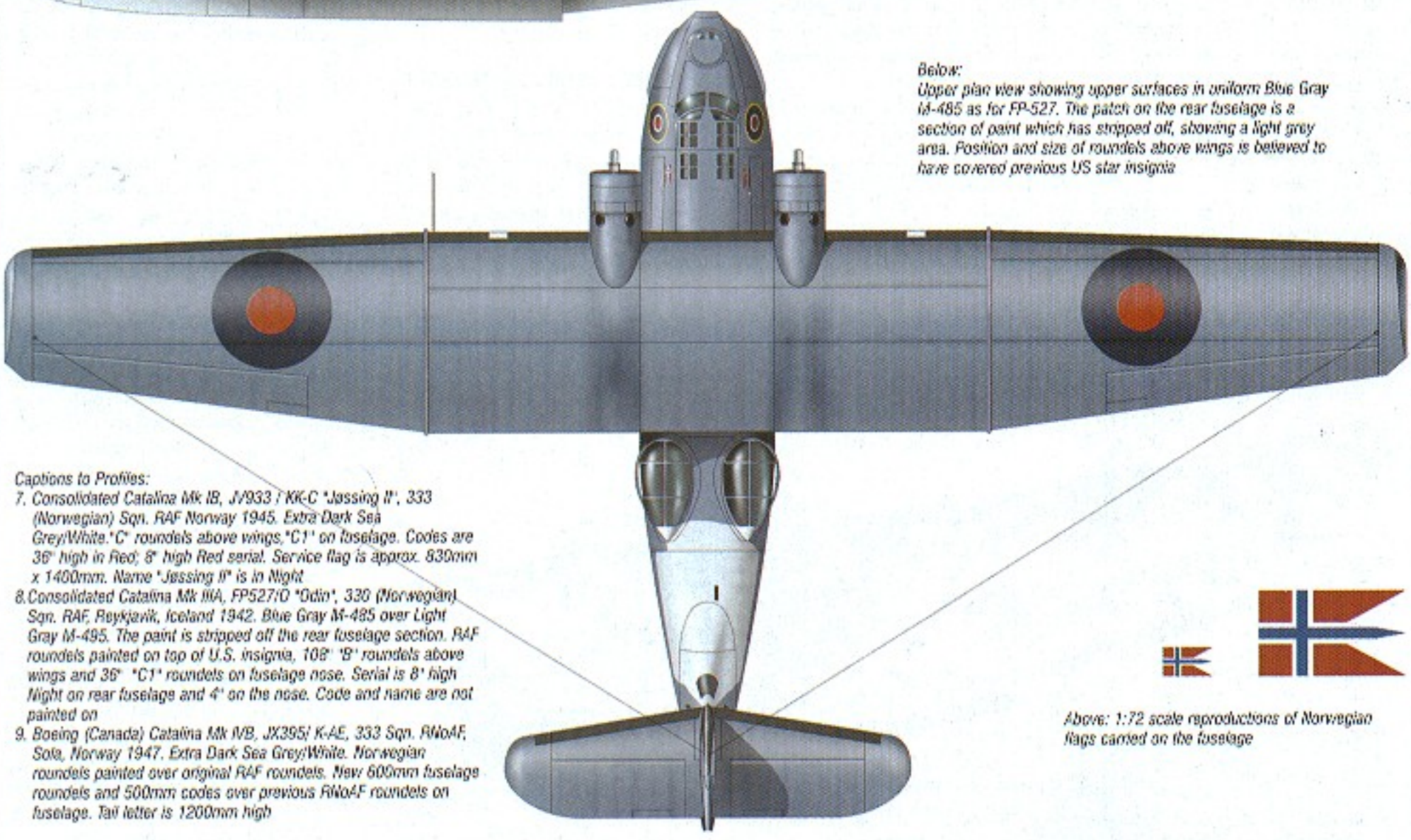
7.



8.



9.



Below:
Upper plan view showing upper surfaces in uniform Blue Gray Id-485 as for FP-527. The patch on the rear fuselage is a section of paint which has stripped off, showing a light grey area. Position and size of roundels above wings is believed to have covered previous US star insignia

Captions to Profiles:

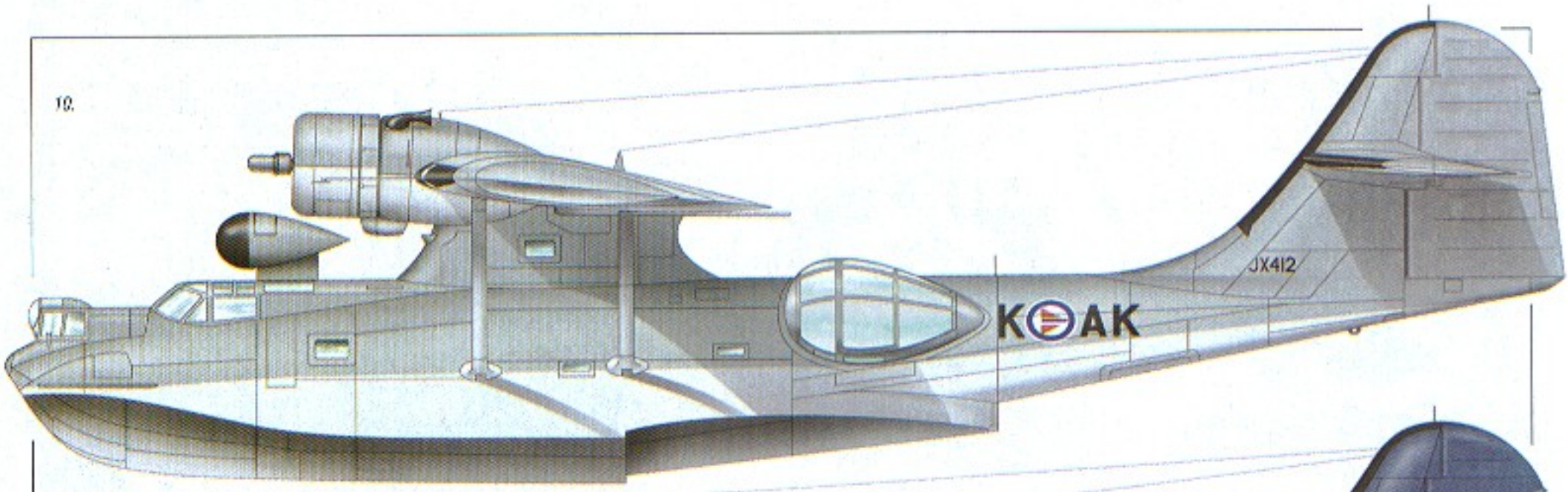
7. Consolidated Catalina Mk IB, JV933 / KK-C "Jassing II", 333 (Norwegian) Sqn. RAF Norway 1945. Extra Dark Sea Grey/White."C" roundels above wings,"C1" on fuselage. Codes are 36" high in Red; 8" high Red serial. Service flag is approx. 630mm x 1400mm. Name "Jassing II" is in Night

8.Consolidated Catalina Mk IIIA, FP527/D "Odin", 330 (Norwegian) Sqn. RAF, Reykjavik, Iceland 1942. Blue Gray M-485 over Light Gray M-495. The paint is stripped off the rear fuselage section. RAF roundels painted on top of U.S. insignia, 108" "B" roundels above wings and 36" "C1" roundels on fuselage nose. Serial is 8" high Night on rear fuselage and 4" on the nose. Code and name are not painted on

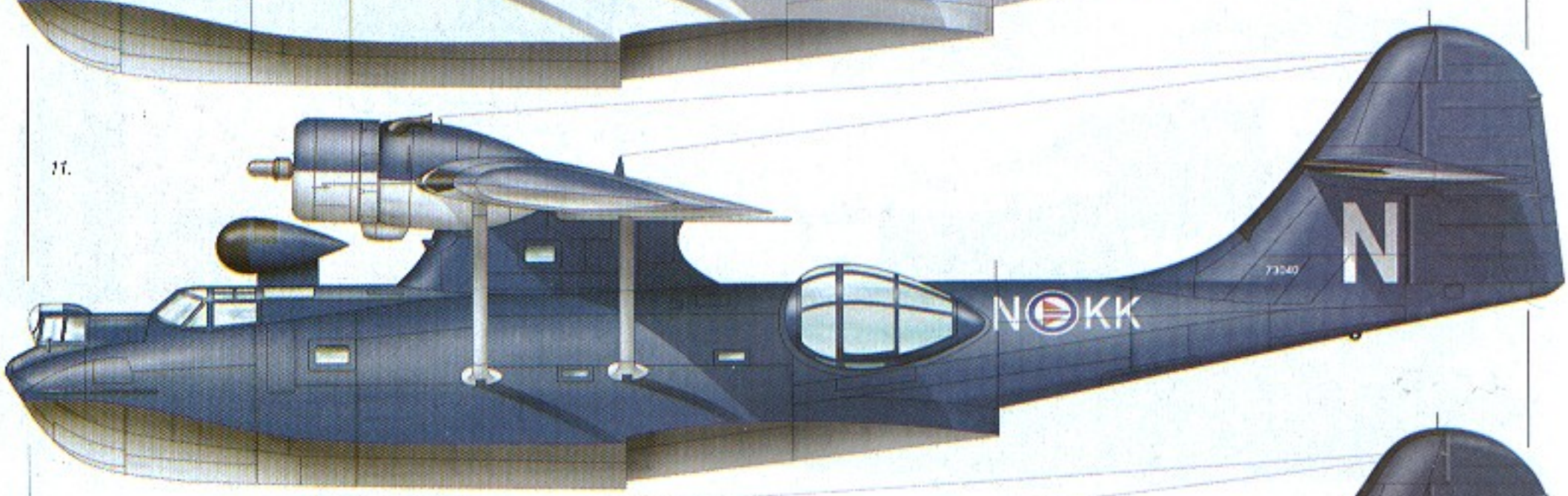
9. Boeing (Canada) Catalina Mk IVB, JX395/ K-AE, 333 Sqn. RNoAF, Sola, Norway 1947. Extra Dark Sea Grey/White. Norwegian roundels painted over original RAF roundels. New 600mm fuselage roundels and 500mm codes over previous RNoAF roundels on fuselage. Tail letter is 1200mm high

Above: 1:72 scale reproductions of Norwegian flags carried on the fuselage

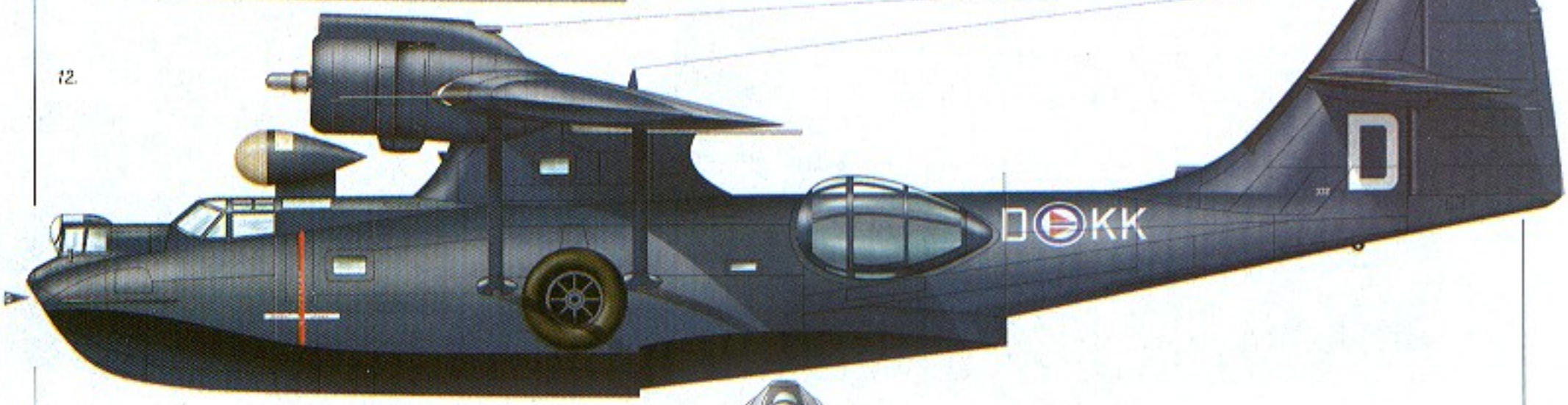
10.

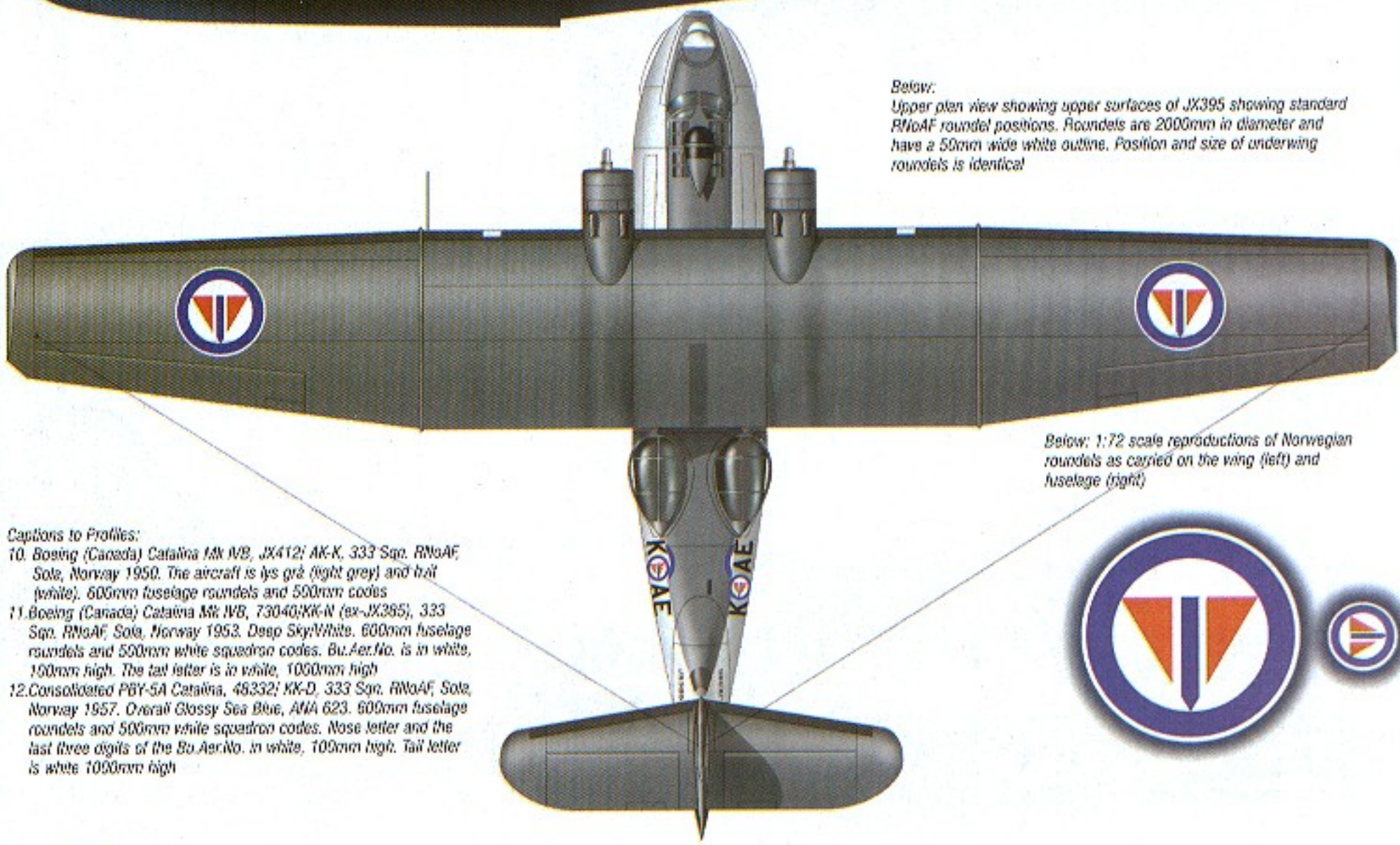


11.



12.





Below:
Upper plan view showing upper surfaces of JX395 showing standard RNoAF roundel positions. Roundels are 2000mm in diameter and have a 50mm wide white outline. Position and size of underwing roundels is identical

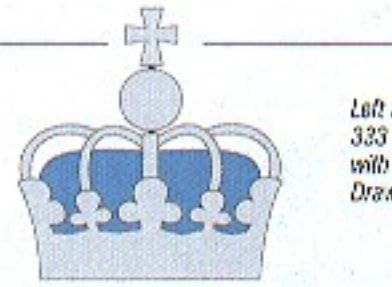
Below: 1:72 scale reproductions of Norwegian roundels as carried on the wing (left) and fuselage (right)

Captions to Profiles:

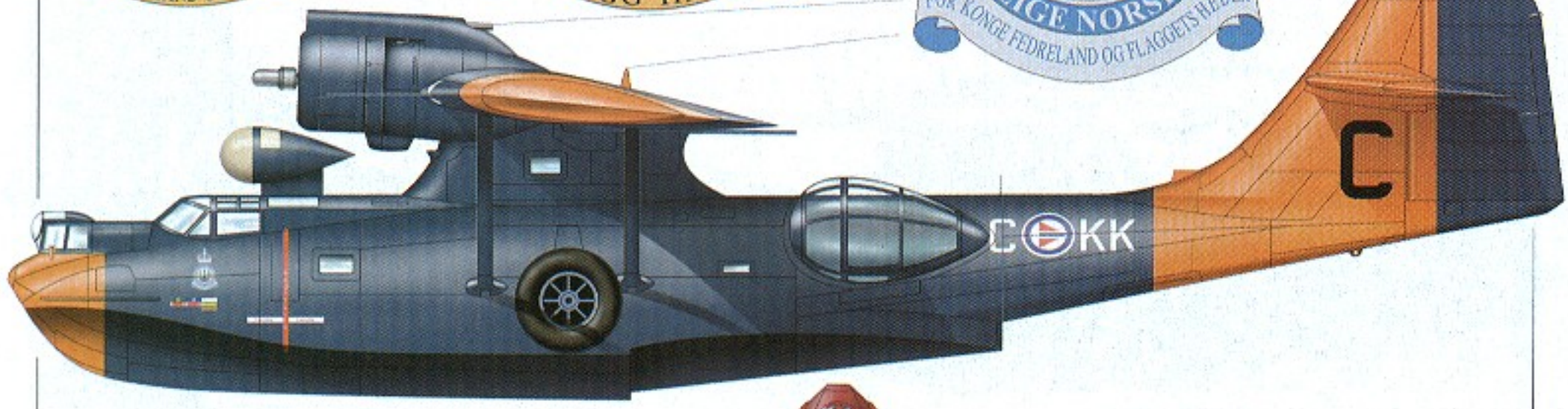
10. Boeing (Canada) Catalina Mk IVB, JX412; AK-K, 333 Sqn. RNoAF, Sola, Norway 1950. The aircraft is lys grå (light grey) and hvit (white). 600mm fuselage roundels and 500mm codes

11.Boeing (Canada) Catalina Mk IVB, 73040;KK-N (ex-JX395), 333 Sqn. RNoAF, Sola, Norway 1953. Deep Sky/White. 600mm fuselage roundels and 500mm white squadron codes. Bu.Aer.No. is in white, 100mm high. The tail letter is in white, 1000mm high

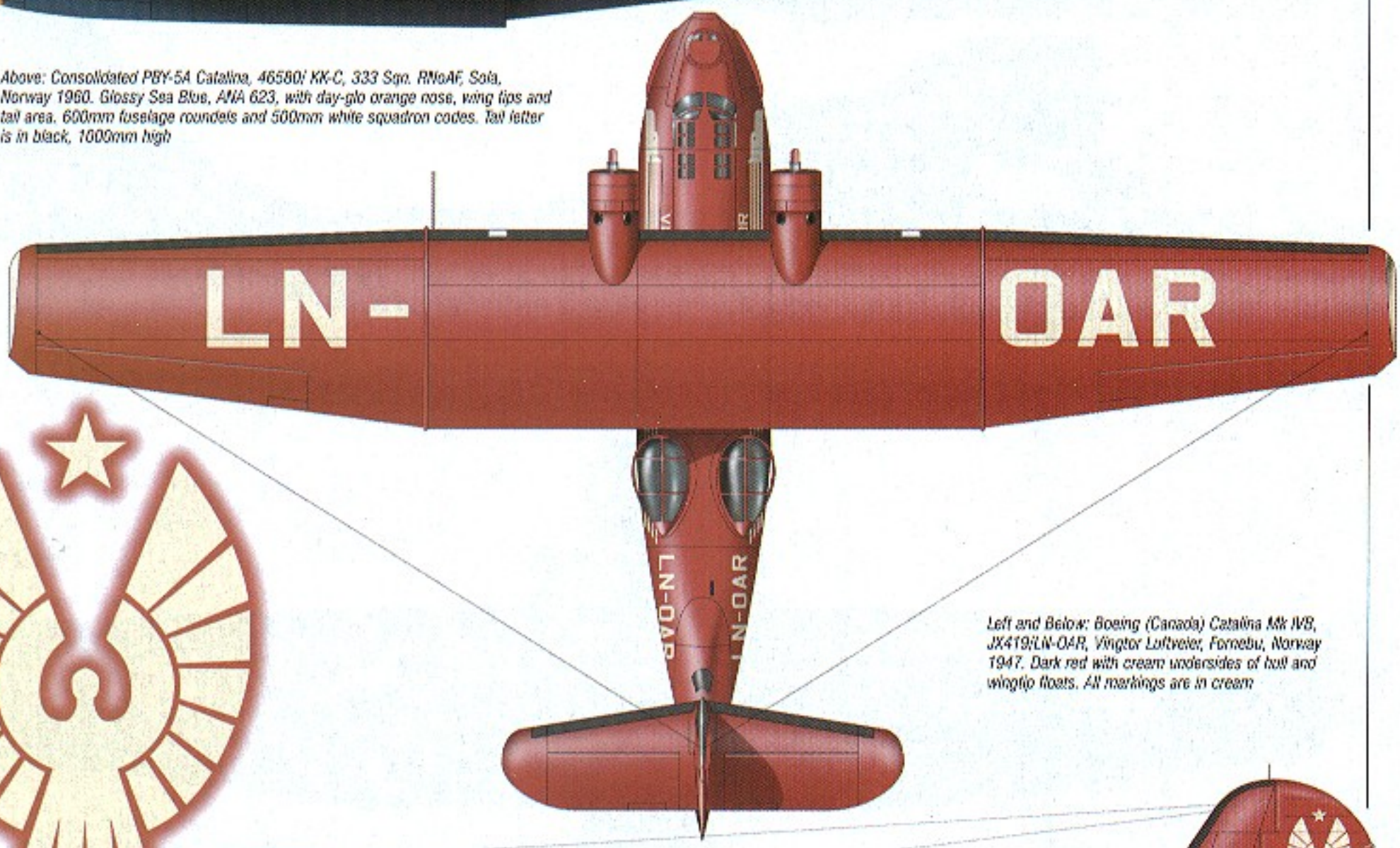
12.Consolidated PBY-5A Catalina, 46332; KK-D, 333 Sqn. RNoAF, Sola, Norway 1957. Overall Glossy Sea Blue, AMA 623. 600mm fuselage roundels and 500mm white squadron codes. Nose letter and the last three digits of the Bu.Aer.No. in white, 100mm high. Tail letter is white 1000mm high

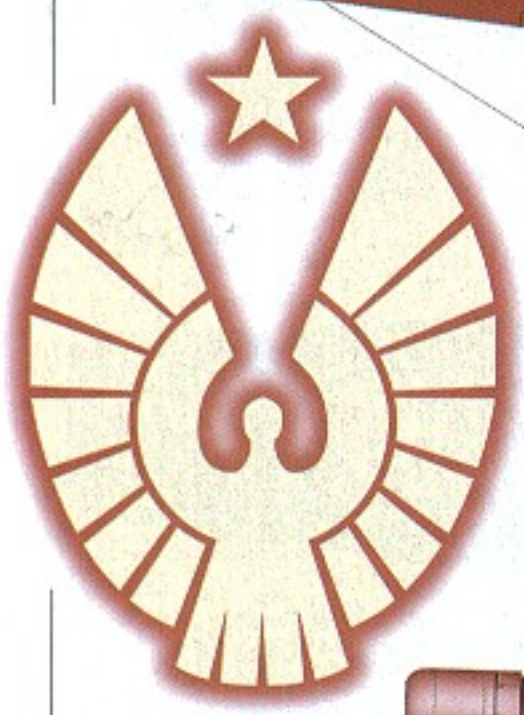


Left to Right: Squadron crests of № 333 and 330 Squadrons, RAF, together with that of № 333 Skv., RNoAF
Drawings: © Nils Mathisrud

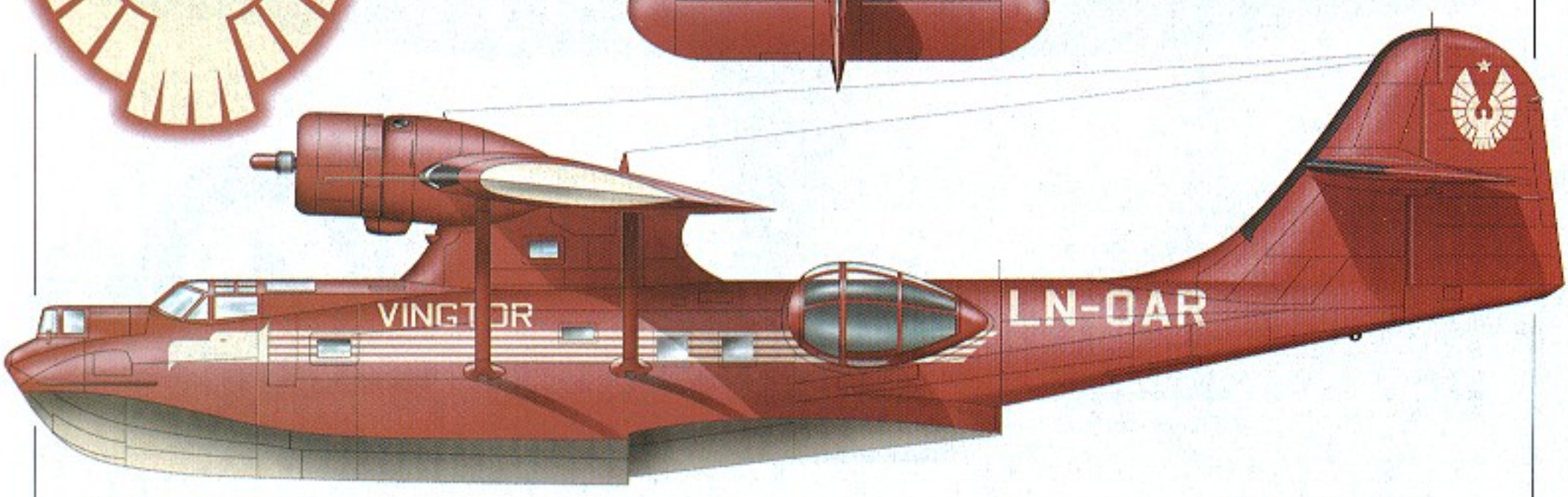


Above: Consolidated PBY-5A Catalina, 46580/ KK-C, 333 Sqn. RNoAF, Sola, Norway 1960. Glossy Sea Blue, AMA 623, with day-glo orange nose, wing tips and tail area. 600mm fuselage roundels and 500mm white squadron codes. Tail letter is in black, 1000mm high





Left and Below: Boeing (Canada) Catalina Mk IVB, JX419/LN-OAR, Vingtor Luftveier, Fornebu, Norway 1947. Dark red with cream undersides of hull and wingtip floats. All markings are in cream



5 of 5

The Commander of the Armed Forces, HRH Prince Olav, toured the Norwegian coastline in July 1945. Here he is sailing out to JX573/KK-B, one of two Catalinas used on the tour (via Jon Arne Bergseth)

pattern of Extra Dark Sea Grey and Dark Slate Grey, with Sky undersides. Whether British paint or their American equivalents were used is not certain. As from 8 October 1944, a new scheme was specified, with Extra Dark Sea Grey only on the upper surfaces, while fuselage sides and lower surfaces were painted White (undersurface areas to be gloss). However, some aircraft retained the two upper surface camouflage colours, and only the fuselage sides and lower surfaces were painted white.

Roundels were carried above the wings, but not underneath. Both 84" and 90" diameter were used for the upper 'B' Type roundels until 2 January 1945, when these were changed to Type 'C'. Fuselage roundels were 42" in diameter, Type 'A1' prior to 21 May 1942, and Type 'C1' after that date. Fin markings switched from 8"x8"x8"x27" to 11"x2"x11"x24" on the same date.

Initially these aircraft did not carry any dedicated code letters, but carried those of their previous users. Eventually it was decided that a single 36" high red letter should be carried. The squadron never exceeded four Catalinas in strength, thus codes ranging between A and D were used. At some time between late 1943 and early 1944 a number '3' was added to the single letter, before the squadron code KK was allocated to N° 333 Squadron. In addition to the name, all aircraft carried a small Norwegian service flag on the nose. At the end of July 1945, two Catalinas (JX573/KK-B and JV933/KK-C) were used to carry a delegation including the Commander of the Armed Forces, Crown Prince Olav, on a tour along the entire Norwegian coastline. On this occasion the small Norwegian service flags were replaced by much larger flags.

Catalinas Mk IIIA acquired by N° 330 squadron were painted in the standard US BuAer camouflage colours of Blue Gray M-485 over Light Gray M-495. RAF roundels were painted over US stars. Initially the aircraft carried Type 'A1' roundels on the nose, these being changed to Type 'C1' as from 21 May 1942. Upon delivery the aircraft had non-standard fin flashes, positioned underneath the tailplanes, but these were soon replaced to the correct style and position. No photographic evidence is available to determine whether code letters were painted on these aircraft.

Post-War Colours

Upon arrival in Norway, the Catalinas retained the standard RAF camouflage and markings, with the addition of a small Norwegian service flag on each side of the cockpit. Shortly before or after arrival in Norway at least three aircraft (KK-A, KK-B and KK-C) had the small service flags replaced by much larger flags, applied on the fuselage between the wing struts. The smaller flags were most certainly painted in the dull British roundel colours, but it is not known whether the larger flags were applied with dull or bright colours.

On transfer of command to the Royal Norwegian Air Force (RNoAF)a new Norwegian roundel was introduced. At first this was painted on top of the RAF roundels and sizes varied from aircraft to aircraft. In some cases they were applied in the same size as the RAF roundels, while other aircraft carried smaller ones.

The RAF coding style (squadron code and individual letter) was phased out in 1946 and replaced by a new system with a single letter specifying the aircraft type and a two-letter combination specifying the individual aircraft. The letter K was assigned to the Catalina, and the two-letter combination started with AB, and continued consecutively up to AN. Had there been more aircraft of the type, the code would have continued to AZ, before switching to BA, BB and so forth. The combination AA was never used, neither were the letters J and Q. With this system a registration code was assigned to a single aircraft only, and never re-used.

The aircraft were eventually repainted, with locally manufactured paint (supplied by Bengalac). The colours can be described as follows:

- *Lys grå* (light grey) - something between BS318C/627 (Light Aircraft Grey) and FS36473 (ADC Gray)
- *Hvit* (white)

Markings were standardised at 2000mm above the wings and 600mm on the fuselage. On dark surfaces, a 50mm white outer border was applied. Codes were 500mm high in white, with the aircraft type letter to the left of the roundel and the individual two-letter code to the right. This meant that fuselage roundels were positioned asymmetrically on the opposing sides of the fuselage. The last letter of the two-letter code was on some aircraft repeated 1200mm high on the fin. Serial number were 8" high.

This aircraft type coding system was short-lived. The removal of the squadron codes was very unpopular among squadron personnel who felt that the their esprit de corps had been lost. In 1951 the old RAF system was partly reintroduced. Second line aircraft retained the aircraft type codes. All Catalina airframes were repainted with mørk blå (dark blue) (probably matching the British colour Deep Sky) with white undersides, and the new markings. Squadron codes were now painted aft of the roundel on each side of the fuselage, and the individual letter ahead, thus making the position of the roundels symmetrical.

British serials were for some reason replaced by USN Bu.Aer. numbers, 100mm high.

The PBY-5A amphibians were painted in overall Glossy Sea Blue, ANA 623 overall. Otherwise, markings were the same as before. It is reported that, for a period of time, two aircraft had their nose, tail and wing tips painted day-glo orange for operations over Arctic seas.

Into Civilian Hands

Just after the end of World War II, several groups of people with air force service experience started their own airline company. One of these was *Vingtor Luftveier* (Vingtor Airways) which was founded in the spring of 1946 in Sandefjord. One of the founders had served as a mechanic with N° 333 Squadron, which explains the choice of the name 'Vingtor'.

During its short life, Vingtor Luftveier operated a number of interesting ex-military aircraft, including five Beechcraft UC-43 Traveller (Staggerwing), two Handley Page Halifax C Mk 8 and two Consolidated Catalina Mk IVb.

Vingtor Luftveier faced long and stiff bureaucratic problems in obtaining licences to fly scheduled air services. Such licences which were never granted, but the company was allowed to operate a flying taxi service. With the economy in difficulty, the company was forced into bankruptcy in July 1948.

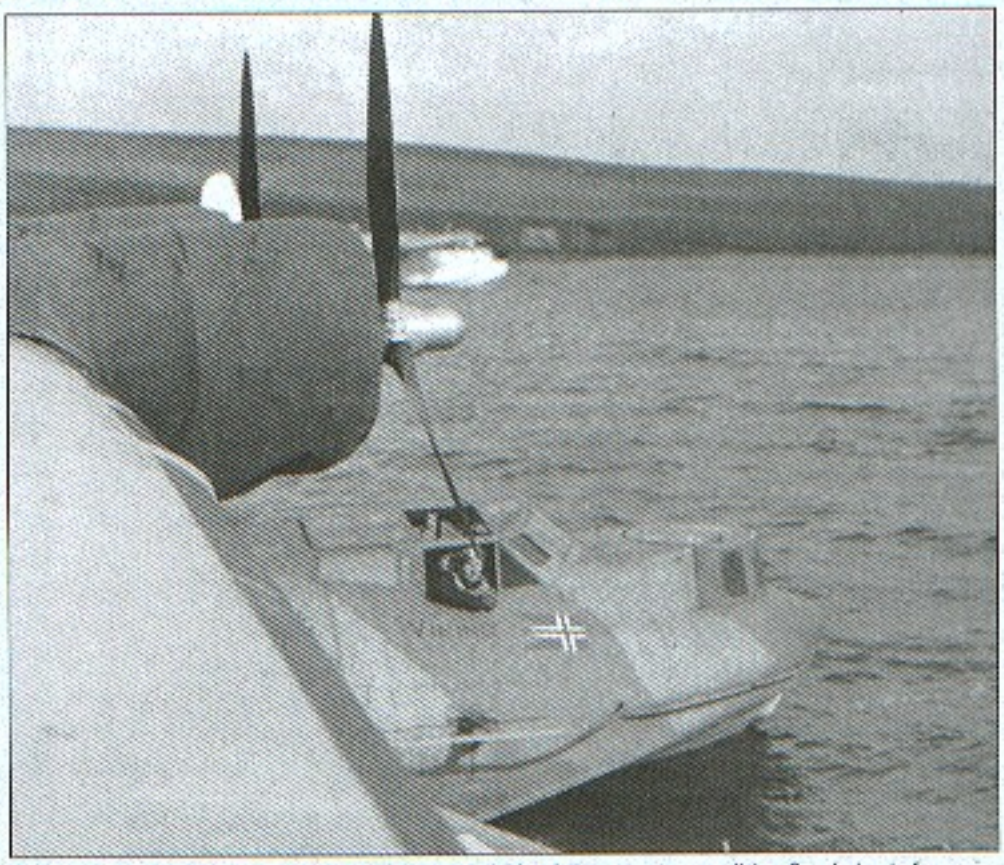
Both Catalinas were ex-RAF aircraft built at Boeing of Canada in Vancouver, and bought from the Ministry of Supply on 4 February 1947. They were delivered from N° 57 MU and flown to Horten in May and June. JX381 was registered LN-OAP. After the airline's closure, this aircraft was sold to the air force where it served until it crashed in 1954. JX419 received the registration LN-OAR and had an even more unkind fate. It crashed already in August 1947, thankfully without the loss of crew or passengers.

Vingtor Luftveier's livery was dark red with cream trim. The exact hues are not known. A cheatline with an eagle's or dragon's head adorned the fuselage on several of the aircraft, at least the bigger types such as the Catalina and Halifax.

Richard J. Caruana

Acknowledgments

I'm deeply indebted to Nils Mathisrud for his patience and dedication, and for providing most of the material for this feature, including base drawings and colour schemes, unit badges, photographs and a big chunk of the text.



The crew on FP314 "Viking" of No.333 Squadron visiting fellow countrymen flying Sunderlands from No. 330 Squadron at Sullom Voe, Shetland. An interesting detail is the camouflaged antenna (via Norwegian Defence Museum)