



JAPANESE ELECTRAS AND GOONEYBIRDS



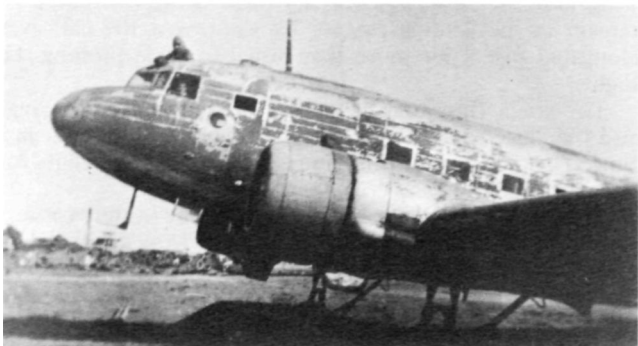
By RICHARD M. BUESCHEL



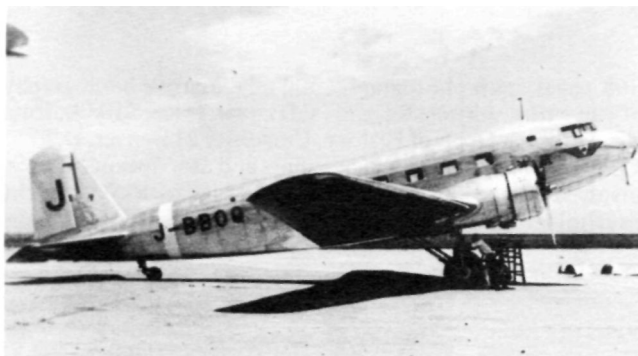
Lockheed Super Electra, sold to Japan in 1938, went to work for Japan Air Transport (JAT), the pre-war Japanese flag airline, as a passenger and cargo airplane on routes to China. (Photo — M. Toda)



In Japanese Pacific war service the license-produced Kawasaki Type LO (signifying Lockheed) served as the Army's leading paratroop transport, shown here in mottled camouflage. (Photo — Sora)



One of the few surviving civil DC-3 transports in Japan at the end of the Pacific War, showing the effects of hard use. (Photo — Holmes G. Anderson)



The Douglas DC-2 entered service with JAT in 1934. Nakajima licensed production began the same year, with the first of seven civil airplanes being completed in Jan. 1935. (Photo — M. Toda)

The first news picture to be released by the Japanese after the Doolittle Tokyo Raid in April 1942 was cleverly prepared to show that the Japanese were on their toes, and that the raiders were met by an effective defensive force. A so-called attacking B-25 Mitchell was plainly seen to be bracketed by puffs of anti-aircraft fire, its twin tails riding high. The problem was that knowledgeable spotters could quickly tell that the photograph was faked airplane shown wasn't a B-25 at all, but a big, full-tummied Lockheed 14 Super-Electra, one of the leading American transports of the late 1930's. The Japanese propaganda mill doubled the error by not only showing the wrong airplane, but also by showing a type that clearly revealed Japan's reliance on American transport technology.

It was not strange to see a Lockheed flying over Tokyo early in the Pacific War. The Japanese Army Air Force had hundreds of them, and they were used by Japan Air Transport (JAT, the Japanese national airline) on express runs to occupied China, widely advertised as high-speed cargo transports. The Japanese Navy had a few, though the Navy preferred the American Douglas DC-3, the most widely used transport type in the world in the late 1930's and early 1940's. Only in areas outside of the Japanese home islands where Japan was obviously judged by its flag line equipment, such as in the Southwest Pacific and in Thailand, were American transports excluded from service.

Why were American transports used when Japan had such a highly developed aircraft industry of its own? The American network of airlines had provided the best civil aircraft testing ground and, in the 1930's as well as later, Japan was a good customer and committed herself deeply with two of the major American transport producers, Lockheed and Douglas.

The Japanese neglected transport development from the very early days of their domestic aircraft industry, preferring to concentrate on military combat types. As a result, the Japanese airlines retained obsolete Fokker VII 3/M and Fokker Super-Universal transports several years longer than the rest of the world. Nakajima produced the Super-Universal under American license, and when production phased out in 1934, the firm paid well for the license to produce the advanced American Douglas DC-2 transport. While this move helped the national airline, did not at once increase Japanese military transport capability. Both the Army and Navy virtually ignored the DC-2 as a transport, but both became concerned over the military bomber possibilities provided by the modern low-wing twin-engined type. The newly acquired Douglas techniques were applied to a series of Army and Navy bomber projects. An Army transport based on the DC-2 was projected under a secret Japanese Army Air Force (JAAF) designation Ki.16, but did not progress far. Later a Nakajima AT-2 civil transport appeared in both Army Ki.34 and Navy L1N1 models. The AT-2 was a scaled-down version of the DC-2 design and was produced for civil airline use in 1937.

Mitsubishi began work on a civil airliner, creating a clean-looking MC-20 based on a then current Ki.21 bomber built for the JAAF. The Mitsubishi Ki.21 Type 97 Heavy Bomber was based to some degree on the DC-2 concept and the net effect was a Japanese transport type of modest proportions, but hardly enough to keep up with growing military demands.

Then came the very real threat of war with Russia, late

A.A.H.S. JOURNAL



Pre-WW2 civil DC-3 in Japanese colors. The first DC-3's arrived for JAT in 1938. Almost a hundred American and Japanese-produced examples were in wartime civil transport use in Japan and occupied

in 1937 over the Manchoukuoan borders, and Japan faced the prospect of rapid, long-range troop movements - with no aerial transport. Involvement in China had also shown up the military transport weakness. Industrialized Japan found it desirable to turn east and bought Lockheed 14s and Douglas DC-3s for airline use, at the same time negotiating contracts with both U.S. firms for the license to produce. Kawasaki obtained the Lockheed license; Nakajima acquired the Douglas license having already been the licensed DC-2 producer. The agreements were broad, and Douglas and Lockheed engineers went to Japan to set up the necessary new plant facilities and supervise manufacture.

In 1938, as anti-Japanese public opinion in the United States became aroused. Congress imposed an embargo on the sale of military aircraft to Japan. There were Washington recommendations that the new agreements be terminated, but there were also loopholes in the Embargo Act allowing manufacturers the right to export engines, propellers and parts as "replacements on commercial airliners in Japan" and business continued in spite of loud complaints of the Chinese Nationalist government in Chungking. The engineers from Douglas and Lockheed, and three from Wright, remained in Japan to teach line-production methods under the original license agreements granted prior to June 1938, the Embargo cut-off month. This saved the Japanese aircraft industry months of development time and both types remained in Japanese service throughout the Pacific War as the standard military transports. The various models were changed as the Japanese



A former civil DC-3 of China Airways Company, the flag airline of Japanese occupied China, registered C-501, captured by Chinese Nationalists and photographed at West Airfield at Peiping early in

SPRING - 1970



China. (Photo - M. Toda) At right, a Nakajima-built Douglas DC-3 of Japan Air Transport ready to board passengers, January, 1941. Nakajima built seventy-one. (Photo - Koku Asahi)

modified them to meet new demands and to match their raw material availabilities, but on the surface at least they resembled their Early American parents.

The JAAF retained a preference for the Lockheed 14, and used over a hundred virtually unmodified, license-built airplanes produced by both Kawasaki and Tachikawa as the Army Type LO, the type letters signifying Lockheed. Later the basic design was "stretched" for the larger Kawasaki Ki.56. This made the Japanese model almost conform to the American Lockheed 18 Lodestar which had been lengthened in the same manner. Comparative weights were 17,695 pounds (Ki.56) to 18,500 pounds (Lodestar), loaded. Plans were proposed late in the Pacific War to produce the Ki.56 in wood, utilizing a variety of existing engines which would have given each model a performance rating unique to itself.

The Japanese Navy Air Force (JNAF) carried its development of the Douglas DC-3 series further as did Douglas in the U.S. Known in the JNAF as the L2D series, Nakajima and Showa produced model variations for cargo, para troop and personnel transport duties. At the end of the war prototypes of an L2D5 model were under construction. When occupation forces arrived in Japan in September 1945, they found several camouflaged, and wrecked, L2D5's outside of the assembly hangar - yet the wreckage looked different. Inside the hangar they found unpainted fuselage assemblies, and discovered them to be made of wood. A glue shortage and lack of large woodworking machinery kept them from putting a wooden DC-3 into service.



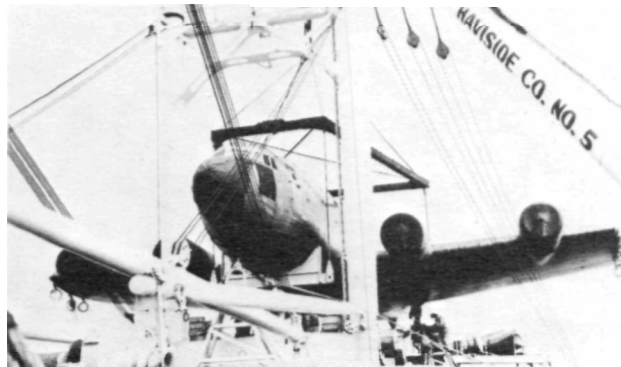
1946. (Photo — David C. Lucabaugh) At right, a Douglas-built DC-3 taken over by JNAF in 1939, redesignated naval L2D1 Type D Experimental Transport. (Photo — Courtesy of M. Sora)

The Japanese use of familiar American transport types led to wartime identification problems. The Allied forces made little use of the Lockheed transports in the Pacific area, though the Chinese had some Hudsons. The major recognition problem came from the JNAF L2Ds for they differed only slightly from American C-47/R4D types, at a distance.

At the time of the 1938 Embargo, the Japanese barely eased through the restrictions with their request to purchase the second prototype Douglas DC-4E, including all of the tooling, fixtures and engineering assistance. The DC-4 had then received a large publicity build-up, a promised advancement in air travel fully as exciting and concept-changing as the coming Jetliners, Jumbo Jets and SST transports some years hence. When the sale to Japan was approved, the whole agreement virtually went under wraps. When the time came to ship the airplane to Japan it was difficult to find reference to the event in the press. The prototype DC-4E was dismantled, packed and shipped to Japan on a Japanese freighter with a minimum of fanfare.

According to the sale agreement, its next use was to be as a JAT civil airliner. When the big transport arrived and was assembled in Japan, JAT kept up appearances and gave demonstration flights to airline representatives and influential Japanese businessmen. The real buyer, the Japanese Navy, waited on the sidelines until delivery could be made without incident. JNAF proceeded with development into the Nakajima G5N1 and G5N2 series of "Liz" heavy bombers.

It may be conjectured that, had the Japanese stuck to the transport use of the DC-4E and its tooling to create their own equivalent of the Douglas C-54 Skymaster - the Pacific area would have been a hopeless recognition mess. It would have been hard to tell which transports were U.S. or Japanese. Depending on how one looks at it, in a way they were all American.



William T. Larkins and Art Geen talked their way aboard a Japanese freighter in San Francisco Bay in late 1939 to obtain the only known photographs of the Douglas DC-4E on its way to Japan.



The military DC-3 entered production at Showa in 1940 in a Douglas-type factory facility almost completely imported from America. This is the L2D3 Type O Transport version "Tabby" with top gun position. Fliptop nose stowed cargo. An estimated 490 Tabby's were built between 1940 and war's end. (Photo — Hideya Ando)



"Liz" at Atsugi Air Base 5 Sept. 1945. This Nakajima G5N2 Shenzan Heavy Land Attack Plane had the Douglas DC-4E influence. (Photo - USAF) Japanese Tabby or an American Gooneybird? With rounded



engine cowlings and extra pilot windows, it is a captured Japanese L2D2 in U.S. insignia marked for flight testing by SW Pacific Technical Air Intelligence group. (Photo — Peter M. Bowers)

The "stretched" Type LO, the Kawasaki Ki.56 Type 1 Cargo Transport, standard Army Transport of the Pacific War. 119 were built. (Photo — Hiko Shonen)



EDITOR'S NOTE: Richard M. Bueschel joined A.A.H.S. in 1956, has been a longtime student of Japanese and Eastern aviation, is author of the current *Communist Chinese Air Power*, New York: Frederick A. Praeger, 1968.