



NNGPM's Sikorsky S-38B PK-AKS at the Dutch Navy Yard at Soerabaja, Java, where it was assembled after shipment from the U.S. The name "Bakopa" comes from the first two letters of the names of the companies involved in the New Guinea surveys. Photo is a reproduction from the pre-war Dutch Indies aviation magazine *Luchtvaart*. (Kavelaars Collection)

AIRCRAFT OPERATIONS IN INDONESIA BY THE ROYAL DUTCH/SHELL COMPANIES 1934-1963

by H. C. Kavelaars

With Additional Text and Data by Matthew E. Rodina, Jr.

Imagine if you will an area of three million square miles, about the size of Australia or the continental United States. Suppose, furthermore, that three-quarters of this area consisted of ocean with the remainder made up of some 14,000 islands. These islands would range in size from small atolls to large land masses of hundreds of thousands of square miles and would be strung out in a line almost 2,000 miles long. This archipelago, while primarily tropical, could provide geographical features ranging from dense jungles, to volcanos, to mountains almost 17,000 feet high. Furthermore, assume that these geographical and geological features combine to form rich lodes of the world's treasures—gold, tin, rubber and oil. It is the latter which interests you for you represent an oil company and it is your job to find that oil and get it out despite almost nonexistent transportation and communications. It would be a tough job to accomplish in our modern world. It takes on a staggering increase in difficulty when your "modern" world exists not in the 1980s but in the latter years of the nineteenth and early years of the

twentieth centuries.

The description above is not hypothetical but real. The area spoken of is Indonesia, a land of some 145 million people ranging from Stone Age headhunters to the jet set. The problem described is also not hypothetical, but a real one faced and conquered by one of the world's greatest petroleum companies—the Royal Dutch/Shell Group of Companies. It was in 1907 that businessmen from two great trading nations combined their efforts to exploit the earth's riches under conditions which would have made their success virtually impossible had not two bicycle builders from Ohio capitalized on their ingenuity to produce, only four short years before, an invention whose impact upon the world was scarcely recognized 75 years ago—the airplane. It is how Royal Dutch/Shell successfully accomplished their task and the role of the airplane in doing so that is the subject of this narrative. It is a subject of which little has been known for many years but it is hoped that this shortcoming will soon be rectified.



Ford Trimotor NC-9676 (c/n 5-AT-42) being lifted off barge at Waalhaven Airport, Rotterdam, in June 1935. Note KLM name on wing. The former Standard Oil of Indiana and Northwest Airlines plane was purchased by KLM but flight tests proved it unsatisfactory for survey use. (KLM photo in Gemeentelijke Archief Dienst, Amsterdam/Kavelaars Collection)

A BRIEF HISTORY OF INDONESIA

Before proceeding with our story, it would be well to add a brief history lesson to the geography lesson given above. There is little in the way of reliable history for the area which is now called Indonesia prior to the first explorations by the Portuguese, Spanish and Dutch in the 1500s. The Dutch traders first reached the main island of Java in 1596 in their role of distributors of Asian produce. By 1602, several trading companies combined to form the United East India Company (Vereenigde Oost-Indische Compagnie or VOC) which was granted a Dutch trade monopoly for all areas east of the Cape of Good Hope. The English were active at this time as well with their East India Company which

was smaller than the Dutch organization but which was quite active in the spice trade. The relationship between the two groups at times approached outright hostility but the signing of the Anglo-Dutch Treaty of 1619 brought a cessation of the formal competition. This joining of forces was the model for the creation of the Royal Dutch/Shell organization almost three hundred years later.

Within a matter of decades, the Dutch had achieved a virtual economic monopoly in this area which came to be known as the Dutch East Indies and which we now call Indonesia. Trading in spices and rubber were the main activities in the 18th and 19th centuries. It was not until the 1880s that the first explorations for oil in the area determined that there was indeed enormous potential for finding petroleum reserves in several locations. The first oil explorations had been in Java in 1870 and the first well yielding commercial quantities was drilled in North Sumatra in 1885.

The Royal Dutch Petroleum Company (N.V. Koninklijke Nederlandsche Petroleum Maatschappij or KNPM) was established on June 16, 1890, with an oil exploration concession being granted by the Sultan of Langkat. Early explorations were quite primitive, being limited primarily to areas readily accessible by water transport. Early in their efforts, Royal Dutch found it to their advantage to cooperate in exploration efforts with Nederlandsch-Indische Industrie en Handel Maatschappij (NIHM), a London-based trading company owned by the "Shell" Transport and Trading Co. which was, in turn, owned by M. Samuel & Co. NIHM originally imported various articles from the East Indies including shells for use in decorating boxes

Ford Trimotor NC9676 (c/n 5-AT-42) lands at Rotterdam Airport on June 19, 1935, after first test flight. Outline of former Northwest Airlines markings visible aft of door. Registrations PH-AKE and PK-AKE were assigned but believe never carried. Probably never left the Netherlands, fate unknown. (KLM photo in Gemeentelijke Archief Dienst, Amsterdam/Kavelaars Collection)



and other knick-knacks. It was from NIHM's symbol, the shell, that the world's most widely recognized petroleum trademark was to evolve. In 1907, the cooperation which existed between Royal Dutch and Shell Transport and Trading was formalized with the creation of the Royal Dutch/Shell Group of Companies. The arrangement was quite interesting in that the parent firms remained as independent organizations with separate groups of shareholders in the U.K. and Holland with their incomes derived from the earnings of jointly controlled subsidiaries which did the actual exploration, refining, transportation, and marketing. In all efforts, the ownership participation was 60% Royal Dutch and 40% Shell.

After the amalgamation in 1907, the companies founded N.V. De Bataafsche Petroleum Maatschappij (BPM by its Dutch initials) which was the exploration and production arm of the group and the Anglo-Saxon Petroleum Company Ltd. which was the transportation arm. There had been earlier Royal Dutch/Shell interests in a marketing company called Asiatic Petroleum Company Ltd. in which the Rothschild family had an interest but their interest was acquired by Royal Dutch/Shell in the 1930s and in 1946 the company was renamed the Shell Petroleum Company Ltd., the name Asiatic Petroleum Co. then being assigned to a U.S. subsidiary (Asiatic Petroleum Corp. or Aspetco) which was to become involved in the Group's aviation operations. Today, the Royal Dutch/Shell Group operates in more than 100 countries and employs some 160,000 people.

THE AIRPLANE AND THE SEARCH FOR OIL

In 1925, the Group's first experimental work with aerial survey was accomplished when the Anglo-Saxon Petroleum Company contracted with an air survey firm for photography of a 1,400-square-mile area in Sarawak and Brunei (British Borneo). The area involved consisted primarily of tropical swampland. At this point in time, aerial survey work was not a highly advanced technology and the results of this survey were not completely satisfactory but the point had been made that aircraft could be used for resource survey work in desolate, uninhabited areas.

Nine years later, in 1934, additional aerial survey work was undertaken at several concessions in Sumatra. The Nederlandsche Koloniale Petroleum Maatschappij (NKPM or Koloniale) and BPM executed a contract with the Netherlands Government Ordnance Service to conduct the survey. This work was done by the Netherlands Indies Air Force with the Ordnance Survey completing the aero-triangulation and mapping work. NKPM was a subsidiary of Standard Oil of New Jersey formed in 1912 to explore potential oil fields.

While this survey was being done, planning was underway for the exploration of some 23.8 million acres in Dutch (West) New Guinea, primarily all of the lowlands and part of the foothills of the mountain system, for which Nederlandsch Nieuw Guinee Petroleum Maatschappij (Netherlands New Guinea Petroleum Co. or NNGPM) held the concession. NNGPM was a joint venture in which BPM, NKPM, and the Nederlandsche Pacific Petroleum Maatschappij (NPPM) held ownership shares of 40%, 40%, and 20% respectively and which had been formed in March 1935 with BPM as the managing partner. NPPM was owned by Standard Oil of California and Texaco. NNGPM's headquarters at that time was at Babo on the south side of the eastern part of the MacCluer Gulf.

The area to be covered in this new survey involved virtually all



PH-AKU (c/n 6296) of KNILM seen at Waalhaven Airport, Rotterdam, Sept. 1935. One of three de Havilland DH-89A Dragon Rapides used for the New Guinea aerial surveys 1935-1938. It was later reregistered on arrival in the Netherlands East Indies (PK-AKU) and was destroyed in a crash at Ketapang, West Borneo (south of Pontianak) on August 16, 1938. (Kavelaars Collection)

tropical jungle which had never been mapped and it was not expected that the aerial photography would provide significant geological data in such an environment. However, in reviewing photos taken during the Sumatran surveys in 1934, it was discovered that excellent geological information was obtained from photos even where detailed geographic features were not precise. As a result, the New Guinea aerial survey was organized to provide geological information as first priority with topographical information being relegated to second priority. The flying portion of the survey began in 1936 and by 1938 more than 16,000 photos had been taken. Such was the quality of the work that these photos were still being used 15 years later to produce topographical maps of areas selected for further geological survey and road construction.

The photo flying for the major portion of the survey was done by Koninklijke Nederlandsch-Indische Luchtvaart Maatschappij (Royal Dutch Indies Airline Co. or KNILM) which had been founded in 1928 to provide local air service in the Dutch East Indies as well as operating the connecting segment (Batavia-Sydney) to the KLM service from the Netherlands to Batavia. KNILM was a subsidiary of KLM (Royal Dutch Airlines) and the two companies cooperated very closely on technical matters.

KLM purchased a Ford Tri-Motor from Northwest Airlines, Inc. This plane, NC9676, had originally been delivered to Standard Oil of Indiana in April 1929 as "Standolind III" and sold to Northwest in August 1931. After purchase by KLM, the Ford was shipped to Rotterdam by sea and assembled at Waalhaven Airport. The first test flight was made on June 19, 1935, by Capt. G.A. Koppen of the Rijks Studiedienst voor Luchtvaart (National Study Service for Aviation). As a military pilot, Koppen had been in command of the first airmail flight to the Dutch East Indies in 1927, flying a Fokker Tri-Motor (H-NAEA) named "Postduif" (Carrier Pigeon) for a private syndicate, the aircraft having been owned by the Fokker Co. Koppen later went on to become Chief Pilot of KNILM about 1933.

The test flight of NC9676 was followed by more tests later in June. These subsequent tests resulted in the rejection of the aircraft for long-range survey flying over remote areas lacking sufficient landing facilities. Capt. Koppen found directional stability poor and reported that three hours of flying so exhausted the pilot that the high degree of accuracy required for



Sikorsky S-38B PK-AKS (c/n 414-14) of NNGPM at Etna Bay about 1939. The former Standard Oil of New Jersey plane was assigned to transport geophysical crews and survey work in New Guinea. Both S-38s were destroyed during the Japanese advance in early 1942. (M. Neuvenheim photo/Kavelaars Collection)



S-38B PK-AKT (c/n 314-12) of NNGPM about 1939.

(M. Neuvenheim photo/
Kavelaars Collection)

the survey job could (or would) suffer considerably. The Ford was stored, its engines covered with cloth, in a corner of Waalhaven Airport, its ultimate fate not being known. However, in the Dutch Civil Aviation Register, the plane had been entered as PH-AKE of KLM on Sept. 4, 1935, but this registration was canceled on Aug. 26, 1936. In 1938, BPM was listed as owner of the plane, now assigned the Dutch East Indies registration PK-AKE but these transfers appeared to be paper formalities only, the aircraft never having worn either PH-AKE or PK-AKE. It was never flown to the Indies as far as can be determined.

Eventually, KNILM selected three de Havilland DH-89A *Dragon-Rapides* for the survey work. The DH-89s were flown from England to Holland for technical work by KLM including installation of photo equipment. The planes were registered PH-AKU/AKV/AKW. The aircraft left Amsterdam in September 1935 under the command of Capt. Koppen and upon arrival in Batavia (Jakarta) were reregistered PK-AKU/AKV/AKW. Landing strips had been constructed by NNGPM on suitable sites, one at Babo (then the company's headquarters near the east end of the MacCluer Gulf), one at Jef Man, a tiny coral island off the northwest coast of the Vogelkop peninsula, and one at Seroei on Japen Island in Geelvink Bay. This latter airstrip was soon washed away by heavy rains. Rainfall in New Guinea is regular, frequent, and appreciable in quantity ranging from 75 inches (2 meters) to 135 inches (3.5 meters) per year with extreme figures of 200 inches (5 meters) to 235 inches (6 meters) in some localities. Together with overall soil conditions, related largely to geological formations (mainly marly clay/shale), this wet climate made road building and maintenance an impossible job involv-

ing prohibitive cost.

At about the same time the DH-89s were acquired, NNGPM purchased two used Sikorsky S-38Bs in the U.S.A. and these were shipped to the Netherlands East Indies and registered PK-AKS/AKT. Primarily destined to assist in transporting geological and geophysical crews and supplies, one of these amphibians (alternating between AKS and AKT) was also used for a longer period by NNGPM itself in mapping the extensive southwest coastal lowlands of New Guinea where the company had constructed amphibian facilities, one at Aika some 65 miles south of the Central Carstenz mountains and a second at Etna Bay, due south of Geelvink Bay. The KNILM work, begun in 1936, was completed early in 1938. Photomapping was done by the Sikorsky on a decreasing basis through 1941. Both amphibians were destroyed in early 1942 either by Japanese air attack or by being purposely destroyed to prevent their falling into Japanese hands.

In 1938, BPM at Batavia had acquired a used Grumman G-21A *Goose* amphibian and it was registered PK-AKR. It was stationed at the Batavia Airport and used for flights to Borneo and Sumatra in support of BPM operations in those locations.

By 1939, the NNGPM S-38Bs were becoming obsolete and two G-21As were purchased new from Grumman. The two planes were registered PK-AKA and AKB. Both were delivered by Grumman to Asiatic Petroleum Corp. in July and August 1939 and were shipped to Indonesia by sea and assembled at the Dutch Navy Yard at Soerabaja and flown to New Guinea. AKA arrived at Babo towards the end of 1939 while AKB was flown via Makassar and Ambon, arriving on Jan. 9, 1940. Because of the approaching war conditions in the Pacific, these aircraft were used relatively little as exploration activities diminished and were finally halted in July 1940. The author, then a junior assistant geologist, was the last member of the exploration department to leave New Guinea the following month having been transferred to one of the American consortium members which also worked in south Sumatra. A short revival of geological work was undertaken in 1941, but in early 1942 the remaining section of the NNGPM consortium was evacuated from Babo and *Goose* PK-AKB was destroyed by enemy action on February 2, 1942.

A fourth *Goose* was present in the East Indies during 1939-1940 carrying the registration PK-AES. It was flown mostly in New Guinea but the ownership has thus far always been obscure. In addition to NNGPM, a gold-mining company named Mijnbouw Maatschappij Nederlands Nieuw Guinea (MMNNG) operated in the area south of the high central mountains. In view of the K lettering in the registrations used for all aircraft operated for survey purposes, it is believed that PK-AES was owned and operated by the gold-mining company in spite of the fact that it was purchased by Asiatic Petroleum Corp. of New York. Unfortunately, the true story has not yet surfaced.

With the Japanese occupation of Indonesia in early 1942, all aircraft operations were halted and most of the remaining aircraft were either destroyed as a result of enemy action or were purposely destroyed to prevent their falling into the hands of the Japanese.

POST-WORLD WAR II REACTIVATION

With the cessation of hostilities in August 1945, one might have expected that there would have been a relatively rapid return to pre-war conditions. In Indonesia, as in a number of countries in the world, this was not the case. When it became



Grumman G-21A PK-AKR (c/n 1010) was delivered to Asiatic Petroleum Corp. in New York in November 1937 and shipped to the Netherlands East Indies for use by BPM—Batavia. Its exact history and disposition are unknown. Photo taken at KNILM base at Soerabaja. (Kavelaars Collection)



Goose PK-AKA (c/n 1107) at Kemajoran Airfield (Batavia) about 1948 with the ill-fated PBV-5A PK-AKC in the background. AKA had been purchased surplus in the U.S. It is believed to have been sold to the Indonesian military about 1958. It was the second G-21A to carry the PK-AKA registration. (Aerohobby/Kavelaars Collection)

evident that the Japanese had been beaten, Indonesian nationalists proclaimed independence on August 17, 1945. Thus began the long struggle between the proponents of independence and the powers which sought a return to the pre-war situation. At times, armed conflict between the Dutch army and the various Indonesian factions contributed to the country's instability and limited the development of the area's natural resources. Finally, sovereignty was transferred from the Dutch to the Republic of Indonesia December 27, 1949. Existing as an independent nation on paper was not, however, the same as existence in fact and the transfer of power to untrained and inexperienced Indonesian administrators resulted in considerable difficulty in the day-to-day operations of government. For this reason, information on the field of civil aeronautics during this period has remained obscure.

KLM had acted quickly to restore and expand the pre-war KNILM routes with DC-3s and PBVs immediately after the end



The mysterious Goose PK-AES (c/n 1008) being refueled from the world-famous 55-gallon drum at Babo. Aircraft is unusual in that it was ordered by Asiatic Petroleum and delivered in New York as VH-AAV. It was registered in June 1939 as PK-AES and operated by the gold-mining company MMNNG although it may have been used on Shell projects. It is believed to have been destroyed in the early 1940s. (Kavelaars Collection)



Goose amphibian PK-AES (c/n 1008) was delivered to Asiatic Petroleum in New York in Oct. 1937 but registered VH-AAV for use in New Guinea. It is one of the "mystery" G-21s for it later was registered to MMNNG but may have been in fact used for NNGPM work, the exact details being unclear. (Rodina Collection)



Sealand VR-SDV of British Malayan Petroleum near Brunei town, Nov. 1954. It had originally been a demonstrator and slated for delivery to British West Indian Airways but poor open sea landing characteristics caused it to be returned to England and stored for three years before being purchased by BMP. It ended up in the East Indies. (H.C. Kavelaars)

of the war. New routes were opened with PBYs to Sarawak-Brunei by way of Pontianak in Dutch West Borneo and to New Guinea's capital of Hollandia, the latter route being flown once weekly by 1950.

Not long after Indonesia's independence, KLM's activities decreased because of the establishment of the new Indonesian flag carrier, Garuda. KLM retreated to New Guinea where it founded a new subsidiary, Nederlands Nieuw Guinea Luchtvaart Maatschappij (NNGLM). This company established regular air services between all main settlements along the coast and inland, initially with DC-3s and later with de Havilland of Canada DHC-2 *Beavers* and Scottish Aviation *Twin Pioneers*. Such operations were dubbed the Kroonduif (Crown Pigeon) services. The Hollandia-Jakarta route had been discontinued with the relocation to New Guinea by KLM, but the airline took measures to connect that remote part of the world with the outside by opening a new route from the airfield on Biak Island to Port Darwin via Sorong thereby connecting with Qantas' services to Australia. KLM also introduced regular schedules to Amsterdam from Biak



Short Sealand VR-SDS (c/n SH1564), first of two operated by British Malayan Petroleum in northwestern Borneo. Photo taken on the Marudi River near Kampong Marudi, Sarawak. (H.C. Kavelaars)

with Douglas C-54s initially and later with Lockheed *Constellations*. During the first few years after independence, the Dutch Naval Air Transport Command also helped in carrying out transportation in the New Guinea area with PBYs.

The biggest fleet of civil aircraft (and vessels) used for private transport was that of the Shell operations. In 1947, the Royal Dutch/Shell Group recommenced its oil search, production and marketing operations with the restoration of two of its principal pre-war offices, Batavia (Jakarta) and at Balikpapan on the east coast of Borneo. The latter settlement had been completely devastated and burned out when the war ended. To speed up rehabilitation work in the period immediately following the end of the war, Shell bought four war-surplus Piper Cubs for its administrators in Jakarta to use in coping with transport problems. Of course, it was of utmost importance to collect as rapidly as possible as much data on the state of affairs at the company's installations, buildings, oil fields, etc., which had been the pre-

Percival *Prince* (probably VR-SDB), one of four operated by British Malayan Petroleum. Photo taken at Seria, Brunei, in January 1953. Note the Shell emblem below cockpit. (H.C. Kavelaars)



war possessions of Shell. These four Cubs were registered PK-SAA/SAC/SAD/SAE, registrations which had been used on other aircraft prior to 1941. When the larger amphibians arrived in the area and the activities of KLM gradually but steadily expanded, these little machines became superfluous for Shell during 1948. PK-SAA/SAC were loaned to the Netherlands East Indies Flying Club at Jakarta while SAD/SAW were loaned to the flying club's south Sumatra section, probably located at the Palembang airfield. Although no details are known of their flying life, it would seem that good use was made for pleasure and probably also for some additional business flying. PK-SAA's flying ended with its becoming a total loss as the result of an accident on August 6, 1951. BPM purchased one additional Cub for use by the Balikpapan administration in East Borneo. This was PK-SAF.

OPERATIONS RESUME IN BORNEO AND INDONESIA

For the longer interisland and remote area work over the vast island area of the former Dutch East Indies, Shell gave first consideration to long-range amphibians, especially for the remote New Guinea area which had only water transport. During the Pacific War, the Japanese had constructed quite a number of airstrips along the coast as well as inland in New Guinea. However, for various reasons, NNGPM felt that only PBVs should be considered. The first NNGPM aircraft order after the war therefore consisted of three Consolidated PBV-5A *Catalina* amphibians which were purchased as surplus in the United States.

To complete the story of Shell's aircraft operations in the Indonesian archipelago, it is necessary to pause a moment to discuss the aircraft used by two other wholly owned Shell subsidiaries, British-Malayan Petroleum Co. and Sarawak Oilfields, Ltd. (SOL). Both operated in the northwestern areas of Borneo, the British colonies then known as the states of Sarawak, Brunei (a Sultanate), and North Borneo, and both companies had their headquarters at Seria on the Brunei coast. It should be noted that upon the founding of the Federation of Malaysia in 1963, the operation was split, the latter becoming Shell Brunei and the former Shell Malaysia.

Since BMP Co. and SOL's administration were supervised by Shell's London office, aircraft selection was heavily oriented toward the British types, primarily for financial reasons. During the period 1948 to 1955, a number of aircraft were purchased and operated including an Auster (VR-SDO), a Supermarine *Sea Otter* amphibian (VR-SOL), two Short *Sealand* amphibians (VR-SDS/SDV), and four Percival *Princes* (VR-SDB/SDR/UDA/UDC). The *Sea Otter* was the first to be acquired in mid-1949 and was registered to the Sarawak Oilfields, Ltd. Details of its operations are not clear, but it was withdrawn from use on May 21, 1952. The next aircraft to be received was the first of the Percival *Princes*, VR-SDB. Shell Refining & Marketing of London had received this aircraft in England after Percival had used it as a demonstrator. After use as an executive aircraft as well as testing the type for use elsewhere, this plane's satisfactory performance caused two more to be ordered for use in Venezuela shortly before VR-SDB was sent to Borneo in July 1950. Operations of the first three aircraft proved to be quite good and Shell placed an order for five more aircraft, two being earmarked for London's use, two more for Venezuela, and the remaining one (VR-SDR) for BMP's use. As it turned out, BMP was later to operate two more aircraft from this batch when VR-UDA was



One of NNGPM's PBVs makes a spray run with DDT at Morotai, June 1948. Diminishing light accompanying the dusk missions causes lack of sharpness in photo. (H.C. Kavelaars)

received from London in early 1955 and VR-UDC arrived from Venezuela in 1958. In total, four *Princes* were operated by BMP Co., one having been purchased specifically for the company and the other three having been received after periods of use by either Shell or affiliate companies.

The first Short *Sealand* (VR-SDS) arrived in 1952 to provide some amphibious capability after the *Sea Otter* had been removed from service. This aircraft had originally been the European demonstrator and had also been used for charter work prior to its purchase by Shell for BMP. The second *Sealand* (VR-SDV) had also been a demonstrator and had been slated for delivery to British West Indian Airways for use in the Caribbean, but tests showed the plane to be unsuitable for operations in the open sea and it was returned to the manufacturer in early 1951. It remained stored until it was purchased by Shell in mid-1954.

An Auster J/5B *Autocar* (VR-SDO) was acquired in early 1953. This four-place, single-engine plane was used for utility duties. It was disposed of in 1956 through sale in Borneo after only a little more than three years' use. It later was sold in Australia and was active there during the 1960s.

All of the aircraft which had originally been registered in the VR-Sxx series and which were still in operation were reregistered in the VR-Uxx series when the Federation of Malaysia was formed in 1955 since Brunei did not choose to be included in Malaysia. Exact fates for most of these aircraft are not known, but most were either sold or scrapped when their operational lives had run out.

AIRCRAFT TYPES IN THE INDONESIAN ARCHIPELAGO

Grumman G-21 Goose—Two Grumman G-21s were operated by BMP in Indonesia immediately following the end of World War II at Balikpapan on the east coast of Borneo. The first plane, PK-AKA, was purchased in the U.S. in 1946 and shipped by boat to the East Indies after a very long delay in departing from New York. The second *Goose*, PK-AKB, was also acquired in 1946 by Shell but this time directly from U.S. Navy surplus stocks. Both aircraft were withdrawn from use in the late 1950s. On October 10, 1958, both registrations were canceled so one



may assume that both craft were sold about this time. There is some evidence that these planes were purchased by the Indonesian military but this remains unconfirmed. Note that both aircraft used registrations carried by Shell G-21s which were operated in the late 1930s and early 1940s.

Consolidated PBY-5A Catalina—As has been indicated previously, Shell decided upon the PBY-5A as its long-range amphibian and eventually operated six aircraft of the type. The first four (PK-AKC/AKR/AKS/AKT) were purchased in 1946 but did not arrive until early 1947. The two remaining aircraft (PH-TGP/JZ-POD) were acquired in 1953 and 1958 as replacements for other planes in the Shell fleet. Of the six *Catalinas*, five were for NNGPM's use at their Morotai base with one assigned to BPM headquarters at Batavia. The Morotai base consisted of six parallel airstrips which had been constructed by Allied forces during World War II and was located some 150 miles northwest of the post-war base of Sorong. With independence in 1950, NNGPM moved its aircraft back to Jef Man Island, some six miles from Sorong.

Unfortunately, PBY operations were not totally successful, two aircraft being lost to accidents and one scrapped by 1950. The last of the original four machines, PK-AKT, was scrapped in 1954. The history of each aircraft appears below.

PK-AKC was built by Boeing Aircraft of Canada and was converted to civilian use by Canadian Car and Foundry Co. Ltd. at Cartierville, Quebec, in 1946. By January 1947, the plane had reached Oakland, California, on its way to Indonesia. And by April 1949, it was apparent that the aircraft was not being used sufficiently so Shell attempted to find a buyer for it without success. In July 1949, the plane was turned over to KLM's overhaul base at Batavia and completely overhauled in order to make a grand goodwill tour of the entire Indonesian archipelago at the request of BPM's marketing agency at Makassar, Celebes. The flight was aimed at visiting all BPM customers in the eastern part of the islands and was conducted between Sept. 11 and Sept. 24, 1949, during which period a total of 73 hours and 50 minutes were flown covering some 8300 miles. Over some stretches,

PBY PK-AKC was the first of six to serve with Shell beginning in early 1947. It crashed on December 2, 1949, at Muntok, Bangka Island, killing six of eleven aboard. Note the "Clipper" bow and observation blisters replaced by flush cargo doors. Photo taken at Oakland, Calif., Jan. 5, 1947, while being ferried to BPM at Batavia.

(William T. Larkins photo/Kavalaars Collection)

guests had been invited to fly along with invitations sent to KLM personnel, the Department of Civil Aviation, and local authorities. The tour proved a great success!

On December 2, 1949, disaster befell PK-AKC and its occupants when the machine crashed at the roadstead of Muntok, Bangka Island, about half a mile offshore. A flight had been made to view coastal shipping facilities such as beacons, buoys, lighthouses, etc., and two government officials were aboard along with nine Shell employees. In making the landing, the copilot (flying from the left seat) apparently misjudged the glasslike surface of the water on that breezeless day and the aircraft flew into the water. Of the 11 occupants, six Shell employees were killed including the two pilots and two mechanics and the remaining five passengers seriously injured. The front half of the PBY was completely destroyed, but the rear half was in fairly good condition. The official investigation determined that the plane had landed in a nose-low condition. Damage to the front half of the plane indicated that the propellers had slashed through the cockpit, flight deck, and sides of the fuselage. A total flying time of 2900 hours had been recorded at the time of the accident.

PK-AKR arrived at Morotai in 1947 still with the military blisters and continued to fly with them until late 1948. In December 1948, the plane was sent to KLM at Batavia for overhaul and it is probably here that the blisters were replaced. During 1949 and 1950, the amphibian was used to fly employees going to Australia for holidays, the route being Sorong to Ambon. At Ambon, Qantas DC-3s took the passengers on to Sydney. In mid-1950, AKR was flown to Hong Kong for major overhaul (costing \$166,000) and on the first test flight thereafter crashed into Kowloon Bay. The cause of the Aug. 28, 1950, accident was never fully known. The aircraft had successfully completed the flight portion of its test and was landing when it suddenly dived

into the water. Miraculously, both occupants of the aircraft survived the crash with the Scottish pilot losing one of his legs while the Dutch mechanic was not seriously injured. It should be noted that the PK-AKR registration used on the PBY was another instance of the reuse of a pre-war Shell marking, in this case originally having been used by a Grumman *Goose*.

PK-AKS was purchased used in 1946 and arrived at Morotai in 1947. Its flying career was terminated on August 12, 1949, when it was withdrawn from use and subsequently cannibalized for parts to support the remaining PBYs. The AKS registration had previously been used on a Sikorsky S-38B during the 1930s.

PK-AKT reached NNGPM in 1947 and was sent to Batavia for overhaul by KLM in December 1948. It returned to service and continued to fly until its Certificate of Airworthiness was due to expire at the end of 1950. However, faced with the write-off of three PBYs in a year's time, it was decided to perform another major overhaul in order to extend the ship's operational life. This was accomplished at the Dutch Navy base at Soerabaja, Java. In early 1953, NNGPM's own aviation group at Jef Man carried out another 400-hour overhaul. For various reasons, including political, it was decided not to send AKT to Java or Hong Kong for overhaul and the plane was abandoned for scrap during the first quarter of 1954. It also had carried a pre-war registration assigned to an S-38B.

In order to replace PK-AKT, Asiatic Petroleum Corp. of New York purchased another PBY for NNGPM from Southern California Aircraft Corp. for \$65,000 on October 16, 1953. Political problems in Indonesia led to the decision to register the aircraft in Holland and on October 2, 1953, the registration PH-TGP was assigned. In the U.S., the amphibian was converted to a 16-passenger configuration with a crew of four. The plane was ferried from California to New Guinea by Fleetway, Inc., and arrived at Jef Man near the end of December 1953. The Catalina kept its Dutch registration while operating in New Guinea until on January 15, 1955, it was reregistered on the New Guinea Register in conjunction with two *Mallards*. The PBY became JZ-POA and was repainted totally at this time. The plane's eventual fate is not known, but it is believed to have been disposed of by 1960.

In 1958, NNGPM purchased the sixth and final PBY to replace a *Mallard*. The plane was purchased in the U.S. as surplus from the U.S. Coast Guard and was flown to New Guinea with its blisters in place. These were apparently later removed. Little is known of the history of this machine except that it underwent overhaul at Hong Kong in March 1959. Its eventual disposition is not known. While operated by Shell it was carried on the New Guinea register as JZ-POD.



PK-AKT moored to an empty oil drum with a car tire bumper, typical of operating conditions "in the field." Photo taken July 1948 on Beraer River south of Klamono oil fields in the western part of the Vogelkop region. (H.C. Kavelaars)



PBY PK-AKR at Ambon on Oct. 10, 1949. Note NNGPM flag on tail. Engines are running in preparation for flight to Sorong and Morotai to return employees brought back from R & R visit to Australia by Qantas DC-3 whose tail is just visible at left. AKR crashed on a test flight at Hong Kong on Aug. 28, 1950. (H.C. Kavelaars)



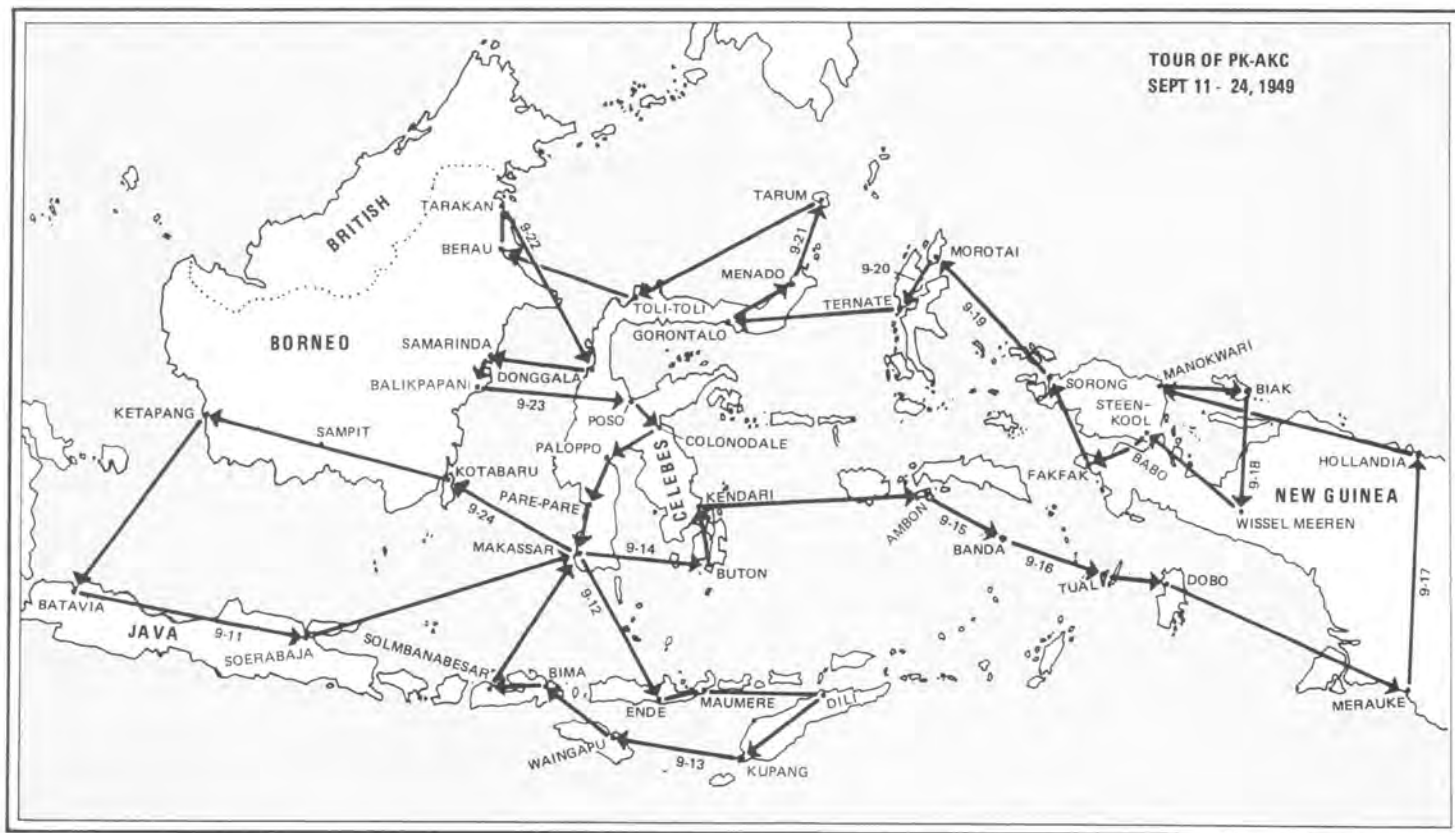
PK-AKS, the third of NNGPM's PBYs, poses for Bill Larkins' camera at Oakland on Christmas Day 1946. It was scrapped in August 1949. (William T. Larkins photo/Kavelaars Collection)



PK-AKT was apparently ferried to the Netherlands East Indies at the same time as PK-AKS for this Larkins' photo was also taken on Dec. 25, 1946, at Oakland. This plane was scrapped in early 1954. Significance of "2" on the fin is not known. The AKT registration had also been carried on a Sikorsky S-38 prior to World War II. (William T. Larkins Photo/Kavelaars Collection)



JZ-POA (ex PH-TGP) at Jef Man. Note the new paint job which was probably acquired upon registration in New Guinea in 1955. Color scheme is similar to later designs on G-73s and DC-3s. PBY in background is probably JZ-POD, dating photo 1958 or later. (W.A. Visser Photo/Kavelaars Collection)



Overall map of the area under discussion points out the 8300-mile route flown by Shell's PBY-5A PK-AKC on its "goodwill" flight between Sept. 11 and Sept. 24, 1949. Note the many Shell bases visited during the almost 74 hours of flying. (Kavelaars Collection)



Due to political problems, PBY PH-TGP carried Dutch registration from 1953 until early 1955 when registered in New Guinea as JZ-POA. Its eventual fate is unknown but it had been acquired to replace the scrapped PK-AKT. (NNGPM Photo/Kavelaars Collection)



This 1958 photo at Oakland by Bill Larkins shows the last PBY, JZ-POD, en route to New Guinea. Standard nose, painted blister, "Rescue" stripe, and "PB-5AG" designation on fin betray its U.S. Coast Guard origins. Compare this with later photo of POD with JZ-POA. After arrival in New Guinea, "Clipper" bow was apparently fitted and blisters replaced with flush cargo doors. (William T. Larkins Photo/Kavelaars Collection)

Douglas C-47—Royal Dutch/Shell has operated four different C-47s since 1951. The first aircraft was acquired in 1951 and served by itself until the late 1950s when three other planes were acquired within a period of two years. The *Dakotas* were used primarily for the long-range transport of personnel and were operated by BPM at Jakarta.

PK-AKF was the first C-47 acquired, having been purchased from Pan-African Airways Corp. Ltd. of South Africa. It arrived at Amsterdam's Schiphol Airport on March 21, 1951, but after overhaul by KLM remained idle for many months. The plane was finally flown to Jakarta during the last quarter of 1951. It was based at Jakarta and frequently flew business trips to Balikpapan on the east coast of Borneo. During an overnight visit to Balikpapan on April 17, 1958, the plane was subjected to attack at 0700 hours by a mysterious aircraft which also severely damaged the airstrip as well as attacking oil storage tanks and tankers in the harbor with bombs and machine gun fire. The plane, believed to have been a Douglas B-26 operated by Indonesian rebels, set fire to a tanker which subsequently sank, and damaged another ship at the loading jetty. The pilot was an American, believed to have been named Powell, and it is rumored that he also made attacks later at East Java and Ambon where he was shot down and captured. A death sentence was never carried out and he was released after serving time in prison.

PK-AKF was substantially damaged in the air raid and dismantled for shipment via Singapore to Hong Kong by boat for repairs. It left Singapore on June 19, 1958, and Hong Kong Aircraft Engineering Co. undertook a major overhaul at a cost of HK \$234,000. The aircraft was later returned to service with BPM for a number of years.

The second DC-3, PK-AKT, was acquired by BPM-Jakarta when it was purchased for 510,000 guilders from KLM in May



Shell's C-47A PK-AKF displays neat paint scheme as well as "Maximizer" kit installation (gear doors, tight cowlings). The first of four C-47s operated by Shell, AKF served from 1951 until about 1960. It was damaged in an air raid at Balikpapan on April 17, 1958, but rebuilt at Hong Kong. (Kavelaars Collection)

1958 having previously operated as PH-DAU. The plane was delivered to KLM at Singapore and taken over by BPM on June 17th. After acceptance and test flying, the plane was flown to Jakarta on June 22. It is known that the aircraft was originally purchased as a replacement for two *Mallards* which had been withdrawn from service, however the damaging of PK-AKF caused AKT's first duties to be as a replacement for the now-absent DC-3. It is not known exactly how long this plane was operated by BPM, but it was subsequently sold to Pelitia Air Service of Indonesia and until recently was still in operation.

PK-AKR was purchased from Malayan Airways Ltd. for 30,000 pounds and registered on March 3, 1959. It was operated by BPM at Jakarta, but no information is available on its use or its disposition. It was, however, later operated by Pelitia Air Service so it may have been disposed of at the same time as AKT.

The fourth DC-3, PK-AKJ, was acquired by BPM at Jakarta between November 1959 and March 1960 but nothing is known about its use or subsequent history.

Grumman G-73 *Mallard*—Grumman's first postwar civilian amphibian attracted Shell's attention for the same reasons the G-21s had done so in the 1930s: speed, range, amphibious capability, plus design and construction to the standards of the now-famous "Iron Works." All of these factors were very important when an aircraft was being operated in a faraway corner of the world well removed from paved runways, numerous flying fields, and nearby parts depots. It is not known precisely how and when Royal Dutch/Shell became interested in the *Mallard*, but one may assume that Grumman's European representatives were frequent visitors to the aircraft operations staffs in both London and The Hague. Even by 1947, the *Mallard* had proved



While at Amsterdam for checks en route to the Netherlands East Indies, PK-AKD received permission for water tests on Westeinder Lake between 8:00 a.m. and 11:00 a.m. on June 18, 1948. This is one of a series of photos taken in conjunction with those tests. (KLM Aerocarto Photo/Kavelaars Collection)

itself a world-class aircraft and served with other oil firms operating in remote areas.

Altogether, five *Mallards* were operated by Shell in Indonesia (PK-AKD/AKE/AGK/AKH/AKU). Three were purchased new from Grumman in 1948 and the remaining two were acquired used in 1951. The G-73s were unique in that they were the first of Shell's amphibians (other than the PBYs) to be flown to Indonesia rather than being crated and sent by ship as had been all the aircraft operated in the 1930s and early 1940s. The long ferry flights from New York to Batavia had as their first obstacle the treacherous North Atlantic crossing. It should be remembered that only a few years previously, crossings of this ocean could only be considered by large flying boats and long-range, multi-engine bombers and transport aircraft. World War II had seen the construction of numerous "stepping-stone" bases across Canada, Greenland, and Iceland which made this



trip possible for shorter range aircraft but by no means did this make the journey any easier. All of the *Mallards* stopped at Amsterdam en route to the Indies and this provided an opportunity for KLM's technical staff to go over each aircraft in detail before it continued the long journey to the East. For the flights from Amsterdam to Batavia, the amphibians generally flew routes which kept them in close contact with KLM flight operations and maintenance facilities.

Four of the five aircraft were to serve in Indonesia for over a decade each so their durability and capabilities were without question. The fifth aircraft, PK-AKE, was lost to a fire while undergoing maintenance less than two years after its arrival. Disposal of the four remaining aircraft began in 1959 when PK-AKU was scrapped. Three years later, PK-AGK was sold to East Coast Airlines of Australia and thus began a journey which would see it return eventually to the U.S.A. The fates of the two remaining aircraft, PK-AKD and AKH, are not quite as well known, but it is believed that both were sold to the Indonesian Police Force in late 1963. The history of each aircraft appears below.

The first *Mallard* for Shell's Indonesia operations, PK-AKD, was ordered from Grumman on December 8, 1947. On February 16, 1948, this aircraft made a demonstration flight of some 1600 miles in order to demonstrate its range capabilities which were aided not only by standard internal tankage, but by the optional fuel tanks in the wingtip floats in addition to the ferry fuel tanks

Detailed map of the Dutch New Guinea area in which NNGPM operated both before and after WWII. Note the northwestern area called Vogelkop after its resemblance to a bird's head. (Kavelaars Collection)

in the cabin. Early in March 1948, Shell's New York affiliate (Asiatic Petroleum Corp.) cabled The Hague to inform that the plane had been test flown and completely checked out. From the time the order had been placed, the London and Hague offices had conducted extensive studies and planning on the route to be followed from the U.S. to Indonesia, principally the sector across the Atlantic. From the outset, it had been decided to fly the aircraft to its destination in order to avoid undesirable delays in shipping. When the recommended route of Labrador-Green-

Mallard PK-AKD approaching liftoff during water tests at Westeinder Lake, Holland, on June 18, 1948. (KLM Aerocarto Photo/Kavelaars Collection)



land-Iceland-Prestwick-London/Blackbushe-Amsterdam had been decided upon, it was recommended that the flight not be attempted prior to April 10, with an expressed preference that it should occur about mid-May. Furthermore, on the advice of the London office, a crew with adequate North Atlantic experience was to be hired to fly AKD to London despite the fact that G.A.H. Macpherson, one of Shell's pilots in Batavia, had over 800 hours in Grumman amphibians and a type rating for the *Mallard*. British Air Services provided a three-man crew (pilot, flight engineer, radio operator) but Macpherson and Krayenhoff (also of Shell) were to be sent to the U.S. to accept the aircraft and test it.

Although the *Mallard* was not ordered with an autopilot, on Macpherson's insistence a Sperry unit was eventually installed in April or May 1948. While at Grumman, Macpherson, acting on instructions from Batavia, requested an increase in takeoff gross weight from 12,750 pounds to 13,500 pounds from Grumman's Engineering Division. Since the 12,750-pound figure represented the maximum permitted under the aircraft's U.S. type certificate, Grumman was reluctant to attempt any increase in gross weight because of the deterioration of single-engine performance. Finally, Shell did obtain approval (apparently from the Netherlands East Indies authorities) for a special 1000-pound allowance for the ferry flights of the first three aircraft. However, during actual operation in the Far East the original weight limit was adhered to. It is not known exactly when AKD flew the Atlantic as there was some delay resulting from U.S. State Department clearances but it is believed that the flight occurred

in June 1948.

Upon arrival in Amsterdam, KLM checked out the aircraft and on June 18, 1948, a test flight was made with water landings being done on lakes in the vicinity of Schiphol airport for which a special permit had been obtained from the Ministry of Traffic and Waterways. During its stay at Amsterdam, AKD was inspected by Prince Bernhard of the Netherlands, an accomplished pilot. On June 29th, PK-AKD departed in the company of *Mallard* PK-AKU for a joint ferry flight to Batavia. AKD was flown by Macpherson with Shell's Aviation Manager for Batavia (Krayenhoff) aboard. At Malta the next day, technical troubles prevented AKD from keeping up with AKU, but on July 1st ferrying was resumed with arrival at Malta. Both aircraft arrived at Batavia on July 8, 1948. By mid-October of that year, AKD had logged some 200 hours. Soon afterwards, difficulties were encountered with the collapse of the plane's nosewheel while the aircraft was on the ground. On two occasions, hydraulic pressure was allowed to drop and the nosewheel retracted, an obvious failure to use the manual locking device provided. The aircraft was operated by BPM from Batavia. The only operational statistics available were hours flown: 1955—188 and 1956—214. In 1958, AKD was offered for sale but without success. Apparently the aircraft was available for sale through at least mid-1962 since at that date Shell's agent, W.S. Shackleton Ltd. of London, was offering the aircraft with a total accumulated airframe time of 4310 hours. It is believed the aircraft was finally sold in late 1963 to the Indonesian Police Force and was subsequently registered P2011 but this is unconfirmed.

The second *Mallard*, PK-AKU, was ordered by NNGPM in a cable to the main office in The Hague on March 20, 1948, and the order was executed by Asiatic Petroleum Corp. in New York. In addition to the aircraft, the order included a spare engine, two spare propellers, special radio equipment, a complete set of

Part of the airstrip on tiny Jef Man coral island in the vicinity of Sorong, NNGPM headquarters from 1946-1960. The island's maximum length is about 2½ kilometers. Constructed by NNGPM in 1935-1936 as one of several bases to accommodate KNILM and own aircraft engaged in the aerial survey of its concession areas, it was also used by the Japanese during World War II. Wrecks of Japanese aircraft were lying around in the bush. (W.A. Visser Photo)





instruments, and the standard mechanical spares. The plane was ferried across the Atlantic in the same manner as AKD, arriving in Amsterdam on June 23, 1948, shortly after the former's arrival. On June 29, AKU departed with AKD for Batavia being flown by J.F.E. Claringbould. With AKD's mechanical troubles, AKU flew on alone at least to Basra, Iraq, but both planes arrived at Batavia on the same day. Despite the fact that AKU had been ordered by NNGPM, it remained in Batavia under BPM operational control until early 1950. It is believed that NNGPM did not accept the aircraft at this time because of the fact that all three PBYs were operational and provided adequate capacity and also because Dutch New Guinea had no civil register at this time. The latter tends to be confirmed by a cable from The Hague to Sorong dated Dec. 24, 1949, stating that it was impossible to transfer aircraft from Indonesia to Dutch New Guinea because Dutch East Indies Aviation Regulations prohibited such a transfer. Despite the administrative problems, AKU had to be operated by NNGPM because of the loss of three PBYs which placed a severe strain on aircraft operations. Despite any political ramifications, the Sorong base needed a long-range amphibious aircraft for emergency situations where it was necessary to fly personnel to Manila, Singapore, Jakarta, Port Darwin, or Brisbane.

With Indonesian independence on December 27, 1949, there had been many difficulties with the registration and transfer of Shell aircraft. Indonesian authorities refused to allow changes of registration to Dutch New Guinea. Discussions were going on between the New Guinea government and the Rijksluchtvaart Dienst (Civil Aviation Board) in the Netherlands on what type of registration New Guinea-based aircraft were to get. The situa-

Grumman Mallard PK-AKD (c/n J35) on test flight over Holland on June 19, 1948, while en route to Batavia. (KLM Aerocarto Photo/Kavelaars Collection)



While at Amsterdam's Schiphol Airport, G-73 AKD was inspected and flown by Crown Prince Bernhard (in uniform). The Prince, an accomplished pilot, flew a number of aircraft during the 1940s. Others are (l. to r.) unidentified KLM official, Shell Director van Hasselt, and Shell flight crew. Tail of KLM DC-4 PH-TCF in background. (Kavelaars Collection)



Shell's first Mallard, PK-AKD, in flight over the South Sumatran jungle on the final leg of its 11,500-mile ferry flight from New York to Batavia. Photo probably taken from Mallard PK-AKU. (Olie/Kavelaars Collection)



Mallards PK-AKD and AKU at Batavia in July 1948 after completing 11,500-mile delivery flight from New York. Both arrived on July 8, 1948. AKU was later reregistered JZ-POC and finally scrapped at Singapore in March 1959. Man walking towards AKU is Shell pilot Claringbould. (Shell—London/Kavelaars)



Prince Bernhard awaits start of PK-AKD's starboard engine as Shell pilot works throttles and starter. Overhead throttles and engine controls were standard on all amphibians to simplify control linkages. (Kavelaars Collection)

tion remained undecided until sometime in 1953. Beginning in 1952, the prefix JZ had been authorized by international convention for Dutch New Guinea but it was not until January 15, 1955, that AKU officially became JZ-POC. The change in registration from PK to JZ without Indonesian cooperation was accomplished when licenses of Shell's maintenance personnel were renewed in New Guinea, thereby permitting the aircraft to continue to fly under Certificates of Airworthiness until such time as the formal registration of the aircraft could be accomplished. At this time, the Indonesian government was simply informed that the aircraft had been canceled from Indonesian marks upon assignment of the New Guinea registrations.

The newly registered JZ-POC continued to serve NNGPM without incident until February 4, 1958, when it was flown to Singapore to be transferred to BPM's Jakarta operation. BPM needed an aircraft to replace the two *Gooses* which were being withdrawn from use and POC was acquired from NNGPM without inspection. The flight to Singapore was necessary in order to meet Indonesian insistence that the registration PK-AKU be

reassigned prior to the plane's return to Jakarta. When BPM personnel arrived at Singapore to take delivery of POC, it was discovered that the aircraft was in unsatisfactory condition and its delivery rejected. Too many sections proved corroded, both internally and externally; there were fuel tank leaks, non-standard engines, etc. A complete overhaul at Hong Kong would cost at least HK \$250,000. The Hague and London were at first skeptical of Jakarta's findings since the plane's performance had been good and expenditures for maintenance had been quite reasonable. Finally, The Hague informed BPM that the transaction couldn't be canceled and that the purchase price must be paid by Jakarta.

Abandoned and unattended, JZ-POC was left in Singapore's damp, tropical climate to deteriorate. After a few months, The Hague requested Malayan Airways to look after the plane and to perform periodic run-ups and hangar the aircraft. Since the *Mallard's* Certificate of Airworthiness was due to expire in October, Shell decided to offer it for sale as is through W.S. Shackleton Ltd. of London at a price of 15,000 pounds in Singapore. While some interest was expressed occasionally, no firm offers were received and in January 1959 the aircraft was withdrawn from sale. After evaluation of the aircraft in March, it was decided that it had passed the point of economical repair and that the resources in Singapore were unable to put the aircraft in sufficient condition for ferrying to Hong Kong for complete overhaul. Since local authorities were pressing for the plane's removal from the hangar because of fire hazard and because the deteriorating condition brought negative publicity to Shell, it was decided that the aircraft was to be scrapped. On March 11, 1959, The Hague cabled NNGPM that POC was to be dismantled and scrapped and shortly thereafter this was done by Shell mechanics.

In a cable dated September 3, 1948, The Hague requested Asiatic Petroleum Corp. in New York to purchase a new *Mallard*, to become PK-AKE, for a total price of \$190,000. At Shell's



request, several modifications were to be incorporated including modification of the bow hatch, splitting of the cowlings, and relocation of radio equipment. Grumman did the hatch modification while Aero Trades Co. at Roosevelt Field handled the remaining items. Shell's Macpherson was kept busy flying AKE between MacArthur, Bethpage and Roosevelt in order to keep the aircraft modifications progressing. January 13th, Macpherson flew AKE from Roosevelt to MacArthur while on the 17th it was MacArthur to Bethpage. On the 25th the aircraft was returned to MacArthur while the 29th saw the plane arrive at Bethpage again. Upon completion of all work, the investment in AKE totaled \$210,000, the most expensive *Mallard* ever to leave the factory.

Again, British Air Services was hired to ferry the aircraft across the Atlantic and this journey began on February 27, 1949. In London and The Hague, however, problems had arisen. Pakistan, India, and possibly Burma, were putting restrictions on the overflight of Dutch aircraft and it was necessary to find some means of delivering the aircraft without hindrance. It was finally decided to transfer ownership of the aircraft from BPM in Jakarta to Shell Refining and Marketing Co. in London and reregistering the aircraft in Britain. On March 5, 1949, while AKE was already at Amsterdam, its East Indian registration was canceled and the British registration G-ALLJ assigned. During KLM's inspection of the aircraft between March 10 and April 8, 1949, the new registration was applied and after final checks British aviation authorities cleared the aircraft for flight. On April 13, 1949, G-ALLJ departed the Netherlands for Batavia, being flown by a three-man British crew. Stops included Malta, Cyprus (April 14), Beirut (15th), Bahrain (16th), Karachi (17th), Calcutta (18th), Bangkok (19th), and Singapore (20th), with arrival in Batavia also on the 22nd of April. Upon arrival, the Netherlands East Indies registration was again applied for and on April 25, 1949, it was again placed on the aircraft. Operational use began, but by mid-October of that year AKE had logged a total of only 175 flying hours.

There is no further information on this aircraft until its de-

Mallard PK-AKE (c/n J41) poses for its delivery photo at Grumman's Bethpage, N.Y., plant. When it was delivered, it was the most expensive G-73 to leave the factory, costing some \$210,000. It was burned beyond repair at Jakarta in Jan. 1951 when a spark ignited gasoline used to wash it down. It briefly carried G-ALLJ for the ferry flight from Amsterdam to Batavia.

(Grumman Photo/Kavelaars Collection)

struction. While the aircraft was undergoing maintenance at Jakarta on January 27, 1951, workmen used gasoline to wash down the aircraft to clean it while it was hangared. No one knows exactly how the fumes were ignited, but needless to say fire broke out. Airport personnel were able to remove *Mallard* PK-AKD and an auto from the hangar before the burning AKE was towed out and the airport's fire department was able to quickly extinguish the flames with foam. By this time, however, the plane was a total loss, the fire having destroyed the aircraft from the trailing edge of the wing back. A newspaper clipping from the Dutch-language Indonesian newspaper *Nieuwsblad* shows the tail section from approximately the entrance door aft relatively intact, but damage to the hull was complete for about a six-foot section, thereby rendering any thoughts of rebuilding totally useless. It is likely that any useful parts were removed to support the other *Mallards* and the remainder of the airframe scrapped.

Discussions between The Hague, London, Batavia, and Sorong about the purchase of replacement amphibians for the PBYs were begun in late 1949 and continued into 1950. The Aviation Department in London was under the command of Group Capt. Douglas Bader, the World War II hero, and not surprisingly recommended that the Percival *Prince* and Short *Sealand* amphibians were available at less cost than new *Mallards*. To a partly British firm the expectation of a base factory cost for a *Sealand* of 56,000 pounds versus about \$138,000 for a *Mallard* was certainly attractive. There were some drawbacks, however. The *Prince* was of no use to NNGPM because of the lack of airfields in New Guinea. Exploration parties had to rely on coasters and seaplanes which could navigate the big rivers. It first appeared that the Short *Sealand* might be a possible replacement for the *Mallard*, but a performance comparison between the two types showed

the G-73 to be superior both in payload and range. The situation for BPM in its Java, Borneo, and Sumatran operations were quite different. Java and Sumatra had quite a number of airfields and water landings were rare. In British Borneo (Sarawak, Brunei, and British North Borneo), the Shell administration was British and the decision was made to purchase *Princes* and *Sealands* (see detailed histories above). At Balikpapan on the eastern coast of the former Dutch part of Borneo, the Shell operations were under Jakarta's control. Two Grumman *Gooses* had been stationed there after the end of World War II. Since this was an area which did have significant amphibious requirements, NNGPM and The Hague decided by the end of 1950 that the *Mallard* would be selected.

During discussions at The Hague in February 1951, a proposal had been made to buy four new *Mallards* because of the type's satisfactory performance in the Indies as well as the fact of fleet standardization. However, the \$750,000 price quoted by Grumman presented a problem and the proposal was rejected. It was then proposed that *Mallard* PK-AKD be moved from Jakarta to Sorong temporarily to provide transportation backup to *Mallard* AKU in New Guinea during the emergency period following the loss of the PBVs. This, however, was not done because of the aforementioned registration difficulties presented by Indonesian authorities. On February 21, 1951, The Hague requested Asiatic Petroleum Corp. in New York to purchase another *Mallard*, either new or used. At that time, Jimmy Doolittle was an advisor to Asiatic on aviation matters, and fame and reputation were considered to be an asset in the search for a G-73. On April 2, The Hague cabled Sorong that a used *Mallard* had been purchased from the Bendix Corp. and that the plane would remain in New York for overhaul and modification prior to its delivery. The Indonesian registration PK-AGK was assigned to this aircraft which had originally been a Grumman demonstrator. Since a Civil Aviation Bureau had been established in New Guinea after Indonesian independence, the registration JZ-POA had been reserved for this aircraft on May 16, 1951. However, as discussed elsewhere, political problems between the Dutch and Indonesian governments had caused the Dutch in New Guinea to postpone the actual entry of aircraft on its civil aviation register. As a result, the plane was actually flown with its Indonesian registration despite the fact that it was operated in New Guinea.

It is not recorded precisely when AGK was delivered to Sorong, but it is known that the ferry crew had arrived in New York in late January 1952, so it is probable that the aircraft reached Sorong shortly thereafter. In February 1953, The Hague instructed Jakarta to cancel the Indonesian registrations of PBV PK-AKT as well as *Mallards* AGK and AKU. Three weeks later, Jakarta replied that the Indonesian authorities were unwilling to do so because of political reasons so all three aircraft were required to retain their PK registrations until January 15, 1955, when the aircraft were transferred to JZ registry. While *Mallard* PK-AGK had been issued a reservation for JZ-POA, the long delay in accepting it caused the identification to be assigned to another aircraft so when the 1955 reregistration was accomplished, PK-AGK became JZ-POB instead. Little is known of the operations of AGK/POB so it must be assumed that all went well. In early 1957, the plane was sent to Hong Kong for overhaul. It is believed that the aircraft was leased to de Kroonduif from late 1959 until the summer of 1960, but this had not been totally confirmed. NNGPM pulled out of New Guinea in 1960,



Mallard PK-AKU approaches mooring buoy on the Steenkool River, Feb. 1950. Note crewman in bow hatch with pole ready to snag buoy. (H.C. Kavelaars)



PK-AKU at Jef Man in Dec. 1950 with PBV in background. Note bird design which appeared on some PBVs and G-73s about this time. Bird depicted is the King Bird of Paradise which is the smallest of 28 kinds living in New Guinea. (H.C. Kavelaars)

but apparently the aircraft remained. In 1962 it was sold to East Coast Airlines of Australia and later returned to the U.S.A. According to other sources, the aircraft had been abandoned at Biak for about two years prior to its sale. While the Indonesian authorities apparently made efforts to make the craft operational, they were unsuccessful and the deteriorating condition of the machine caused them to eventually allow East Coast to purchase the aircraft. The aircraft was made flyable but hydraulic problems caused the ferry flight to Brisbane to be flown wheels-down.

Shell's final *Mallard*, PK-AKH, was probably purchased to replace sister ship AKE which was lost to a ground fire. PK-AKH was acquired from the Bendix Corp. in September 1951, but it was over a year before the aircraft reached Indonesia. The plane had been delivered by Bendix in early December 1951 to Asiatic Petroleum Corp. in New York. Since it had been a demonstrator for Bendix's communications and navigation equipment, the amphibian was well equipped—excessively so for Shell's operations which required relatively minimal electronics. An 800-hour overhaul was performed by the Lear Company during which much of the Bendix equipment was removed in order to reduce the basic operating weight of AKH to levels comparable to the other G-73s operated by Shell. Engines and props were overhauled as well and world-traveling G.A.H. Macpherson was again sent to New York to perform acceptance tests. Test flying totaled an extensive 32 hours of which almost two hours were spent on water landings and takeoffs. The aircraft had been



flown to Teterboro Airport in preparation for its Atlantic crossing when on August 26, 1952, the ferry crew detected oil leaks.

The next day, a hole in the battery casing was discovered, but both "squawks" were repaired and on August 28th the plane left for Montreal by way of Burlington, Vermont. The following morning the *Mallard* left for Goose Bay, Labrador, and spent two days awaiting favorable conditions before flying to Bluie West One and continuing to Keflavik, Iceland, on August 31st. The original route had called for a stop at Prestwick, Scotland, but favorable weather on Sept. 1st caused the flight to go directly to London's Blackbushe Airport. Shortly thereafter, the plane arrived at Amsterdam-Schiphol where KLM performed their usual checks. On October 2, 1952, the aircraft left Amsterdam with Macpherson in command, A. Bakker as engineer, and G. Mars as radio operator. The first stop was Nice, France, where repairs were necessary. It seemed that the flight had been made through the Rhone Valley where weather conditions (low clouds, turbulence, icing, and sleet) had caused the forward end of one antenna to foul the starboard elevator, punching a hole in the fabric. About an hour out of Nice, hydraulic pressure was lost and the landing gear had to be lowered manually for arrival. After repairs had been completed, AKH left for Malta on October 4th. Cyprus was reached on the 5th while a six-hour, non-stop flight over the Arabian peninsula caused Bahrain to be reached on the sixth. Arrival at Karachi was made on the 7th but bad weather caused a stop at Gaya, India (near Calcutta) on the night of the eighth. Calcutta was finally reached on the ninth, but problems with the radio compass necessitated repairs. Strong headwinds delayed the trip for two days even after the radio had been fixed so arrival in Bangkok was not until October 13th. Singapore was reached on the 14th while Jakarta finally appeared under the *Mallard's* wings on October 15, 1952. After arrival, AKH continued to display mechanical problems on an almost regular basis and because of this BPM could not depend on this aircraft.

It was not until June or July 1953 that the first water landing of this aircraft was done in Indonesia. On that occasion, AKH's behavior was reported as strange and quite different from other *Mallards*. On landing the plane would veer about 15° to the

right while on takeoff the ship proved difficult to unstick. During the last week of July, Jakarta cabled The Hague requesting that Grumman be contacted for all available historical information on the aircraft. BPM's technical staff felt that the right float might have been out of position while the wing showed signs of torsion, also on the right side. In early August, AKH's Certificate of Airworthiness was withdrawn. A reply from Grumman indicated that if a float was misaligned it should also cause problems with in-flight characteristics but since these proved to be normal, the float theory was eliminated. Grumman also advised that a check be made of the hull fairings for alignment as well as inspection of any hull repairs. Both of these were accomplished but failed to solve the mystery. Jakarta then requested that Grumman send someone out to inspect the aircraft, but The Hague and London were reluctant to do this and in reply suggested that BPM make a number of measurement checks on the hull, wings, floats, etc., to assure that there was no asymmetry. The by-now, well-known G.A.H. Macpherson (who was based in London) was contacted since he had test flown the aircraft in New York. His advice drew into question the professional competence of the BPM pilots in Jakarta since he had failed to note any handling problems in the original tests.

Continuing detective work turned up the fact that the 800-hour inspection performed by Lear should have in reality been a 1600-hour inspection. The entire hydraulic system's plumbing proved to be corroded inside and out and information was also unearthed that the aircraft had been involved in an accident in October 1947 subsequent to which significant repair work had been done on the hull and right wing. In evaluating the pilots' proficiency, it was determined that only eight water landings had been made of which seven had been done by the chief pilot. As has been discussed before, BPM's Jakarta flying did not involve much in the way of water landings and upon questioning by London it was disclosed that the only water work had been done in the harbor of Tanjung Priok, not too far from Kemajoran Airport. Traffic in the harbor area made aircraft maneuvering difficult if not impossible, and Indonesian authorities had forbidden any landings on the open sea outside of the breakwaters. This accounted for the lack of water flying proficiency.

Between August and December 1953, BPM's mechanics completely removed the old hydraulic system and installed a new one which they had obtained from the spares stock at Sorong. The symmetry measurements were made and only three minor discrepancies were noted. Finally, on January 4, 1954, AKH was airworthy again! BPM had insisted that an expert Grumman pilot be provided to advise on flying operations and to fly water landings in AKH but Grumman advised that they could not provide such a person so it was arranged to hire a freelance pilot qualified on amphibians. This man, W.C. Hunt, was in Jakarta from March 13 to April 6, 1954. Hunt had sent a report to BPM's management on March 29th indicating that from a technical point of view the operational staff was qualified and that flight tests of AKH had shown it to be completely normal on land, sea, and air. In the meantime, The Hague had instructed BPM Jakarta to increase the water landing practice when none was being done on an operational basis.

No subsequent troubles were reported for AKH although it does appear that the plane's reputation caused it to become a "hangar queen." In 1955 it flew only 83 hours while in 1956



Mallard PK-AKH (c/n J17) was the last G-73 to be acquired (1951). It was the subject of extensive tests for supposed "strange" water-handling characteristics. Photo shows it being rolled into Hong Kong Aircraft Engineering Co. hangar for overhaul in 1957. (J.A. Fierant/Kavelaars Collection)



PK-AKH at Sanga-Sanga was operated by BPM at Balikpapan and carries a slightly revised paint scheme (note "Shell" on vertical fin). Torque from engines causes most still water taxiing to be done with the right float out of the water. (H.C. Kavelaars)

this decreased even further to 33 hours. By the end of 1955, AKH was temporarily assigned to Balikpapan when *Gooses* PK-AKA/AKB were being overhauled. On June 23, 1956, the Indonesian government requested Shell's help in transporting money to four isolated locations on Celebes and one on Halmahera with their aircraft. Since BPM's *Mallards* were the only amphibious aircraft available, it was agreed that the job would be done but with a very specific understanding as to the operations and that all risks were to be to the account of Indonesia. These money flights were performed with AKH between June 23 and 30, 1956, and were not included in the 33-hour flying time reported for 1956.

During the first few months of 1957, AKH was sent to Hong Kong for overhaul. In late May 1958, The Hague proposed to London that the *Mallards* be sold and it was decided to make a package of PK-AKD and AKH along with the Singapore-stored JZ-POC in order to make the aircraft more attractive. This suggestion had originated with Jakarta because of the latter's increasing use of DC-3s. During late 1958, the two *Gooses* were

sold and plans to acquire a third DC-3 were well underway. The temporary loss of the DC-3 at Balikpapan by the mysterious bombing attack caused a further speedup on DC-3 acquisition and AKH was offered for sale with AKD (JZ-POC having been scrapped) through Shackleton in London for 50,000 pounds as-is having a total airframe time of 5623 hours. No buyers were found and the aircraft apparently remained stored until sold to the Indonesian Police Force in November 1963 in the company of AKD, thereby closing a long and very interesting chapter in the operation of Grumman amphibians by Shell.

CONTRACTOR AIRCRAFT

In addition to the numerous Shell-owned aircraft discussed above, a number of helicopters were chartered from British helicopter operators during the early and middle 1950s. In New Guinea, Augusta-Bell 47D and Sikorsky S-55 helicopters were used for the support of geophysical parties as well as for the transport of drilling equipment. This work began about September 1952 and was expanded to British Borneo about 1956. Three AB-47Ds were transferred to Bolivia in 1957 but continued to carry their VR registrations of the British Far East territories.

EPILOG

From the foregoing, it will be clear how large and important the technical aviation section of a large, multi-national oil company can be. During the time period which we have discussed, the entire Malay archipelago, including New Guinea, was one of Shell's major areas of activities. Considering that the search for oil in other areas required the use of aircraft as well, one can imagine that during those years Shell's "air force" was rather large, larger than the fleets of some major international air carriers. According to *The Aeroplane* of April 27, 1961, Shell's worldwide fleet of owned aircraft totaled some 80 machines while an equal number were hired from contractors.

In 1962, Dutch New Guinea was ceded to Indonesia and in 1963 all Shell properties in Indonesia were confiscated thereby ending some 70 years of operations for the oil company in that area. Early in the 1970s, Shell returned to Indonesia as a partner in a joint venture with another oil company, the political climate in Indonesia having changed in the preceding decade.



AIRCRAFT OPERATED BY/FOR ROYAL/DUTCH SHELL 1934-1963

TYPE	NO. PERIOD OPERATED	
Auster J-5B <i>Autocar</i>	1	1953-1956
Consolidated PBV-5A <i>Catalina</i>	6	1946-1960
de Havilland DH-89A <i>Dragon Rapide</i> (Chartered)	3	1935-1942
Douglas C-47A/B <i>Skytrain</i> (<i>Dakota</i>)	4	1951-1963
Ford 5-AT-B Tri-Motor	1	1936
Grumman G-21A <i>Goose</i>	7	1937-1958
Grumman G-73 <i>Mallard</i>	5	1948-1963
Percival P.50 <i>Prince</i>	4	1950-1968
Piper L-4J <i>Cub</i>	5	1947-1949
Short SA-6 <i>Sealand</i>	2	1952-1958
Sikorsky S-38B	2	1936-1942
Supermarine <i>Sea Otter</i>	1	1949-1952
	41	

Extremely rare photo of *Mallard* c/n J41 with British registration G-ALLJ taken at Batavia by Hugo Hooftman within 3 days of plane's arrival on April 22, 1949 (PK-AKE repainted on 25th). Plane flown New York-Amsterdam as AKE but changed to G-ALLJ in early April 1949. It left Amsterdam on 4-13-49 and arrived on the 22nd so it actually carried British marks for only a month! It was repainted as PK-AKE three days after arrival at Batavia. It was later destroyed while undergoing maintenance. (Hugo Hooftman/Rodina Collection)

AIRCRAFT OPERATED BY/FOR ROYAL DUTCH/SHELL 1934-1942

ITEM	TYPE	C/N	HISTORY
1	Ford 5-AT-B	5-AT-42	Purchased in U.S. by KLM for evaluation as aerial survey aircraft, shipped to Amsterdam and test flown after assembly 6-19-35 with its former U.S. registration NC9676. Stored at Rotterdam Airport after a few months, fate unknown. Registered to KLM 9-4-35 as PH-AKE but believe marks never worn. PH-AKE later canceled. East Indies R/N assigned 1938 as PK-AKE of BPM but believed a paper formality only. Probably never left Holland.
2	de Havilland DH-89A	6296	Acquired by KNILM for surveys, modified 9-35 and flown to East Indies, reregistered PK-AKU. Registration canceled 8-16-38. Crashed Ketapang, Madura, circumstances unknown.
3	de Havilland DH-89A	6292	As c/n 6296 but reregistered PK-AKV. At Andir at capitulation to Japanese 3-8-42 or may have been broken up (uncertain).
4	de Havilland DH-89A	6294	As c/n 6296 but registered PK-AKW. Registration canceled 3-7-36 as crashed in New Guinea.
5	Sikorsky S-38B	414-14	Acquired July 1936 from U.S. ex-NC23V, flown by NNGPM and named "BAKOPA" from initials of joint owners (BATAafsche, KOLONIALE, and PACIFIC). Reported destroyed by enemy action at Buitenzorg 2-19-42 either by attack or intentionally. Registered PK-AKS.
6	Sikorsky S-38B	314-12	Acquired 1936 from U.S. ex-NC6V, flown by NNGPM. Reported destroyed Buitenzorg 2-19-42 either by attack or intentionally. Reg. PK-AKT.
7	Grumman G-21A	1010	Delivered Asiatic Petroleum in NYC on 11-17-37, believed delivered to BPM, exact fate unknown. May have been ex-VH-AAZ. Reg. PK-AKR.
8	Grumman G-21A	1056	Delivered Asiatic Petroleum in NYC on 7-31-39, shipped by sea to New Guinea and arrived late 1939, registered PK-AKA to NNGPM at Babo, reported leased to KNILM 11-41, at Andir at capitulation 8-3-42.
9	Grumman G-21A	1057	Delivered Asiatic Petroleum in NYC on 8-14-39, shipped by sea to New Guinea, arrived Babo 1-18-40. Registered PK-AKB by NNGPM. Destroyed by enemy action Dobo 2-2-42.
10	Grumman G-21A	1009	Originally delivered Lord Beaverbrook 11-9-37 as G-AFCH, sold MMNNG 7-38 and registered PK-AER. Destroyed by enemy action Lake Tondano 12-26-41.
11	Grumman G-21A	1008	Delivered Asiatic Petroleum in NYC 10-25-37 as VH-AAZ for use in New Guinea, Reg. 6-39 as PK-AES of MMNNG. Crashed at Lake Sentani due pilot error or written off Koepang 1-26-42 (uncertain).

There are still several unresolved problems concerning the aircraft operated during this period in addition to the specific uncertainties indicated above:

(1) Registrations PK-AKC and PK-AKD were reserved for NNGPM Grumman G-21A but were never taken up. Which aircraft these may have been intended for is not known.

(2) It has been reported that BPM operated a G-21A in 1940/1941 with the registration PK-BPM but no further information is known nor is it certain that such an aircraft actually existed. There are several possibilities if there

was such an aircraft: (a) it may have been one of the above G-21s reregistered; (b) it may have been one of the two G-21As delivered to KNILM in 1940 as PK-AFR (c/n 1080) and PK-AFS (1081) and simply leased and/or reregistered (both reported destroyed early 1942 with AFR/AFS markings); (c) it was another aircraft entirely. If the latter is true, it may have been NC1294 (1011) which was delivered in the U.S. to an individual on 11-26-37 but for which no further history is known. C/n 1011 is only likely candidate as all other civilian aircraft have subsequent histories and most deliveries during 1939/1940 were military aircraft.

This December 1950 photo shows Shell's second G-73 as Jef Man Island, base of NNGPM's aircraft operations after 1950. PK-AKU displays unusual bird emblem below cockpit window. (H.C. Kavelaars)



CORPORATE NAMES AND ABBREVIATIONS

ABBREVIATION	CORPORATE NAME AND TRANSLATION	ADDITIONAL INFORMATION AND REMARKS
BMP Co.	British Malayan Petroleum Co.	Royal Dutch/Shell subsidiary formed in 1922 to acquire oil rights in Brunei. Shell Brunei after 1963.
BPM	N.V. Bataafsche Petroleum Maatschappij.	Exploration and production arm of Royal Dutch/Shell, founded after 1907 amalgamation, after independence became P.T. Shell Indonesia.
KNILM	Koninklijke Nederlandsch-Indische Luchtvaart Maatschappij (Royal Dutch Indies Airline Co.).	KLM subsidiary founded 1928 to provide air service in Dutch East Indies. Not reestablished after World War II.
KLM	Koninklijke Luchtvaart Maatschappij voor Nederland and Koloniën (Royal Airline Co. for Netherlands and Colonies).	The Dutch flag airline founded on Oct. 7, 1919.
KNPM	N.V. Koninklijke Nederlandsche Petroleum Maatschappij (Royal Dutch Petroleum Co.).	Founded June 16, 1890, granted oil concessions in Dutch East Indies, became partner in Royal Dutch/Shell in 1907.
MMNNG	Mijnbouw Maatschappij Nederlands Nieuw Guinee (Mining Company of Dutch New Guinea).	Mining company involved in still unclear relationship with NNGPM aircraft.
NIHM	Nederlandsche-Indische Industrie en Handel Maatschappij (Dutch Indies Industries & Trade Co.).	Trading company owned by the "Shell" Transport and Trading Co., origin in the 1800s, origin of the "Shell" trademark.
NKPM	Nederlandsche Koloniale Petroleum Maatschappij (Dutch Colonial Petroleum Co.).	Subsidiary of Standard Oil of New Jersey formed in 1912 to explore for oil in Indonesia, after independence became P.T. Stanvac Indonesia.
NNGLM	Nederlands Nieuw Guinee Luchtvaart Maatschappij (Dutch New Guinea Airline Co.).	KLM subsidiary founded after Indonesian independence to operate in Dutch New Guinea.
NNGPM	Nederlandsche Nieuw Guinee Petroleum Maatschappij (Dutch New Guinea Petroleum Co.).	Joint venture of BPM, NKPM, and NPPM formed in 1935 for exploration of Dutch New Guinea, BPM was managing partner.
NPPM	Nederlandsche Pacific Petroleum Maatschappij (Dutch Pacific Petroleum Co.).	Jointly owned by Standard Oil of California and Texaco, after independence became P.T. Caltex Pacific Indonesia.
SOL	Sarawak Oil Fields Ltd.	Royal Dutch/Shell subsidiary operating in Sarawak, after World War II headquartered in Seria, Brunei. Became Shell-Malaysia after 1963 with head office at Miri-Sarawak.
—	The Anglo-Saxon Petroleum Company, Ltd.	Transportation arm of Royal Dutch/Shell, founded after 1907 combination. Discovered Miri oil field (Sarawak) in 1910.
—	Asiatic Petroleum Company, Ltd.	Royal Dutch/Shell and Rothschild firm (latter eventually bought out), renamed the Shell Petroleum Company, Ltd. in 1946.
—	Asiatic Petroleum Corp.	U.S. subsidiary of Royal Dutch/Shell which handled most purchases in the U.S.
—	The "Shell" Transport and Trading Co.	British firm which became a partner in Royal Dutch/Shell in 1907.



Mallard JZ-POB (ex PK-AKG) at Sarmi airstrip 160 miles west of Hollandia, New Guinea, in 1958. Arrow points to nosewheel mired in mud following heavy rains at the grass airfield.
(H.C. Kavelaars)



Natives of Sarmi village assist modern aircraft JZ-POB in solution of age-old problem. NNGPM's pilot J.J. van der Plassche observes from cockpit.
(H.C. Kavelaars)

ROYAL DUTCH/SHELL AIRCRAFT 1946-1968

ITEM	TYPE	C/N	HISTORY
1	Piper L-4J	13620	Ex-USAAF 45-8880, registered 6-48 as PK-SAA for BPM—Batavia. Loaned to NEI Flying Club—Batavia, crashed 8-6-51.
2	Piper L-4J	13807	Ex-USAAF 45-5067, registered 10-47 as PK-SAC for BPM—Batavia. Loaned to NEI Flying Club. No further information.
3	Piper L-4J	13776	Ex-USAAF 45-5036, registered 1947 as PK-SAD for BPM—Batavia. Loaned to NEI Flying Club at S. Sumatra. Written off, date and circumstances unknown.
4	Piper L-4J	13782	Ex-USAAF 45-5042, registered 6-47 as PK-SAE for BPM—Batavia. Loaned to NEI Flying Club at S. Sumatra. No further information.
5	Piper L-4J	13768	Ex-USAAF 45-5028, registered 6-48 as PK-SAF for BPM—Balikpapan, E. Borneo. No further information.
6	Supermarine Sea Otter	?	Acquired mid-1949 for Sarawak Oilfields, Ltd., registered VR-SOL. Withdrawn from use 5-21-52. Exact identity unknown. It may be one of eight which were sold to the Dutch Navy in 1949 or a former British registered craft which was sold in Burma as XY-ABT in 1948. May have been VR-SDA at one time.
7	Percival P.50 Prince	P.50/3	Deliv. Shell Refining & Mktg. in London as G-ALJA after use by Percival as demonstrator. After evaluation sent to BMP in Borneo 7-50 as VR-SDB. Rereg. 3-55 as VR-UDB. Withdrawn from use 12-31-58. Scrapped?
8	Percival P.50 Prince	P.50/37	Delivered Shell Refining & Mktg. as G-AMKK. To BMP in Borneo as VR-SDR. Rereg. 3-55 as VR-UDR. Sold 8-30-68 as 9V-BBN.
9	Short SA-6 Sealand	SH1564	European demonstrator for Short as G-AKLO. Sold BMP early 1952 as VR-SDS. Reregistered 3-55 as VR-UDS. Scrapped 7-11-58.
10	Auster J/5B Autocar	2971	Purchased new for BMP. Delivered early 1953 as VR-SDO. Rereg. 3-55 as VR-UDO. Sold 1956 as VR-WAA, later VH-WBA.
11	Short SA-6 Sealand	SH1565	Demo. for Short as G-AKLP, for deliv. to BWIA as VP-TBA but unsatisfactory and returned U.K. as G-AKLP 1951 and stored. Sold to BMP mid-1954 and reg. VR-SDV. Reregistered 2-55 as VR-UDV. Scrapped 7-11-58.
12	Percival P.50 Prince	P.50/44	Del. Shell—London as G-AMLX and used as exec. plane. To BMP 2-55 as VR-UDA. Sold 10-14-68 as 9V-BBL.
13	Percival P.50 Prince	P.50/45	Del. to Shell affiliate in Venezuela as YV-P-AEC. To Shell—London as G-ALMY and transferred BMP 7-58 as VR-UDC. Sold 11-20-68 as 9V-BBM.
14	Grumman G-21A	1107	Purchased in USA in 1946 as NC69208 ex-USN JRF-4 Bu 03853. Reg. PK-AKA for BPM—Balikpapan. Withdrawn from use late 1950s, registration canceled 10-17-58. Believed sold to Indonesian military.
15	Grumman G-21A	1115	Purchased in USA about 1946 ex-USN JRF-5 Bu 06445. Reg. PK-AKB for BPM—Balikpapan. Withdrawn from use late 1950s, registration canceled 10-17-58. Believed sold to Indonesian military.
16	Consolidated PBV-5A Catalina	?	Purchased in Canada in 1946 (ex-CF-???) Ferried to Batavia 1-47 for BPM. Made "goodwill" tour 9-49. Crashed Bangka Island 12-2-49 while making glassy water landing, six killed. Registered PK-AKC.
17	Consolidated PBV-5A Catalina	?	Arrived from USA in 1947 for NNGPM—Morotai. Registered PK-AKR. Prob. ex-surplus as still had blisters. Overhauled 12-48 by KLM—Batavia and blisters removed. Used to fly employees Sorong—Ambon for Australian R & R. Flown to Hong Kong mid-1950 for overhaul. Crashed 8-28-50 on first test flight, two crew survived.
18	Consolidated PBV-5A Catalina	?	Purchased used in 1946 and delivered to NNGPM—Morotai in 1947 as PK-AKS. Withdrawn from use 8-12-49 and cannibalized for parts.



With nosewheel free, assistance is applied to the former PK-AKG's left float in order to free main wheel from rain-soaked grass. AKG became JZ-POB in 1955. The plane (c/n J13) was later sold in Australia and made its way back to the U.S. by way of New Zealand and Fiji. (H.C. Kavelaars)



Pilot J.J. van der Plassche makes a low pass in JZ-POB to thank residents for assistance in freeing the aircraft. (H.C. Kavelaars)

ROYAL DUTCH/SHELL AIRCRAFT 1946-1968

ITEM	TYPE	C/N	HISTORY
19	Consolidated PBY-5A <i>Catalina</i>	?	Arrived 1947 and registered PK-AKT for NNGPM—Morotai. Scrapped first quarter of 1954.
20	Consolidated PBY-5A <i>Catalina</i>	Bu 48383	Purchased by Asiatic Petroleum in the USA 10-16-53 from Southern California Aircraft Corp. (ex-N68768 and VP-KKJ. Registered in Holland as PH-TGP on 10-2-53 and ferried to New Guinea for NNGPM. Operated with PH marks until reregistered JZ-POA on 1-15-55. Disposed of by 1960, details not known.
21	Consolidated PBY-5A <i>Catalina</i>	Bu 48447	Purchased 1958 in USA ex-USCG and ferried to New Guinea for NNGPM with blisters. Registered JZ-POD, overhauled Hong Kong March 1959. No more info.
22	Douglas C-47A	19566	Ex-USAAF 43-15100/RAF TS435. Sold surplus as G-ALPM but marks not taken up. Sold to Pan African A/W 6-49 as ZS-BRX. Purchased by Shell and registered 12-51 as PK-AKF for BPM—Balikpapan. Damaged in air attack 4-17-58 and shipped to Hong Kong by sea for repairs. Returned to service but exact disposition not known. Later with Merpati Nusantara A/L as PK-NDB.
23	Douglas C-47A	12485	Ex-USAAF 42-92660/RAF KG450/KLM PH-TDU and PH-DAU. Purchased from KLM 5-58 and registered 6-58 as PK-AKT. For BPM. Exact disposition not known but later operated by Pelitta Air Service still as PK-AKT.
24	Douglas C-47A	12209	Ex-USAAF 42-92411/RAF FZ650/British Amer. Air Svc. reg 7-8-47 as G-AJRX/Malayan A/W del 8-47 as VR-SCN "Puna" later "Nightingale." Rereg VR-RCN and became Malaysian A/W. Rereg 9M-ALN. Purch. by Shell 3-9-59 for BPM—Jakarta and reg. PK-AKR. Disposal not certain but later with Pelitta A/S as PK-AKR.
25	Douglas C-47B	15422/ 26867	Ex-USAAF 43-49606/RAF KK176/Malayan A/W VR-SDH "Hawk." Purchased late 1959/early 1960 and registered PK-AKJ. No further information.
26	Grumman G-73 <i>Mallard</i>	J35	Ordered by Asiatic Petroleum 12-8-47. Grumman records delivery on 5-11-48 as PK-AKD (reg. assigned 3-48) but there is some evidence of an earlier U.S. registration (and possibly owner) as N2973 or N14824 by another source. Given the rather quick delivery after purchase, it is possible that the aircraft was ordered by a U.S. customer and later canceled. Ferried U.S.—Amsterdam about June 1948 and later on to Batavia where it arrived 7-8-48. Offered for sale in 1962 with 4310 hours after a similar offering in 1958 brought no response. Believed sold to Indonesian Police Force 11-9-63 as P2011. Sold in USA in 1977 as N22DF.
27	Grumman G-73 <i>Mallard</i>	J37	Delivered to Asiatic Petroleum 6-2-48 as PK-AKU. Ferried to East Indies via Amsterdam and arrived 7-8-48. Operated by NNGPM. Rereg. 1-15-55 as JZ-POC. Intended to be transferred back to BPM—Jakarta and reassigned PK-AKU due political considerations. Flown to Singapore 2-4-58 but BPM refused delivery due poor condition. Stored at Singapore and offered for sale but no takers. Dismantled and scrapped 1959.
28	Grumman G-73 <i>Mallard</i>	J41	Delivered to Asiatic Petroleum as PK-AKE on 12-22-48. Ferried to Amsterdam. Due political situation, ownership transferred to Shell Refining & Marketing and registered G-ALLJ on 3-5-49. Flown to Batavia and rereg. PK-AKE on 4-25-49. While undergoing maintenance at Jakarta 1-27-51 was washed down with gasoline. Caught fire and was damaged beyond repair.
29	Grumman G-73 <i>Mallard</i>	J13	Purchased used April 1951 by Asiatic Petroleum reportedly from Bendix Corp. (ex-N???). JZ-POA reserved for this aircraft but not taken up due political considerations. Registered PK-AKG but operated in New Guinea by NNGPM. Rereg. JZ-POB on 1-15-55 (POA and been reassigned). Reported leased to de Kroonduif 10-25-59 to 8-31-60. Believed abandoned at Biak 1960 to 1962. Sold 1962 to East Coast Airlines of Australia and ferried to Brisbane with wheels down. (See <i>Journal of AAHS</i> , Winter 1975, for complete history of this plane).
30	Grumman G-73 <i>Mallard</i>	J17	Purchased used from Bendix Asiatic Petroleum ex-N586. Date reported by Shell as Sept. 1951 but other sources range from 11-11-51 to 6-18-52. At this point had 2360 hours. Reg. PK-AKH 6-52 and ferried Batavia arriving 10-15-52. Flew special "money run" 6-56. Withdrawn from use about 1962 with 5623 hours. Believed sold Indonesian Police Force 11-9-63 (as P???). Reported destroyed beyond repair 5-18-70.



A fine shot of G-73 PK-AKH touching down in a classic step landing. Probably taken at Sanga-Sanga on the east coast of Borneo. (H.C. Kavelaars)



Goose PK-AKR, probably in the late 1930s or early 1940s. This plane (c/n 1010) was the tenth G-21 manufactured. It was later converted to a G-21A. It was delivered to Asiatic Petroleum in New York on Nov. 17, 1937, but its exact history is unknown, however, it is believed that it was registered in Australia as VH-AAZ either before or after its use by BPM. (Vliegwereld/Rodina Collection)



Hong Kong's hills in the background date this photo of *Mallard* PK-AKH at 1957 during its overhaul there. It is believed that the aircraft was sold to the Indonesian Police Force in 1963. (Kavelaars Collection)

REGISTRATION INDEX

NETHERLANDS EAST INDIES/INDONESIA

REGISTRATION	TYPE	CONSTRUCTOR'S NUMBER
PK-AER	Grumman G-21A	1009
PK-AES	Grumman G-21A	1008
PK-AKA (#1)	Grumman G-21A	1056
PK-AKA (#2)	Grumman G-21A	1107
PK-AKB (#1)	Grumman G-21A	1057
PK-AKB (#2)	Grumman G-21A	1115
PK-AKC (#1)	Grumman G-21A	(reserved, NTU)
PK-AKC (#2)	Consolidated PB5-5A	?
PK-AKD (#1)	Grumman G-21A	(reserved, NTU)
PK-AKD (#2)	Grumman G-73	J35
PK-AKE (#1)	Ford 5-AT-B	5-AT-42
PK-AKE (#2)	Grumman G-73	J41
PK-AKF	Douglas C-47A	19566
PK-AGG	Grumman G-73	J13
PK-AKH	Grumman G-73	J17
PK-AKJ	Douglas C-47B	15422/26867
PK-AKR (#1)	Grumman G-21A	1010
PK-AKR (#2)	Consolidated PB5-5A	?
PK-AKR (#3)	Douglas C-47A	12209
PK-AKS (#1)	Sikorsky S-38B	414-14
PK-AKS (#2)	Consolidated PB5-5A	?
PK-AKT (#1)	Sikorsky S-38B	314-12
PK-AKT (#2)	Consolidated PB5-5A	?
PK-AKT (#3)	Douglas C-47A	12485
PK-AKU (#1)	de Havilland DH-89A	6296
PK-AKU (#2)	Grumman G-73	J37
PK-AKV	de Havilland DH-89A	6292
PK-AKW	de Havilland DH-89A	6294
PK-SAA	Piper L-4J	13620
PK-SAC	Piper L-4J	13807
PK-SAD	Piper L-4J	13776
PK-SAE	Piper L-4J	13782
PK-SAF	Piper L-4J	13768

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JZ-POA	Consolidated PB5-5A	Bu 48383
JZ-POB	Grumman G-73	J13
JZ-POC	Grumman G-73	J37
JZ-POD	Consolidated PB5-5A	Bu 48447

(1) Piper L-4J PK-SAB (c/n ?) was registered but no details are known other than the fact that it was written off Oct. 1947 at Priok. Given the other registrations in that series, this plane may have been one with Shell involvement but thus far nothing is known about it.

(2) The pre-war Netherlands East Indies registrations had a pattern as follows: **PK**—Nationality, in this case NEI. **A**—Series letter. **K**—Kartering (Dutch) or photo survey (English). **x**—Individual aircraft identification. This system did not necessarily hold after World War II. Considerable reuse of registrations is evident from the above information.

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GEOGRAPHICAL REFERENCES

Aika—Base for amphibians in late 1930s. Located on southwest shore of Dutch New Guinea peninsula some 65 miles south of Carstens Mountains.

Andir—Military airfield and airport of Bandoeng, W. Java (100 km south of Batavia) at which several Royal Dutch/Shell aircraft were located at time of capitulation to Japanese in 1942. Technical base for KLM and KNILM aircraft 1928-1942.

Babo—NNGPM airstrip and headquarters at time of 1935-1938 surveys, located at east end of MacCluer Gulf south of the Vogelkop.

Batavia—Capital of the Netherlands East Indies, located on main island of Java. Renamed Jakarta after independence. Headquarters for BPM.

Balikpapan—Pre- and post-World War II settlement of Royal Dutch/Shell, located on eastern coast of Borneo.

Blak—Main KLM operations center in New Guinea after withdrawal from former NEI locations. A large island in Geelvink Bay north of Japan island.

Etna Bay—Amphibian base for S-38s in late 1930s. Due south of Geelvink Bay on southwest shore of New Guinea.

Jef Man—Coral island off northwest coast of Vogelkop. An airstrip at the time of the 1938 surveys. Became chief aircraft operating base for NNGPM after Indonesian independence. Located about six miles from Sorong.

Miri—First oil field discovered by Anglo-Saxon Petroleum Co. in North Sarawak about 1910. Headquarters before World War II.

Morotai—NNGPM's main aircraft base between end of World War II and Indonesian independence. A former Allied base with six runways about 150 miles northwest of Sorong.

Seria—Headquarters for British Malayan Petroleum in Brunei.

Seroei—Airstrip on Japen Island in Geelvink Bay for 1935-1938 surveys. Washed away by heavy rains soon after construction.

Vogelkop—"Birds Head" peninsula, the northwesternmost portion of the island of New Guinea.

ACKNOWLEDGEMENTS

As with most endeavors of this scope, it is impossible to claim the result as the efforts of a single individual or group. While the persons directly responsible for the assembly and organization of all the material into its final form are credited with the work's success or failure, there are always numerous others who contribute greatly to the quality of the research by providing what sometimes appears to be only a small piece of data which in reality provides a vital missing link to the other similar bits of information which together tell the story. To those who have assisted in such a manner, an all-encompassing "thank you" must be given. Special thanks must be extended to Shell at The Hague for access to their archives.

ABOUT THE AUTHOR

H.C. Kavelaars was born in December 1917 at Batavia, capital of former N.E. Indies, where he lived and worked for some 30 years, in the Far East altogether for nearly 33 years.

Having finished school by mid-1936 and first military service by mid-1937, he went to work in the oil business January 1938. Until June 1941 served in the exploration department of NPPM, NNGPM and STANVAC respectively as geological and gravimetric assistant, with jungle life on west Java, New Guinea, South Sumatra and Dutch Borneo. Resigned July 1941 to take up commercial job on Java.

Mobilized December 9, 1941, became Japanese POW with surrender of NEI Army on March 8, 1942. Was put to work early 1943 on construction of the notorious Siam-Burma "railroad of death" (as it is still called today in Thailand); from July 1944 to end of war in coal mine in Japan about halfway in between Hiroshima and Nagasaki. Liberated by U.S. Forces Sept. 1945, left Japan by way of Nagasaki on Sept. 20, via Okinawa to Manila for recuperation. In November-December 1945 at Balikpapan, east coast Borneo, re-equipped for military service on Celebes until mid-1947. Demobilized in Netherlands. Reentered Shell service January 1, 1948; worked subsequently in New Guinea for second time. Holland, Brunei, Sarawak and Bolivia. In that time geology had become a hobby (as well as profession), promoted to acting geologist August 1954, job classification equal to university graduate level. From Sept. 1958 until retirement December 31, 1972, in main office The Hague.

Interest in aviation came at age 13. Between 1931-1936 built balsa non-flying and flying models of the then-available Ideal kits. Solicited for Air Force pilot mid-1936 but disqualified in medical investigation of eyes, left one being slightly weak. Result: skipped aviation interests for more than 20 years, 1936-1958. Took up aviation hobby again 1959-1960. In 1961 commenced specializing on Schneider Trophy. As passenger in worldwide traveling flew in about 30 different aircraft types, from Gypsy Moth and Fokker F-7B in 1933/34 to the Jumbo jet, in a B-24 Liberator from Okinawa to Manila. He lives at: Dr. Wbautlaan 85, 2285XJ Rijswijk, The Netherlands.

Matt Rodina became interested in this subject through his research on the history of the Grumman Mallard. After the article on the Mallard appeared in the Fall 1975 issue of the *Journal*, Mr. Kavelaars contacted him and it is out of their correspondence over the years that this topic finally received the publication which it has long deserved.

In addition to the publication of two articles in the *Journal* concerning the Mallard, Mr. Rodina serves as Grumman Amphibian Specialist for Air-Britain and served as a contributing author on the same subjects for the *Grumman Guidebook* which was published in 1976.

While amphibious aircraft continue to be a subject of interest, Matt's current research includes work on the Douglas B-23, the development of commercial airborne weather radar, the Thunderstorm Project, and the use of aircraft for meteorological research. He lives at 6739 East 28th Street, Tulsa, Oklahoma 74129.

