

With the Pollensa's mountain range background, HD 5-4 runs for take-off on mirror-like waters.
J M LOMAS



SPAIN'S BIG 'BOATS

AE GONZALO AVILA CRUZ AND PATRICIO 'PATO' HEBRERO

HAVING FACED many changes and challenges in their operation, the Spanish Air Force's dwindling force of Dornier Do 24T-3 tri-motor flying-boats entered their second decade in service as the mid-1950s approached. In May 1954 the DGIM (State Material and Industry Office) ordered the Do 24s to receive new tail designations, in accordance with a directive issued by the Ejército del Aire (EdA – Spanish Air Force) in December 1953. The oldest aircraft would carry their official denominations on their tails – in this case, 'DO-24-T3' followed by the aircraft's individual number, instead of the former 'HR.5-xx' serial. Known fuselage/tail number links were DO-24-T3-11 '51-1', DO-24-T3-9 '51-3' (later '51-2'), DO-24-T3-7 '51-4'. By this time, He 114A-5 was '51-2', unit markings being applied to both Do 24s and He 114s randomly. At the end of the year, the official EdA inventory included seven serviceable Do 24s.

In 1953 MAB became worried about the degrading of the aircraft's fuel tanks. The view of the maintenance technicians was that the whole Do 24 fleet should be grounded unless the problem could be solved in a short space of time. At first, it was intended that CASA should build new tanks but this looked like turning into an interminable process. There were no drawings and Spanish industry was unable to build good quality tanks. Furthermore, acquiring a reliable electric welding system became impossible and the examples delivered suffered from fuel leakages shortly after being installed. There were two main reasons for the rapid damage to the repaired tanks – corrosion owing to the fuel itself and the heavy impact suffered by the flosselstummeln (stub-wings) – inside which the tanks were

PART TWO

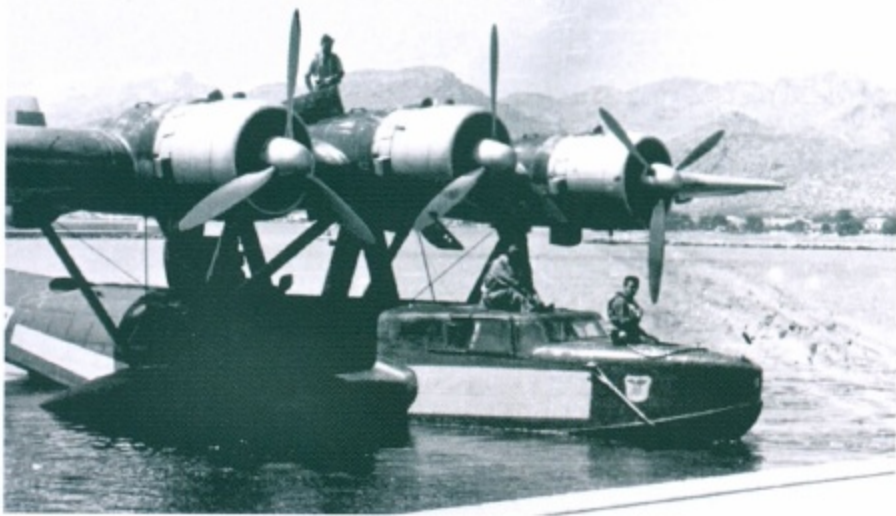
**DORNIER DO 24
FLYING-BOATS IN
SPANISH SERVICE**

placed – during touchdown. At last, in May 1958, the first 14 of the replacement tanks built by CASA were transported from Seville to Pollensa aboard a Grumman Albatross. Sadly, it was not long before the fuel cocks and submerged pumps failed and the tanks had to be returned to CASA at Seville. In September, the tanks' faulty elements were allegedly repaired, and re-delivered to Pollensa. They were quickly installed in HR.5-7, but after a few days of operation – during which the aircraft remained anchored in Pollensa Bay – they again began to show signs of corrosion. Finally, CASA carried out a process of treating them with Alodine, following this up with a coat of special paint Dornier sent to the Spanish Embassy in Rome. Fortunately, this turned out to be the last chapter in this gloomy story – 14 years after the Do 24s first arrived in Spain!

Early in 1953, an old problem reared its head again – the aircraft urgently needed protecting with anti-corrosion paint. In March the Pollensa workshop was ordered to paint three of them in 'air rescue colours', but the work was delayed over and over again owing to lack of material and labour. Once again, the EdA fell back on Spanish industry. Several varnish and paint manufacturers provided experimental material, but trials on the aircraft proved them all ineffective, pieces of paint flaking away after a few flights in the maritime environment. At last, in June 1954 a combination of primer, varnish and some chemical agents was shown to be effective and the aircraft began to be seen in an overall 'bottle green' finish, with large yellow fuselage stripes and wingtips. According to a few sources – some veteran pilots deny the story – they were nicknamed 'Guardias Civiles' (Civil Guard, whose members usually wear uniforms of a roughly similar colour, often with yellow straps).

Late in April 1953 the HR.5-11 and -12 carried out a rescue operation lasting over 14 hours, helping the crew of the motor cruiser *Rollon*. In May the same year the time between overhaul for the Do 24s and their Fafnirs was reduced to 200 hours operating time. In July and August, three aircraft were fitted with the BC-375E communications set (like those which equipped the CASA C-2111 – He 111), the remaining Do 24s receiving it soon afterwards.

In September, 51 Grupo's Do 24s, HR.5-1, -9 and -12 carried out combined exercises with French Aeronavale units in the Mediterranean, and in November the Do 24s dropped smoke-bombs on the sea to pinpoint specific areas. In October, the tri-motors took part in manoeuvres in support of Spanish Navy (Armada) vessels off the south-eastern coast of Spain. These took place near the mouth of the Río Tinto (Huelva), where the flying-boats were deployed. The area contains major copper mines, with the result that sulphuric acid gets



Some time after the creation of the 58 Escuadrilla, the four Do 24s began to show the 'SAR' insignia on their noses, as on '58-2', ex HR.5-11, anchored at Pollensa.

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into the waters of the river. This phenomenon caused some damage to the hulls and necessitated a laborious process of washing down the paintwork, further worsening the Do 24s' low serviceability rate.

By the end of 1953, 51 Grupo was flying HR.5-1, -9 and -12, while HR.5-3, -6, -7, -8 and -11 remained at Son San Juan awaiting major repair. This had been held up by a shortage of material and labour, despite the fact that HR.5-4, -5 and -10 had been serving as spare sources for the others. Perhaps because no further spare parts could be obtained from these airframes, HR.5-3 and -8 were not considered repairable, but were seen as yet another source of spares, no effort being made to return them to airworthy condition. This meant that the true complement of 51 Grupo was six aircraft, despite what was stated in the official maintenance documents. On January 30, 1954, HR.5-10 was officially withdrawn from use, and on May 28 that year HR.5-4 followed suit: both aircraft had been hangared for years.

Then there were five

February and March brought two new rescues at Pollensa (French aircraft which had crashed) and at Melilla, carried out by HR.5-1 and -6. In June, 51 Grupo was disbanded, giving place to the newly-created 51 Escuadrilla de Salvamento (51st Rescue Flight), which had a true complement of six (though only two were serviceable at the time) Do 24s and three (only two serviceable) He 114s.

On November 9, 1954, DO-24-T-3-1, which had just begun to undergo servicing at the Pollensa workshop, was destroyed by fire following a gas explosion inside its hangar. Five Do 24s then remained airworthy, though only one was serviceable

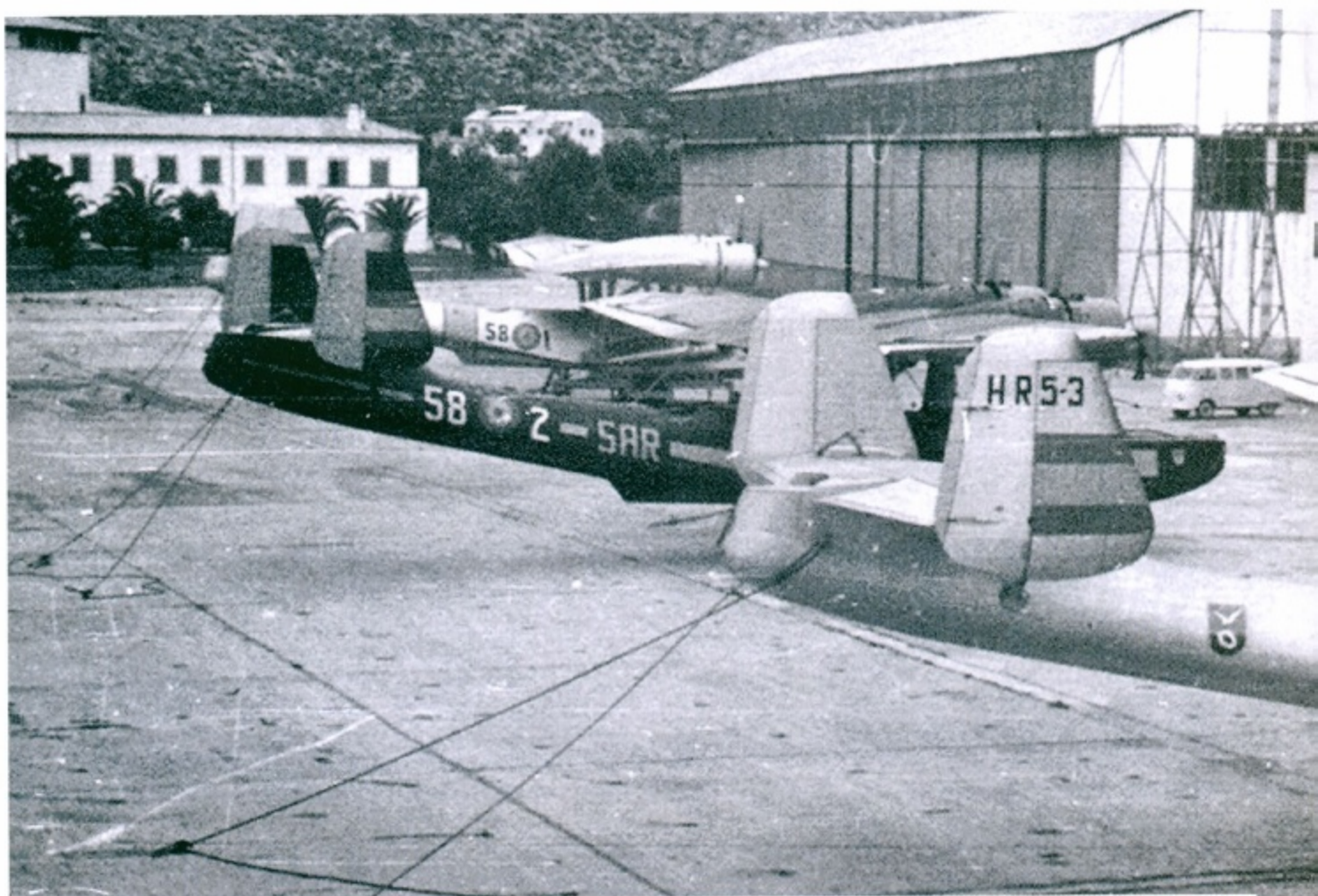
In the summer of 1958, 58 Escuadrilla was formed with the four Do 24 survivors. The seventh example, wearing the 58 Escuadrilla's colours and 'DO-24-T-3-7', received the code '58-1'. Engine cowlings were yellow painted.

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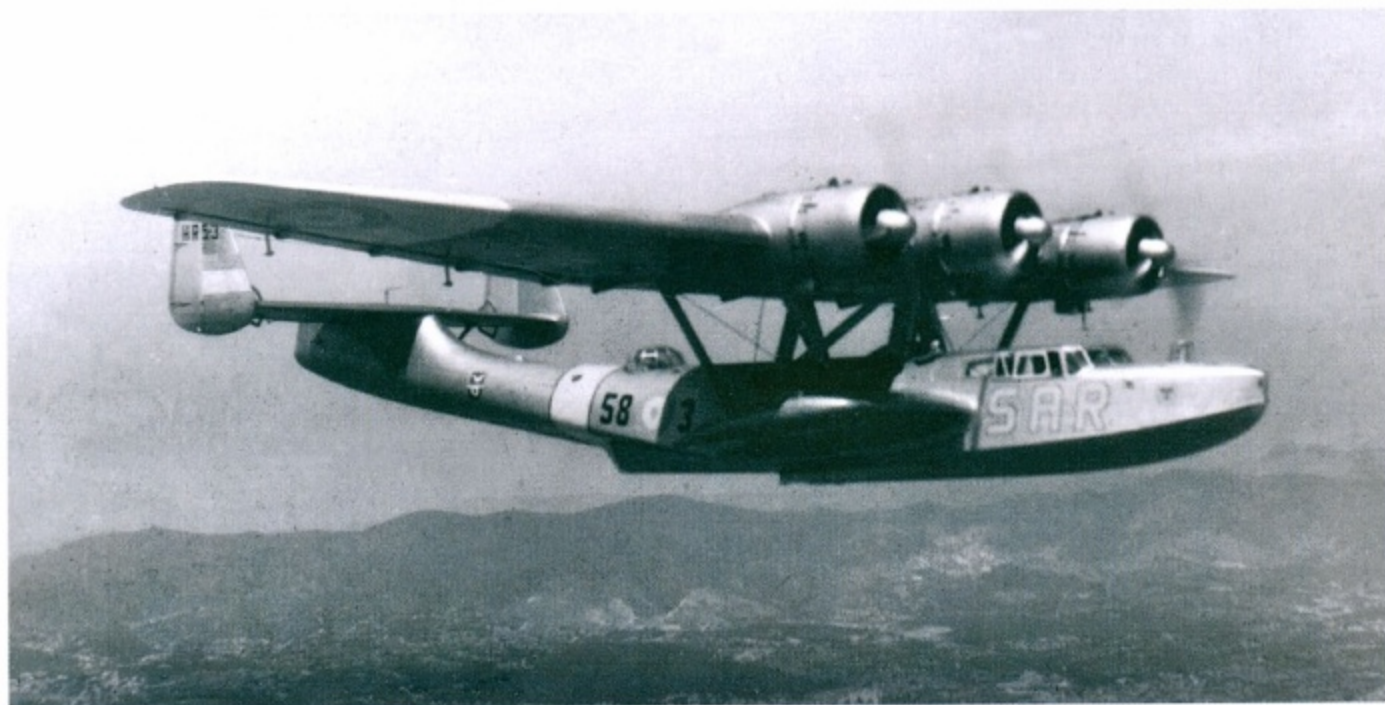
In the summer of 1964 a new overall silver livery began to be applied to the four remaining Do 24s. The scheme included fuselage and wingtips black-outlined yellow bands and the 58 Escuadrilla badge and big 'SAR' lettering. Three of the four Do 24s are illustrated at Pollensa: '58-2' is still in the green overall scheme.

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HR.5-3 '58-3' in full 58 Escuadrilla markings. Note the indigenous-built bow turret.

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– maintenance was becoming virtually impossible. These five were (flight hours since delivery between brackets): Do 24T3-6 (130), -7 (199), -9 (412), -11 (395), -12 (417).

On February 9, 1955, EdA's High Staff sent the Maestranzas (Major Overhaul Centres) a list of aircraft "to extinguish" from the inventory: it included the five Do 24s and the three He 114s. The repair of these obsolete aircraft was considered too expensive and not worthwhile. The survivors were to fly until their next review, when they would be withdrawn from use. Aside from this, on March 18, 1954, the first two ex-USAF Grumman SA-16As assigned to the Spanish air-sea rescue service had arrived in Getafe, part of the equipment the Spanish armed forces were to receive as a consequence of the Spanish-US Defence Treaty, signed in September 1953. The days of the old reliable Dorniers seemed to be numbered. Surprisingly, a week later the Pollensa workshop's HQ sent the MAB a letter in which all the material and

equipment necessary to make the five Do 24s airworthy was thoroughly detailed.

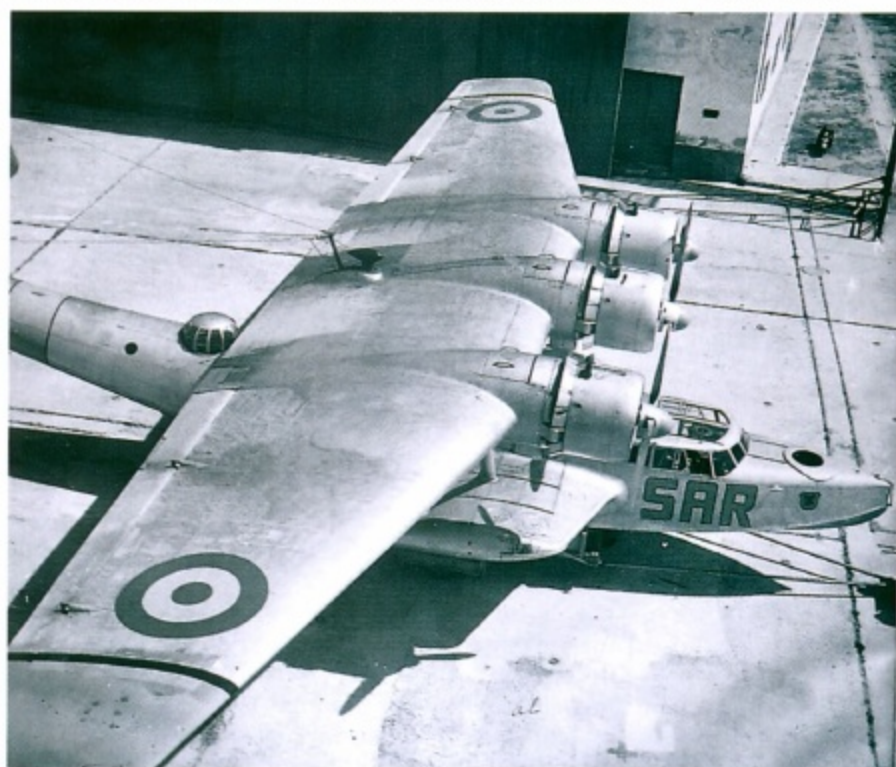
At this point, it must be recalled that the toughness of the Do 24 was much appreciated by Spanish pilots. They loved the robust quality which made it capable of operating in heavy seas with waves of nearly 5ft and winds of over 10 knots. This was the main reason why, after having been withdrawn from service, the refurbished Do 24s were later reinstated. After the SA-16As were brought into service, the EdA SAR pilots realised they were not able to operate in seas as rough as those the German flying-boats could negotiate. On one occasion, during the Ifni campaign an SA-16A landed too violently at sea, losing one of its underwing floats. The pilot intended to stabilize the aircraft, but it rolled to the opposite side and lost the other float, whereupon it banked and immediately sank in what was, fortunately, shallow water. This kind of accident was not possible with the



A 1964 view showing interesting details of the Do 24's front fuselage. Still devoid of propellers, HR.5-1 '58-1' on beaching gear. Port mooring clamp and nose lamp for night and bad weather operations are readily discernible, as well as the indigenous-designed bow turret.

In April 1965, 58 Escuadrilla was disbanded and replaced by a new unit, 804 Escuadrilla. The four Do 24s were devoid of unit markings and the black-trimmed yellow areas were slightly modified.

BOTH P REDÓN



Do 24s, as the two flossenstummeln gave it an extraordinary capacity to float.

It came as no surprise then, when on February 15, 1955, the MAB issued a document detailing all the material necessary to make the five remaining Do 24s of 51 Escuadrilla fully operative – in answer, no doubt, to a request from the EdA Staff. Early in May 1955, Do 24T3-3 and -8 were officially withdrawn from use. On August 5, Do 24T-3-9 crashed into the sea, further weakening the strength of the three-engined aircraft fleet. Its fuselage broke and it sank, preventing its use as a spare source. A SAR SA-16 – the Spanish SAR service had been formed on June 17, 1955 – searched for hours for survivors and rescued four alive. The four operational Do 24s continued to carry out the daily sorties as far as possible, including search exercises, co-operation flights with the AAA, and instruction flights.

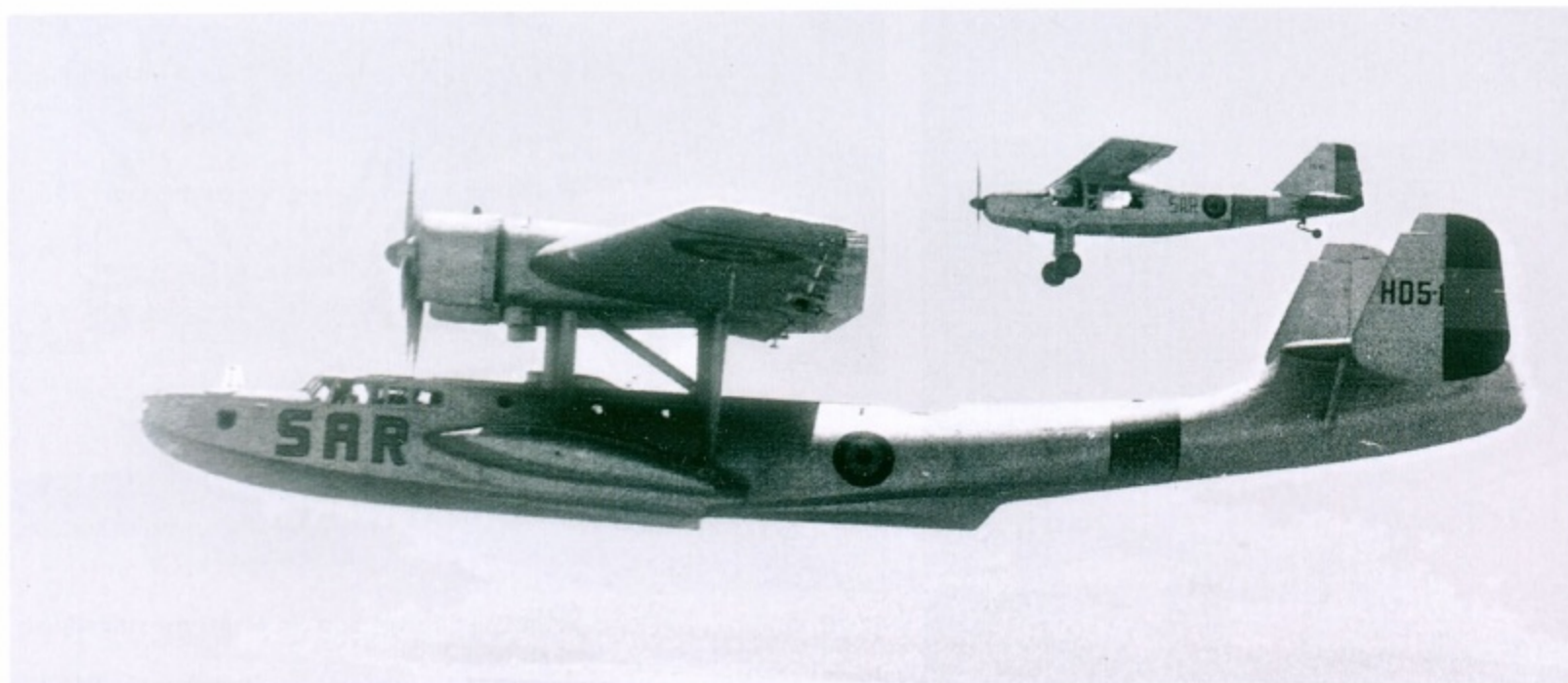
By November that year, the last four Do 24s – HR.5-6, -7, -11 and -12 – remained at the Pollensa workshop. Two of them were serviceable, though the other pair needed materials in order to be repaired.

What happened later is still unclear, but from the evidence it can be concluded that between 1956 and late 1957 or early 1958, the four Do 24s were refurbished, probably in the main repair shop at Pollensa, with spare parts from most of the withdrawn machines. Over the whole of the Do 24T-3-7's revision process, 12,239:55 hours were worked and a great deal of new equipment fitted. In February 1957, for example, eight Marconi A-440 and -441 artificial horizons were acquired for installation in the Dorniers. And at last, the Spanish aviation industry was able to produce good quality – and a good quantity – of pipes (for fuel, oil, CO2) to replace the heavily-repaired ones in the Do 24s.

Painting over pedigrees

In August 1958, the four aircraft were assigned to the recently-formed 58 Escuadrilla del SAR (58th SAR Flight) which superseded the disbanded 51 Escuadrilla, also at Pollensa. After being released for service, they were allotted fuselage unit codes from '58-1' to '-4', very probably according to the delivery order of the new unit. They continued to sport the bottle green overall livery with large yellow bands, though two years later, when they needed repainting, the tail serials were omitted, making external identification difficult. There have been doubts for a long time about which aircraft wore which fuselage unit number. Though at first this might seem somewhat irrelevant, it is not, as the ordinal number of the fuselage unit code was later applied as the ordinal tail serial number, replacing the original one. This change in the aircraft's identities did not allow confirmation of the real ones of the last operational – in the whole world! – Do 24T-3s, nowadays preserved in different aviation museums.

After researching this aspect for many years, the authors ▶



made a breakthrough late in 2004. The kindness of the meticulous Spanish aviation historian Patricio Hebreromade it possible to analyse and study more than 500 EdA documents relating to the Do 24's Spanish service. It has taken more than 200 hours to read and process all the information, but the results have clarified the matter of the elusive final identities, as stated later in this article.

In February 1959, the Do 24s were designated 'HD.1', but this was a short-term measure as the former 'HR.5' was reinstated the following September. In every case, neither appeared on the aircraft. For the whole of that year only '58-1' and '-2' were serviceable, carrying out training exercises, and making short deployments to Valencia and Barcelona, and training sorties to Fornells, Formentera where there were elementary naval facilities. They also carried out minor rescue missions and dropped coloured dyes over the sea.

Early in 1960 only the two aforementioned aircraft continued to operate. In June C.5-64, a North American F-86F Sabre of the Son San Juan (Palma de Mallorca)-based Ala de Caza 4 (4th Fighter Wing) crashed into the sea and '58-2' took part in the search operations for more than five hours. A few days later, the same aircraft carried out search and rescue for the aircrews of two French Lockheed T-33s.

Later in the year, '58-3' replaced '58-1', which had to undergo maintenance. Owing to the chronic spare scarcity, it was only possible to keep two aircraft flying. Again the Pollensa workshop issued a document detailing the interminable tank welding problems. Even in 1960 Spanish industry was not able to achieve German (or Dutch?) standards as regards welding techniques. In mid-September 1960, construction of the nose observation turret of the '58-3' began, though completion was a year away. Somewhat surprisingly, the aircraft still operating had accumulated

Flying in formation with Do 27 L.9-43 of 801 Escuadrilla del SAR, HD.5-1 in full 804 Escuadrilla markings.

HEBRERO ARCHIVE

a good many flight hours. The maintenance teams kept working wonders.

No sooner had 1961 begun than an EdA B.21 (a Merlin-engined He 111H-16) got lost over the Mediterranean and '58-2' and '-3' undertook a search. In May '58-3' joined the others and Dornier activity remained high: carrying out training sorties, escort missions and taking part in international SAR exercises, chiefly in Italy, including Exercises AMAIOLA and ROSSA: during the latter, held at Vigna di Valle, HR.5-3 made an emergency landing at Olbia. The Dorniers escorted a group of EdA North American T-6 Texans visiting Cagliari/Elmas in June. HR.5-3 again had to make an emergency landing – in St Antioco – after it was beset by central engine problems.

In November 1961, in order to update the Dorniers' 'avionics' the EdA purchased eight Bendix P/N 6610-526-4717 artificial horizons for fitting to the HR.5s, at a cost of \$6,100, though there is some doubt as to whether the final installation was carried out. During 1962 and 1963, some rescue missions were carried out. Sometimes, modification work lasted two years.

Silver machines

In the summer of 1964 the aircraft began to receive a new silver overall livery. Tail serials were reinstated, but the serial numbers were those which had previously accompanied the fuselage unit markings, not the *original* ones. The aircraft also sported black-trimmed yellow bands on the fuselage and wingtips, 'SAR' insignia and lettering on the nose and the squadron badge on the rear fuselage, just behind the 58 Escuadrilla unit markings. Interestingly, the 58th Flight insignia – the first carried by the Do 24s since their delivery to EdA – bore more than a passing resemblance to that of the Luftwaffe's 3/Seenotgruppe. The new tail serials allotted to the four Do 24s were HR.5-1 to the former HR.5-7 (489:20 flight hours since delivery to EdA); HR.5-2 to HR.5-11 (849:55); HR.5-3 to HR.5-6 (532:25), and HR.5-4 to HR.5-12 (417:58).

On April 1, 1965, 58 Escuadrilla became 804 Escuadrilla and continued to operate from Pollensa. The aircraft's decoration suffered some changes. The fuselage badge and unit markings disappeared and the yellow band was moved backwards; the national flag covering the whole of the tailfins. One month later, serials HD.5-1 to -4 replaced the previous HR.5-1 to -4. These were the serials with which the Dorniers ended their EdA career.

In July 1965, HD.5-3 and -4 took part in Exercise PRUNUS with other EdA aircraft. En route to Naples, HD.5-4 had to land beside the Israeli steamship *Jerusalem* in order to pick up a sick child and ferry him to Palma for immediate

HD.5-4 about to be lifted to Pollensa's shore by the huge Babcock Wilcox crane, built in Scotland, and installed in 1938.

M LOMAS



SPAIN'S BIG 'BOATS' COLOUR SCHEMES



The Spanish industry took charge of producing an appropriate paint for the Do 24s. After some unsuccessful attempts, in 1953 one of the combinations of primer and paint – the so-called 'bottle green' – began to prove effective against corrosion. The trials were made on aircraft under repair, eg HR.5-6, '51-6' 'Virgen de la Esperanza'.



In the summer of 1958 a new unit, 58 Escuadrilla del SAR was formed with the four remaining Do 24s. The previous scheme was slightly modified, as shown by '58-2' (ex HR.5-11). In 1960 tail serials were omitted, rendering visual identification very difficult.



In the summer of 1964 the aircraft began to receive a new silver overall livery. Fuselage unit codes were kept but the numbers in the tail serials were those of the unit codes, not the original ones. Note the badge of 58 Escuadrilla on the rear fuselage – the first carried by any EdA Do 24 – and the bow turret of indigenous design.

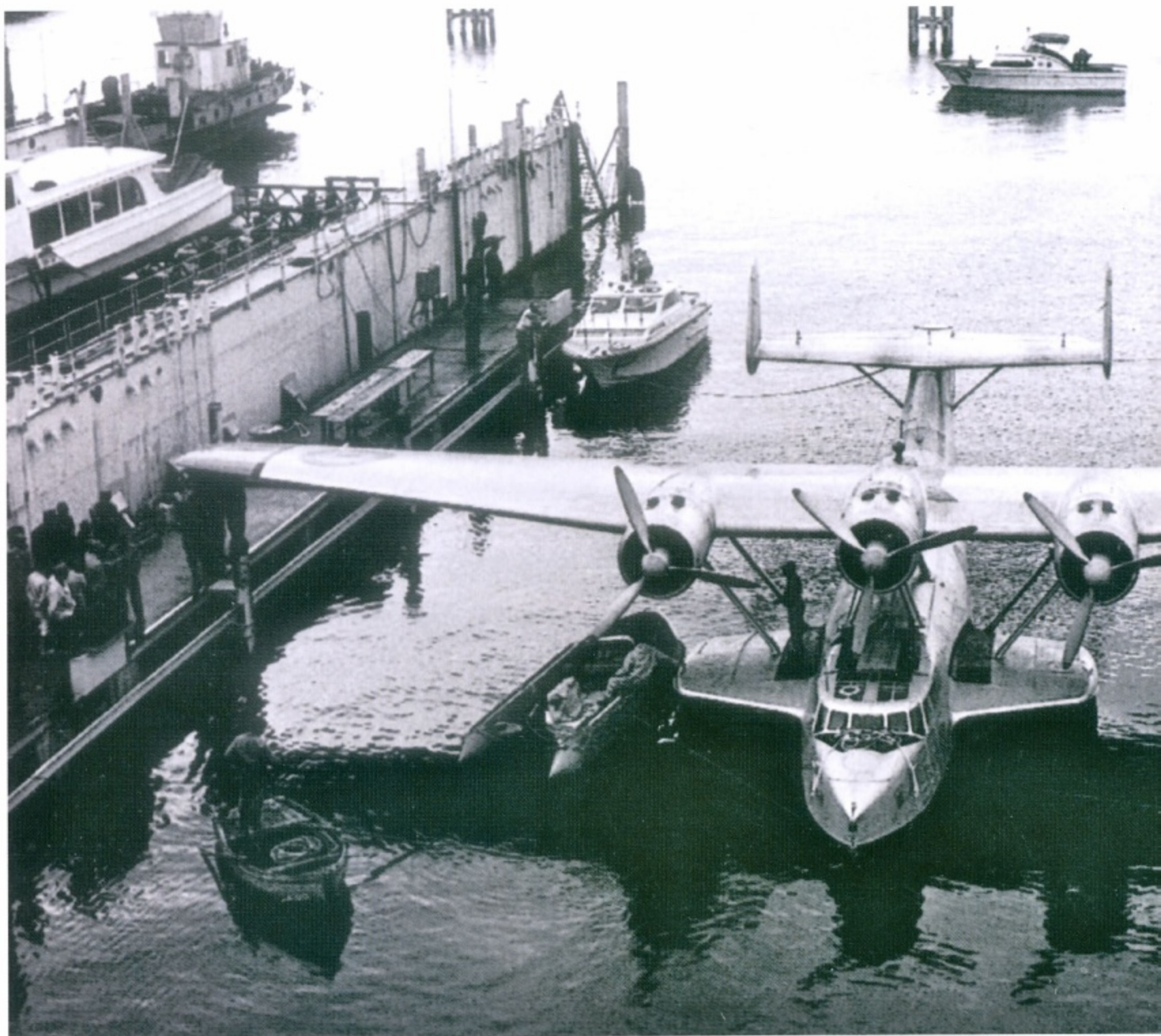


The last scheme worn by the EdA Do 24s. HD.5-4 was the example presented by the Spanish Air Ministry to the Dornier company. For some unknown reason, the 'SAR' letters were slightly larger than those in the other three aircraft. Also unknown is the reason why this aircraft was re-serialled as HR.5-4 before being delivered to Dornier. Note the absence of fuselage unit markings and the repositioning of the SAR yellow band, as well as the incorporation of an anti-glare panel.

Emblem of the Spanish SAR organisation, created by Gen Serrano de Pablo in 1959. From then onwards it was always carried by the Do 24s until their retirement from the EdA inventory. The Latin motto is based on the Biblical advice: 'Vade et tu fac similiter' (Go and do the same).



Air Enthusiast © GONZALO AVILA CRUZ 2006



HD.5-4 at Lake Geneva, Lausanne-Ouchy, Switzerland, during one of the stops en route to Friedrichshafen/Bodensee (Lake Constance), August 1971.

L. MESÓN

hospital treatment. Early in 1966 two aircraft, HD.5-2 and -4, were operational, a third example, HD.5-1, being released for service in March. That August, the HD.5-4 carried out a search lasting 5:40 hours. Over the rest of the year, 804th Escuadrilla aircraft continued to fly, carrying out several search and rescue missions.

By early 1967, only two operational aircraft remained. In May they carried out a 5:40 hour rescue exercise and in November an unsuccessful 7:30 hour search for an EdA pilot lost in the Mediterranean. By the end of the year, the four survivors had logged 3,059:50 hours in Spain. HD.5-3 remained in hangar storage. In 1968 HD.5-2 and -4 were used to operate training flights and search practice for pilots and navigators recently arrived at the unit. That June they took part in Exercise JUCAR and carried out photographic sorties.

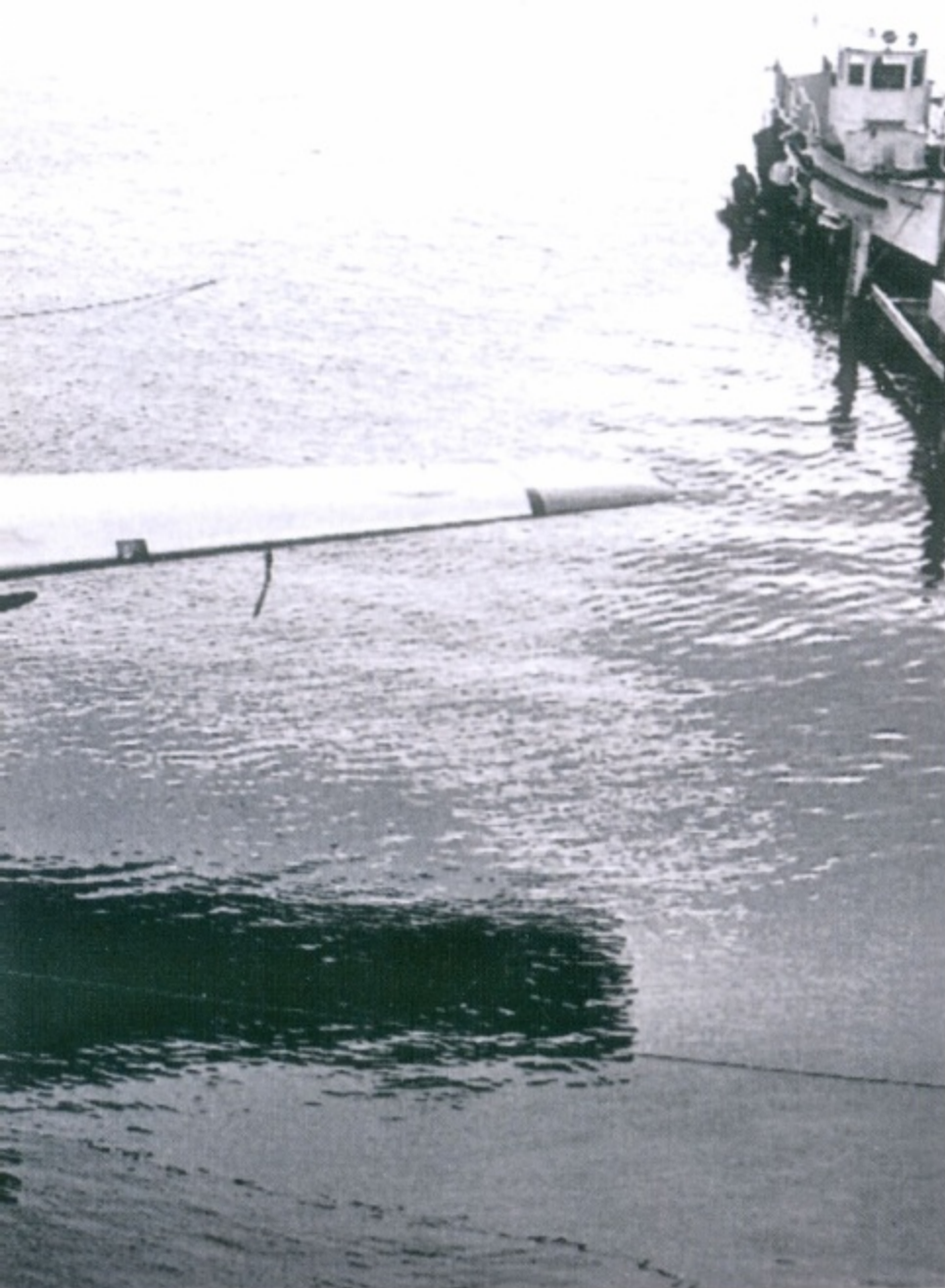
Quarter century and retirement

Early in 1969, 25 years after their arrival, the Dorniers continued to fly missions. A recently-arrived CO assigned to 804 Escuadrilla was keen to see improvements to the Do 24 fleet. According to some sources, new artificial horizons, retired from F-86Fs withdrawn from service, were fitted to the HD.5s and much of the equipment updated. With the support of MAB, and help from the Maestranza Aérea de

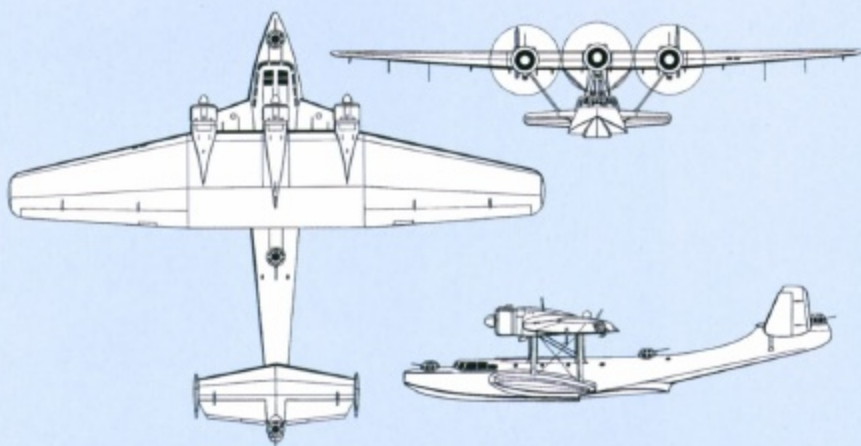
Albacete (MAA), the Pollensa workshop managed to maintain three of the four aircraft in flying condition (HD.5-3 was kept in storage), allowing the unit to carry out a number of training sorties, the only ones flown during the Do 24's last year in Spain.

In all their years of Spanish service, the Do 24s with their six-member aircrews carried out a wide variety of missions. Besides the actual SAR sorties, the aircraft flew missions in support of the Armada and Army-operated AAA units, photographic sorties, and undertook the escort of other aircraft. The search techniques they used in over-water operations during the latter years were based upon what were known as QKP search patterns, trying not to leave a single area of the sea unexplored. The aircraft also carried out some night search missions, for which the nose lamp proved very effective. The Do 24T-3's range allowed them to reach the Italian coast and take part in combined exercises with French and Italian SAR elements, operating from Vigna di Valle, Orbetello and Cagliari.

On November 11, 1969, the 804th Flight was disbanded and three days later the last four Do 24s were withdrawn from the EdA's inventory, despite the fact that three had just been refurbished. The last flight of an operative Do 24 in Spain took place on November 29, 1969: a 1:25-hour training



DORNIER Do 24T



Powerplant: Three 1,000hp (746kW) BMW-Bramo 323R-2 nine-cylinder radial piston engines

Dimensions: Span 88ft 7in (27.0m). Length 72ft 0in (21.94m). Height 18ft 10in (5.74m). Wing area 1,162ft² (107.94m²)

Weights: Empty 20,286lb (9,201kg). Max take-off 40,560lb (18,398kg)

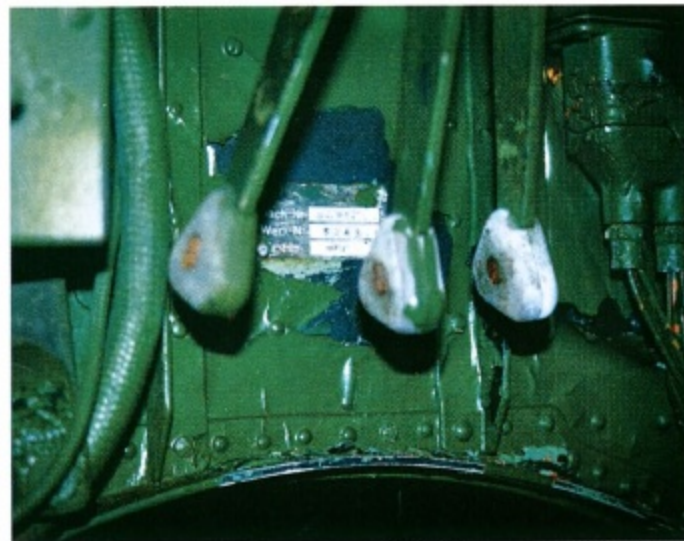
Performance: Max speed 211mph (340km/h). Service ceiling 19,100ft (5,821m). Max range 1,800 miles (2,896km).

sortie with Major Ortega Galantomini as pilot. The aircraft was HD.5-2 (original HR.5-11, w/nr 3405), now preserved at the EdA Museum at Cuatro Vientos. It left Pollensa in 1970 for San Javier, from where it was taken by truck to Madrid. (By the way, Museum HQ should amend the information in its brochures regarding the identity of the example they have preserved!)

By the end of their careers, the last four of these reliable three-engined aircraft had logged over 3,200 hours, the whole fleet having reached almost 5,000. At least one of this remaining quartet flew more than 1,000 hours. Taking into account the maintenance difficulties encountered, the chronic lack of spares, and the fact that the aircraft had been built to operate only a few tens of hours, this is no mean feat, and they have earned their place in military aviation history. To keep their memory alive, the three other examples have also been preserved.

To new homes

After years of storage in a hangar at Pollensa, in August 1976 HD.5-1 (ex HR.5-7, w/nr 3387) and -3 (ex HR.5-6, w/nr 3385) were acquired on behalf of a US citizen, who reportedly donated them to the RAF Museum, at Hendon, UK. In September 1981 the Museum retained HD.5-1 – this was the one in the best condition – passing HD.5-3 on permanent loan to the Dornier company to be preserved. In the event, the fuselage of this aircraft was used to build the so-called Do 24TT. Later, in November 1991 the RAF Museum presented HD.5-1 to the Dutch Luchtvaart Museum at Soesterberg, as the Dutch were looking for an example to represent the 37 Do 24Ks which flew against the Japanese

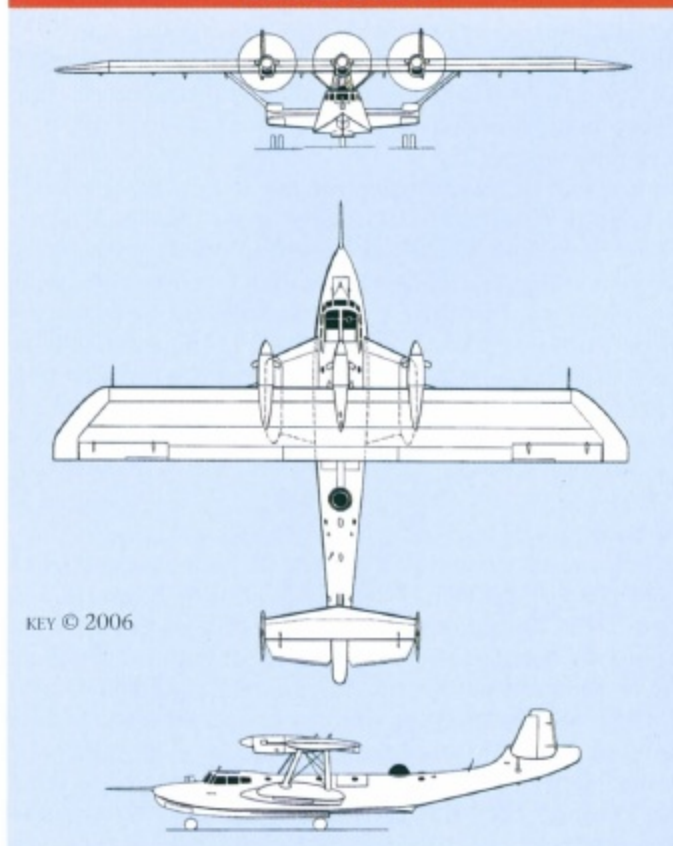


Cockpit rear bulkhead of the Do 24 at the EdA Museum that helped to 'crack' the identities of the survivors. All the aircraft's interior was olive green painted. R. YÁÑEZ

in the Dutch East Indies and Australia. Equipped with the original turrets and camouflaged in full Dutch colours and markings, it currently remains at Soesterberg. As for HD.5-4 (ex HR.5-12, w/nr 3404), it was presented to the Dornier company with the serial 'HR.5-4', having been flown to Friedrichshafen/Bodensee (Lake Constance) by an EdA aircrew between August 3-6, 1971.

As early as July 1966, Klaus Dornier Jr had asked CASA for the airworthiness certificate for one of the Do 24T-3s the EdA was still flying. At that time he was involved in the creation of new Do 24 derivatives – what was later known as Do-24/72, strongly based in the Do 324. Late in September, CASA sent Herr Dornier the airworthiness certificate for w/nr 3385, by then HD.5-3. This, plus the fact that this aircraft was kept in a hangar from 1966 until the type's retirement, makes it hard to believe that it was pure chance that w/nr 3385's fuselage was used in the construction of the Do 24TT. As it turned out, the latter remained on loan to the Deutsches Museum for ten years. In 2002, the owner decided to restore it to airworthiness and take it to the Philippines to be flown there. To fill the gap, the Deutsches Museum asked – and

DORNIER Do 24TT



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finally persuaded – the Dornier company to lend them HR.5-4 then on display at Oberpfaffenhofen. According to some sources, the wings of HD.5-3, replaced by those of the TT version, were fitted – for some unknown reason – to HR.5-4's fuselage.

Mystery solved

Since the delivery of the last four Do 24T-3s to museums, one mystery remains. Despite the fact that the EdA did not acquire any new Do 24s, none of the w/nrs of the quartet (HD.5-1, w/nr 5294, HD.5-2, w/nr 5341, HD.5-3, w/nr 5344 and HD.5-4 w/nr 5345) coincided with those of the 12 former examples! Aviation historians and writers were involved in research in order to solve the puzzle. Some production lists included – and still include – the four w/nrs just mentioned, followed by a question mark. The authors also began to investigate the origin of these odd serial numbers. Had EdA maintenance personnel changed the original factory plates for new ones? If so, why?

It seemed like a good idea to take a look at the interior of the Do 24 at the EdA Museum. Having gained permission, late in March 2000 the authors and their colleague Roberto Yáñez got into the aircraft. Walking on a rotten wood floor and seeing all that 1930s equipment was an exciting experience, not to mention the mysterious atmosphere in there. After ten minutes or so, Roberto pointed to a small plate set in the cockpit's rear bulkhead, just behind the pilot's seat. There it was! But we were to be disappointed – the w/nr in the plate was, in fact, 5341. We took some pictures of the aircraft's interior and left. We were back to square one ... nevertheless, our colleague murmured something which would later be significant in solving the riddle: "Was that really the aircraft's w/nr?"

The authors decided to contact Dornier's Dipl Ing Herr Karl Kössler, to get an authoritative opinion on the subject. We sent him the picture of the plate we had taken at the EdA Museum. As soon as he saw it, he noticed that it was not similar to those he had seen in the two examples in Germany. After studying the plate and the spot where it was located on the EdA Museum's example, he came to this conclusion: that the w/nrs in the 5000 range were not those of the aircraft, but the ones applied to the fuselage by the manufacturer. Furthermore, the letters 'mfb' (indicating the Aviolanda factory at Papendrecht), shown at the bottom of the plate in the Spanish aircraft, seem to eliminate the last

SPANISH BIG 'BOATS -FATES

EdA serial(s)	Total Time	Withdrawn	Remarks
HR.5-1	235:45	Nov 9, 1954	Burnt out Nov 9, 1954
HR.5-2	52:44*	Jan 18, 1948	Sank Jan 18, 1948
HR.5-3	398:58	May 5, 1955	Hangared in July 1953
HR.5-4	24:40*	May 28, 1954	Crashed November 1944
HR.5-5	?????	Aug 6, 1948	Hangared on Sep 11, 1945
HR.5-6 / HD.5-3	571:20	Nov 18, 1969	804 Flight disbandment
HR.5-7 / HD.5-1	915:35*	Nov 18, 1969	804 Flight disbandment
HR.5-8	406:09	Nov 5, 1955	Hangared
HR.5-9	532:20	Oct 24, 1956	Crashed Aug 5, 1955
HR.5-10	?????	Jan 30, 1954	Accident at Pollensa Jun 20, 1948
HR.5-11 / HD.5-2	1,005:35*	Nov 18, 1969	804 Flight disbandment
HR.5-12 / HD.5-4	709:25*	Nov 18, 1969	804 Flight disbandment

* Approximate.

The fuselage of HD.5-3 was used in the construction of the Dornier Do 24TT or Do 24ATT D-CATD.

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remaining doubts. To fully confirm this point, it would be necessary to find another plate somewhere in the wings, but this presents something of a problem. On the one hand, it would be rather difficult to get into there. On the other, it must be remembered that cannibalization was a frequent means of keeping the aircraft in service, in other words, every aircraft could have fitted with wings from a sister aircraft. In every case, Herr Kössler assured the authors, the original





HD.5-2 outside at the EdA Museum, Cuatro Vientos, in mid-2002.
KEY-STEVE FLETCHER

Do 24 factory plates were fastened on the left side of the hull, close to the cockpit. His conclusions may well have solved what has long remained a mystery: HD.5-1, w/nr 5294, was really the former HR.5-7, w/nr 3387; HD.5-2, w/nr 5341 was HR.5-11, w/nr 3406; HD.5-3, w/nr 5344 was HR.5-6, w/nr 3385; HR.5-4, w/nr 5345 was HR.5-12, w/nr 3404.

Thanks to Spain's persistence with a remarkable aircraft, we can bask in an operational large flying-boat – the much re-engineered Do 24TT and three magnificent museum pieces. AR

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Once re-assembled at Soesterberg in the Netherlands, HD.5-1 was painted to represent a Dutch Do 24K.
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MUSEUM



HD.5-1 was a tight fit inside the RAF Museum at Hendon. The aircraft was moved to the Netherlands in 1991.
KEY-DUNCAN CUBITT