

German, Italian War Planes Hold Records

Bomber Is Pride of Il Duce's Royal Air Squadrons

By WAYNE THOMIS

TWO NEW military airplanes—one said to be the best bomber and the other the best pursuit ship yet flown in Europe—are depicted in the photographs reproduced on this page. The bomber is the pride of the Royal Italian Air corps, while the single-seat fighter is the latest type of machine adopted by the German air corps.

Both machines hold world records for their classes. The bomber recently set new speed records for airplanes carrying loads of 500, 1,000, and 2,000 kilograms over a 1,000-kilometer course (625 miles). The fighter less than a month ago made a new land plane speed record by flying 379 miles an hour over a measured 3-kilometer course. The quality of the two machines is therefore obvious.

The Italian plane is the famous Savoia-Marchetti S-79 low-wing monoplane type with three radial geared motors. The squadron of these planes shown in the upper photograph was bound on a bombing mission in Spain, where they are being used by Italian troops serving with General Franco and the rebels. The picture, one of the photographic scoops of the war, was obtained from the personal photographic files of a flying officer serving with this Spanish-Italian unit.

Word from Spain is that the regular Italian crews for the ships and the planes themselves were lent to General Franco by Premier Mussolini, whose own son, Bruno, a flying lieutenant, also served with this bombardment group, for two reasons—first of all, they are aiding the Spanish rebels; and, second, the machines are being service tested and the pilots are obtaining valuable war-time flight experience.

This machine is of metal, wood, and fabric, with retractile landing gear and tail wheel. The wings are 70.6 feet in span and the fuselage is 53 feet long. It stands 13 feet 4 inches high. In its military form it has a disposable load of 8,150 pounds, a maximum speed of 270 miles an hour, and a landing speed of 68 miles an hour. The ceiling is 26,240 feet.

A report from the international air show at Milan, Italy, last October stated that the plane was built of steel tubing, with metal sheathing for the fuselage and a plywood covering for the wings. Presumably the wing spars and ribs are metal, but there is no official information on this point.

The control surfaces, ailerons, elevators, and rudder are fabric covered, as is the extreme after portion of the tail. The wing apparently was built in one huge section, with the fuselage resting on top of it, for the under surface was not bulged. The sides of the fuselage are flat, with the top given an airfoil curve behind the nose motor, over the pilot's windshield, and down to the tail with its single vertical fin and rudder.

The entire leading edge of the wing from the outboard motors to the tips was fitted with slots to prevent stalling at slow speeds, and trailing-edge flaps also are carried to slow down the machine to a practical speed for landings. The show report said that the slots were so carefully made and fitted that only careful examination of the wing surface disclosed them when they were locked home.

The motors for the military plane are said to be Piaggio engines, manufactured in Genoa. These are nine-cylinder radials which turn controllable-pitch air screws. The Piaggio PXI RC 40, standard engine for the military version of the S-79, develops 1,000 horsepower for takeoff and 920 horsepower up to 10,000 feet.

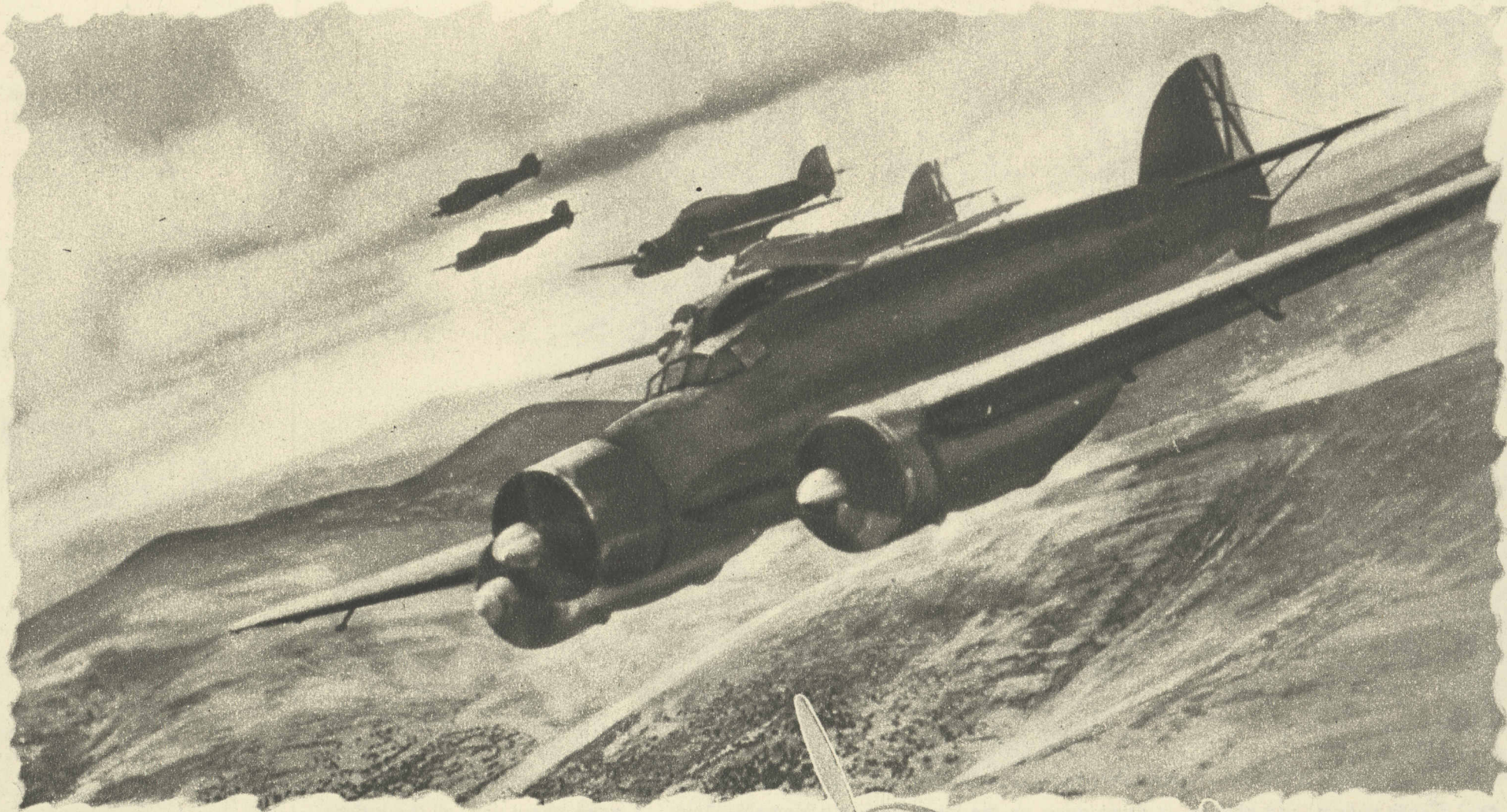
On last Nov. 21 Col. Attilio Biseo, one of the key pilots in Gen. Italo Balbo's trans-Atlantic flights, and Lieutenant Mussolini, accompanied by two mechanics, made the third set of international speed records for load and distance set by this type of plane in the last two

years. They achieved an average speed of 430.622 kilometers an hour, or 263 miles an hour, for the 625 miles of a quadrangular course.

The previous record had been 257 miles an hour, made by Colonel Biseo and young Mussolini. On that occasion slightly less powerful engines had been fitted to the ship and the propellers had been arranged for slightly different settings than on the new record flight. The first record, made nearly eighteen months earlier, had been 252 miles an hour.

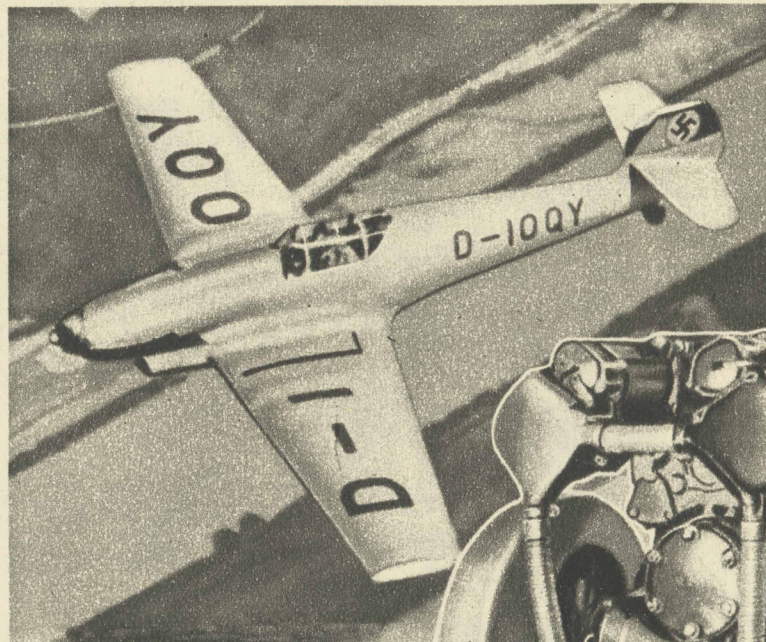
The most notable victory for Italian aviation—placing of machines in first, second, and third places in the hotly contested international Istres-Damascus-Paris race, which was held after the proposed New York-Paris trans-Atlantic race was banned—was also a victory for the Savoia-Marchetti S-79 type. All three of the Italian planes were S-79s.

Premier Mussolini has publicly boasted that with squadrons of these bombers in his air force



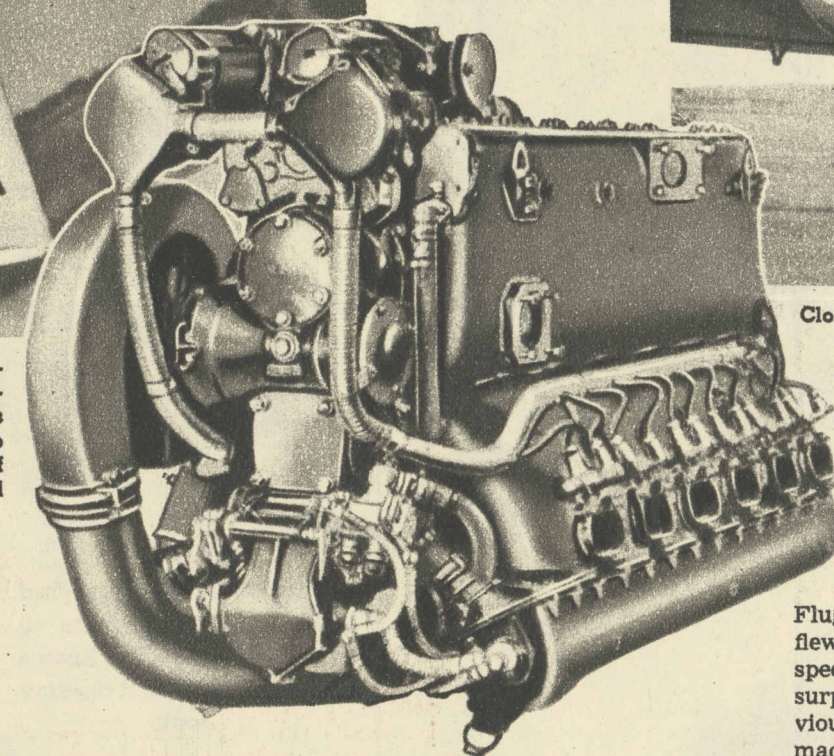
(Acme photo.)
A squadron of Savoia-Marchetti S-79 machines with General Franco's forces in Spain. Italy has at least four squadrons of 36 such planes.

Below: The Mercedes-Benz liquid-cooled engine used in the Messerschmitt racer.



The Messerschmitt Bf 109 fighter, photographed during the Zurich, Switzerland, flying meet last summer. This is the only photograph of the machine to come out of Germany since one of these planes set the new world's land plane speed record.

the entire length and breadth of the Mediterranean sea is under his control. It was fear of attacks by bombers of the S-79 type that caused the British to order their battle fleet out of the Mediterranean during the English-Italian crisis a year ago.



Close-up of the nose and engines of the S-79 bomber. Note that the engines are hung beneath the wings rather than being placed in midwing nacelles, as is American practice.

The German plane is the Messerschmitt Bf 109, which has been ordered in large quantities for the German Luftwaffe or air corps. On last Nov. 11 a Dr. Wurster, chief test pilot for the Bayerische Flugzeugwerke at Augsburg, flew one of these planes at a speed of 379 miles an hour, thus surpassing Howard Hughes' previous record of 352 miles an hour made in his special racing plane.

The Messerschmitt is a low-wing monoplane with retractile landing gear and a transparent glass or glass substitute covering over the tiny cockpit. It is built entirely of metal, both wing spars and ribs and the fuselage frames, and is covered with metal sheets. The wings taper in width and thickness to strangely blunt tips.

The wings span 35 feet and the fuselage is about 28 feet in length. The standard air corps

versions of this plane have a top speed of 335 miles an hour and a landing speed of 58 miles an hour. This slow landing speed is achieved with slots along the leading edges of the wings and a wide flap which extends from the fuselage out to the ailerons on each wing.

Nothing is known about the weight of the plane, its range, wing loadings, or other similar data. But the all-around performance was shown to be very high when a squadron of three of these ships won the pursuit trophies at the international flight meeting at Zurich, Switzerland, last summer while competing against French, Belgian, Italian, and Rumanian military pilots.

The standard version of this fighter should have the supercharged Mercedes-Benz DB600 inverted V type twelve-cylinder liquid-cooled engine. This motor is built by the famous Daimler-Benz factory of Stuttgart-Unterturkheim and is one of the newest electric-ignition engines in Germany.

It develops 1,000 horsepower for takeoff and 910 horsepower at 13,130 feet at full throttle. The coolant is supposed to be ethyl-glycol or some variation of an anti-freeze solution used by American motorists. At any rate the radiator for this engine is very small and some other liquid than water is necessary to cool the cylinders.

According to dispatches from England, the record-breaking flight was made by opening the highly supercharged motor to its full throttle capacity on the ground. From what is known of the machine, the motor must have been developing at least 1,900 horsepower for the record flight. Undoubtedly specially doped fuels were used, as is the practice in racing.

The new Daimler-Benz motor has a piston displacement of 1,886 cubic inches, slightly more than the new Pratt & Whitney twin Hornet engine, which has 1,830 cubic inches displacement and develops 1,400 horsepower for takeoff.

The Skeleton That Saved a Throne

TRAVANCORE, one of the largest and most important native states of India, has just celebrated one of the oddest centennials in the world—the one-hundredth anniversary of a \$75,000 skeleton that saved a throne.

It all dates back to the ascension of Martanda Varma to the throne of his ancestors as maharajah of the southern state. The young king had been brought up as a Brahman, the priestly caste, but under the influence of the court surgeon became intensely interested in anatomy.

To further his study the learned doctor used a human skeleton. Word of this got out to the populace and the Brahmans protested. The maharajah, steward of God, should not defile his body by touching bones, they said.

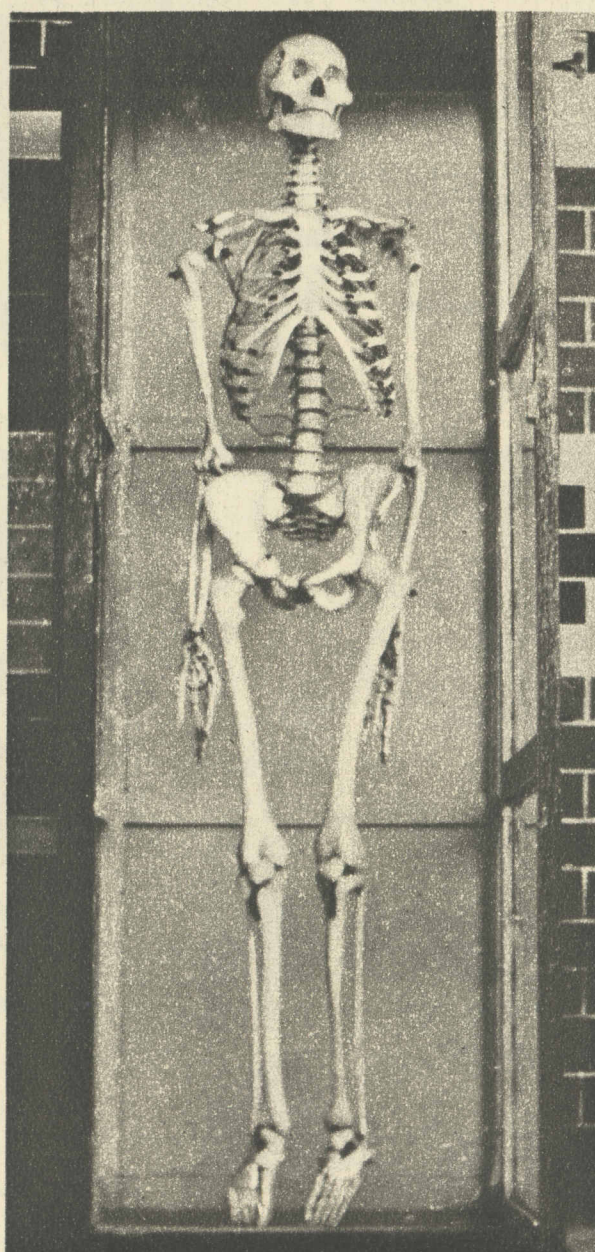
The king persisted, however, and shortly there came a day when the priests and many followers crowded toward the palace, threatening

a revolution. They were halted by an old craftsman who asked his sovereign to postpone his studies for three months, when he would have ready an ivory duplicate of the hated skeleton.

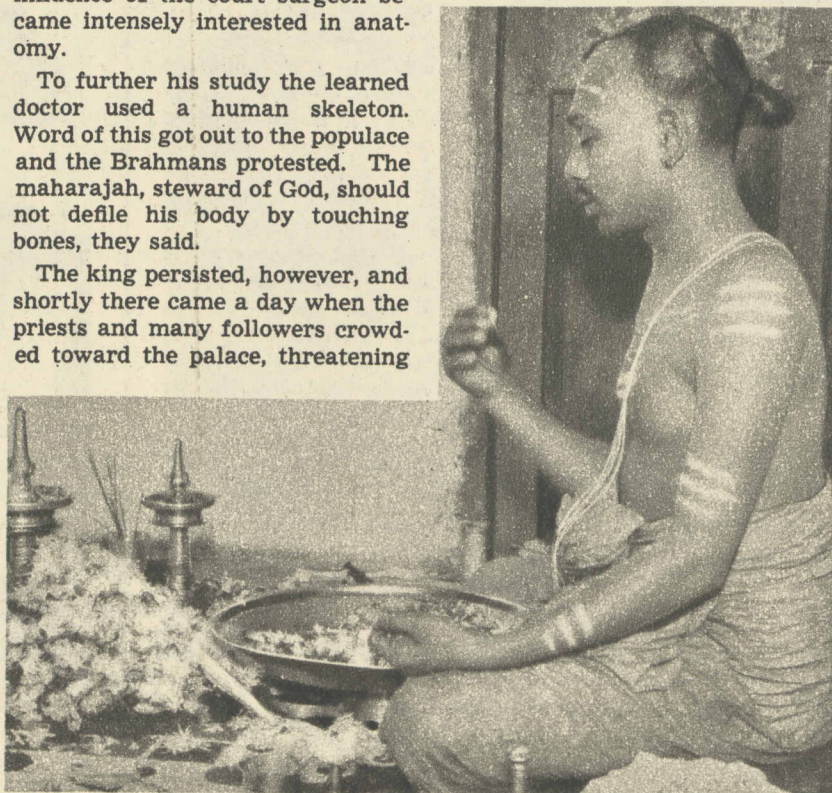
In six months, three months later, the ivory masterpiece was presented to the king, and praised by the surgeon as exact in every minute detail. The unusual piece of "art" cost the king \$25,000 (equal in value now to \$75,000), but it saved his

throne for himself and the descendants who have ruled since.

Now every year the skeleton is removed from its vault, reverently dusted off, and bedecked with garlands.



(Photo from Tribune London Bureau.)
The skeleton that saved the throne of Travancore.



A Brahman during a religious ceremony.



Maharani Sethu Lakshmi Bai, regent of Travancore. Her reign over the native state has been progressive, and women have equal rights with men.