

Messerschmitt Regensburg Plant History – from ME109 to KR175

Regensburg has a long history and was an important centre in Roman times – as *Castra Regina* it had been a major Roman provincial capital and base of the Third Legion. For 2000 years it has been a centre of civilisation and culture becoming the first capital of Bavaria after the collapse of Roman rule and the most important city in Southern Germany. In 1936, huge areas of open farmland adjacent to the local racecourse were bought from the Prince of Thurn und Taxis. A model factory estate was built with multi-storey office block, wide roads, and dispersed workshops separated from each other by lawns and trees. Apprenticeships at the new plant were much sought after by the boys of Regensburg and the surrounding villages and these went on to form the nucleus of the post-war car and engineering factory. Facilities were among the best in Germany with canteens, showers, changing rooms, social clubs, sports fields and a swimming pool.

Regensburg Messerschmitt factory in World War 2

No history of Messerschmitt cars can be considered complete without a look back at the Regensburg factory in wartime. Located in the far South-East of Germany, close to the Czech border, it was thought to be out of range of any significant air attack and thus became the largest and most important aircraft plant in Germany. From 1936 to 1938 the Messerschmitt Aircraft factory was developed as a daughter facility to Messerschmitt A.G. in Augsburg that still exists today as a division of Airbus Industrie. The Regensburg plant built the commercial aircraft widely known as the “Taifun” (or ME108) under the direction of Company chief Prof. Ing. Willi Messerschmitt. Under an agreement with the German Air Ministry, Willy Messerschmitt bought all the shares in the new Regensburg plant. When the Second World War came the ME109 fighter plane and later the jet powered ME262 were built in Regensburg. *Messerschmitt ME109 aircraft stand outside Regensburg plant during World War 2 (MFGB archive).*



By 1943, ME109 production had reached an astonishing 480 per month thus threatening any possible allied invasion of the European mainland. On 17th August 1943 a devastating raid was launched by the American 8th Airforce using, for the first time, onward flight to recently captured airfields in North Africa. Although defences were in place, Flak gun controllers believed the aircraft were friendly Heinkels so did not engage the B17s until it was too late. Norden bomb-sights were very accurate and effective on bright sunny days so large parts of the factory were severely damaged. Many workers did not reach the shelters and there was heavy loss of life, particularly among French and Belgian forced labour engaged at the factory. Historians have long pondered the effectiveness of this first raid since production was restored within weeks. However, valuable jigs for the revolutionary ME262 jet fighter were destroyed thus delaying the project that could have changed the outcome of the air war. could have changed the outcome of the air war.

Photo below: Production hall 3 at the end of World War 2 (photo MFGB archive)



When the war ended, the plant was placed under allied control with removal of all usable equipment and machinery together with remaining materials both sold and stolen from the site. In 1946 the Trustees sought without success to make the remaining assets available for industrial use. Then in 1950, the Company that was formed in 1947 was supported by the Allied administration in restoring their rights to take back the site under the name of “Regensburger Stahlund Metallbau GmbH” but it remained known as Messerschmitt-Werk, that was its former aircraft factory title. In 1951 the factory took over production of the small three wheeled vehicles for amputees that were developed by Fritz Fend and Willi Messerschmitt that ultimately revolutionised micro-car manufacturing. Full scale manufacturing of the new Messerschmitt KR175 was implemented at Regensburg at the end of 1952. Utilising all the resources and skills of the existing workforce together with new recruits, the devastated framework of the only remaining production hall 3 of the former aircraft plant was partly rebuilt. Within one year the workforce had doubled from 400 to 850

but this must be compared to the wartime workforce of over 18,000 employees. Unemployment was thus very high placing a great burden on the city of Regensburg. Over 26,000 square metres was fully rebuilt on the totally destroyed site that was originally 127,000 square metres. Launched to worldwide acclaim, the new KR175 was an immediate success that led to the full reconstruction of the former 4,000 sq.m aircraft production hall 3 with adjacent areas also available for future development. Local sub assembly work was supported by components manufactured by the Augsburg Messerschmitt plant that were brought together for assembly on the Regensburg production line. Meticulous quality control of the various components and final inspection ensured that each KR175 left the factory in good working order. With their own direct rail connection into the plant area, rail wagons could be loaded for distribution within Germany and to export destinations. Despite the significant capacity of the Regensburg plant, two further licensed production operations were quickly prepared. One of them was to become the Italian “Mivalino”



*Photo left:
1959 MOC
trip to
Regensburg
pictured
outside the
service
department.
MOC
members
were treated
to a plant
tour and
much
hospitality
from the
town. All the
cars were
given a full
service and
one had a
new rear
engine cover
fitted.
Photo:MFGB
archive*

Regensburg today



Fortunately, Regensburg was spared the area bombing that affected most other large German cities and is possibly the only fully preserved medieval city in Germany with a magnificent cathedral and ancient bridge over the Danube. Attractive countryside surrounds the city making it well worth a visit. Very little remains of the site but Lillienthalstrasse remains as a mostly residential area. BMW has built a huge manufacturing plant producing models 1, 3, M3 & Z4 where the main aircraft plant was.

From KR175 to KR200 – A history of RSM from 1955 and FMR from 1957

Analysis of the new production line in 1955

Post-war demand for reasonably priced covered transport was very high and the KR175, from introduction in 1953, had achieved great acclaim to fulfil this need. When the performance of the new KR200 introduced in 1955 is considered, the connection to the aircraft heritage of Messerschmitt is clear and the introduction of a new model was a brave step. The new KR200 filled the gap between scooters or motorcycles and the many small car manufacturers around at that time.

New innovations for the revolutionary KR200 model launch

In developing the new model, the many deficiencies of the KR175 were to be addressed but that took much time and a lot of thought. Some of the KR200 designs were quite revolutionary at the time and that applied particularly to the rubber-in-torsion suspension units that would deliver class leading performance and handling. Vibration was a huge problem for the motorcycles, scooters, and micro-cars of the day where other manufacturers had stuck to those technologies as used on the KR175 where the motor was part of the rear drive unit. An elegant solution was developed for the KR200 with the motor free to move in every direction on 3 rubber mountings using a cardan shaft to transmit drive to the rear chain drive enclosure. This toothed drive coupling allows movement of the motor in every direction while transmitting the drive further reducing the transmission of vibration to the vehicle frame. Participation in sporting events had proven the KR175 to be a robust design capable of long distances with high speeds but the revolutionary KR200 was to exceed these already high performance capabilities. Under the direction of H.W. Boensch, the specially developed KR200 Super went on to break many speed and endurance records, many of which, still stand to this day.

Augsburg design office

A technical press review of the manufacturing operation reported in 1955 that the design team headed by Prof. Willy Messerschmitt were the originators of many of the innovations found in the new KR200. Regensburg factory contacts have since reported that this caused much resentment when Augsburg ideas were imposed on them. However, with Prof. Messerschmitt as Chairman of the RSM Board of Directors, there was little they could do to argue against it. With a large design team and fully equipped drawing office, Augsburg was forbidden at that time from developing aircraft designs so it was perhaps not unreasonable to use that resource.

Innovative Manufacturing technologies

Looking back at the wartime productivity achievements of the Regensburg Messerschmitt plant it is not surprising the workforce adapted quickly to new manufacturing techniques. A bomb damaged framework was all that was left of Production hall 3, the only building recognisable on the devastated site of the once huge aircraft factory. By 1955, much of that damage had been repaired with new equipment starting at the incoming raw materials area through to the final test and finished vehicle storage area. Cost reduction is a familiar theme from manufacturing today but it was a key part of the Regensburg operation that was essential to achieve a competitive sales price for the KR200. Thus many labour saving innovations were introduced starting at the sheet metal cutting shop with bending and forming equipment progressing to the welding shop where new spot welding techniques were employed. Precision jigs and clamping methods were used to achieve the necessary close tolerances with drawings showing the process steps for each assembly - all contributing to a basic bodyshell of significant rigidity that is essential for good roadholding.

Painting and preparation

RSM Messerschmitt Werk invested in a new Infra-Red paint baking oven that improved the surface finish, reduced the risk of dust or damage, and speeded up the drying process. A chain conveyor ran through the oven heating area that could take quite large components such as the nose assembly. Batch production was used for the many different components that make the complete car.

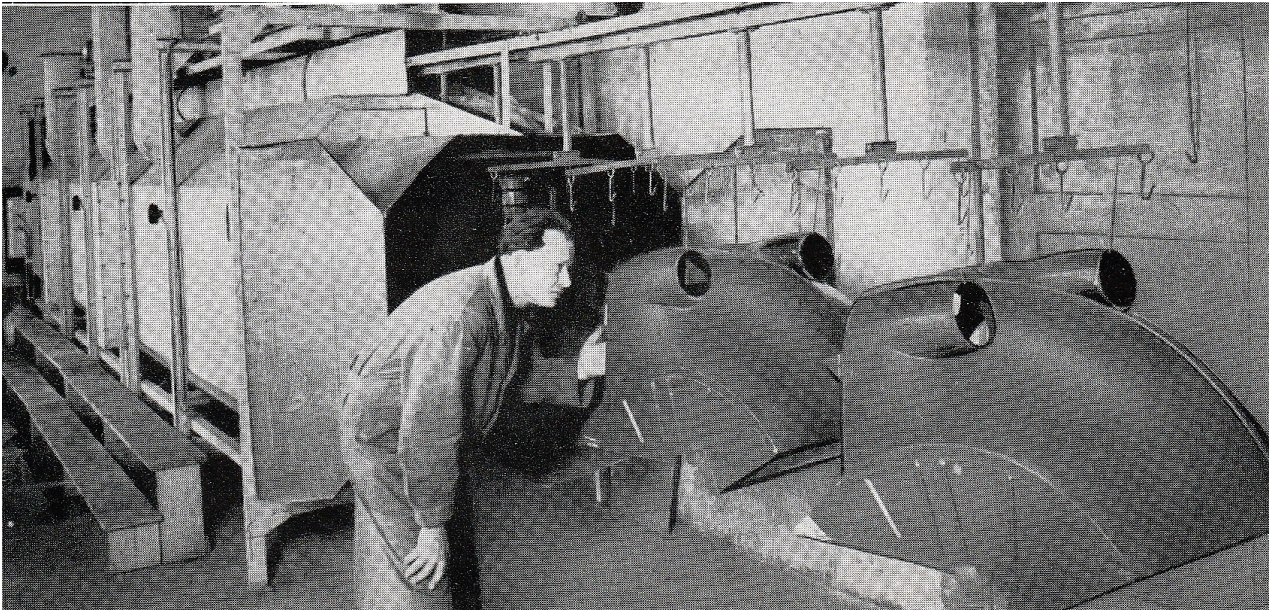


Photo from 1955 shows infra-red oven with chain conveyor for painted body parts.



Assembly line – sequence as follows:-

Fit wiring, control cables, and foot pedals

Fit front suspension, track rods and steering bar

Fit engine frame and rear suspension

Fit engine (2 man lift)

Fit nose assembly (already wired with lights fitted)

Fit wheels, rear engine cover, trim, and bumper

Fit lifting section and windscreen

Fit aluminium frame and dome.

Restorers take note: This sequence is the most efficient way to build the car after restoration of body parts.

1955 photo assembly line

Sub-assembly areas

Front and Rear suspension units were assembled with hubs, brakes, and other components. Control pedals, lifting section, and rear engine cover with fuel tank were prepared adjacent to the main assembly line.

Assembly line conveyor system

Initially, the cars were built on wooden pallets that were placed on a chain conveyor (see photo). On completion, a fork lift truck lifted each car on its pallet and the conveyor could then be moved forward using the start/stop motor control located on the end of the conveyor. That had the disadvantage that assembly workers would have to stand clear for the movement operation so it was eventually changed to a system of hand-pushed assembly carts that could be easily moved to the next work station.



Photo: 1955 end of production chain conveyor production line – compare to the later FMR photo

At each stage, rigorous quality control inspection made sure everything was completed to a high standard. Maintaining desirability through quality, finish, and durability ensured high re-sale values that were rightly seen as the path to future sales.

Final inspection and testing.

With static inspections completed, the car was lifted off and pushed to the test area. Once again, RSM was leading the field in small car manufacture with investment in a fully functioning rolling road test facility. All three wheels were placed on rollers with front wheels driven by an electric motor thus enabling initial adjustment and balancing of the brakes. Motor power was tested and those who have seen the process commented that running in cautions seemed to be ignored as full acceleration was tested through each gear. Later testing for export markets demanded that the fuel

tank remained completely empty and a remote fuel supply was provided that could be disconnected on completion of quality acceptance tests. If the car passed this rigorous inspection regime, then it would be lifted off the rollers for transfer to the despatch area.

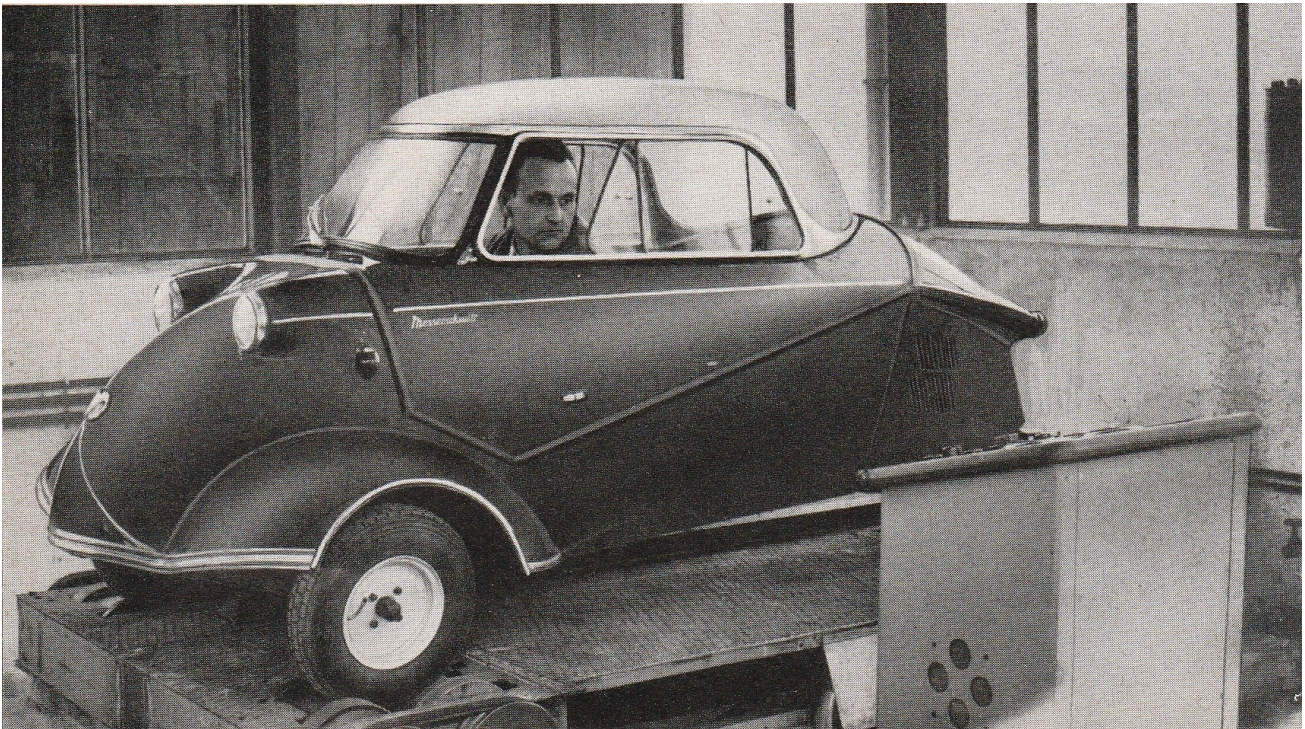


Photo: Car under test – front wheels on rollers to adjust brakes. Rear wheel roller for power test.

Sales and production numbers

In 1955, the factory employed almost 900 people including administrative staff and management. It was planned to increase the headcount to 1500 with a view to achieving a monthly production output of 2000 Messerschmitts. Exports were already important for the KR175 output so much so that licensed manufacture was developed for Spain and Italy. Only the Italian 'Mivalino' version of the KR175 was produced in any quantity and that was short lived. Initial exports to the USA were well received but many were fitted with ugly 'towel rack' bumpers by the import dealership to help them cope with the huge bumpers that were then fashionable on American cars.

1953 sales	KR175	1,552
1954 sales	KR175	8,644
1955 sales	KR175	2,623
	KR200	9,286
1956 sales	KR175	400
	KR200	3,745

After record production in 1955, sales figures for 1956 forced a crisis with RSM facing strong competition from other micro-cars and new production of conventional cars. Although the KR200 was a clear leader in terms of performance and running costs, rivals offered conventional side-by-side seating that was favoured by the market. Compared with the Isetta and Goggo, both with larger motors and higher fuel consumption, the Messerschmitt offered an almost sports car like performance with top speed, acceleration, and cornering ability able to match most common cars of the day.

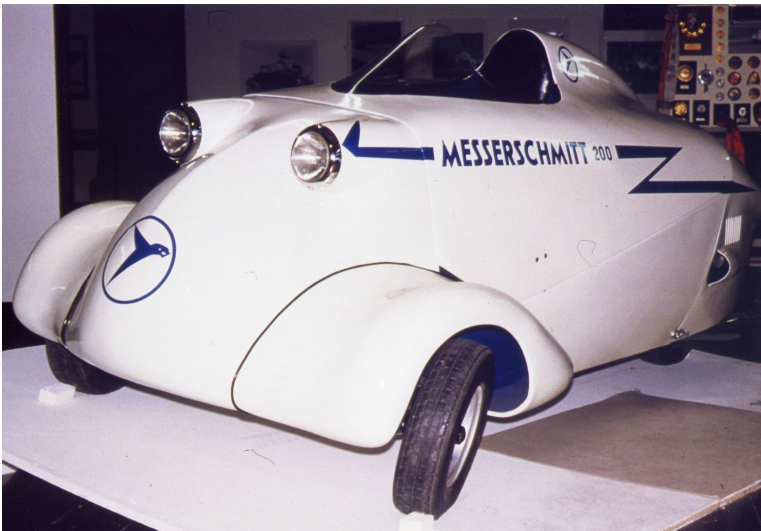


Photo: Record breaker (now in Deutsches Museum)

Aircraft technology set the Messerschmitt apart from the others with innovative aerodynamics that could only be achieved by tandem seating. It was proven that the Messerschmitt was faster than a motorcycle with the same engine and that was entirely due to the exceptionally low drag coefficient – since confirmed in wind tunnel tests to be better than almost any other car of the era. In 1955, a streamlined KR200 achieved multiple world records for speed and endurance some of which stand to this day.

New Model ME201 Roadster

On 21st October 1956 the third IFMA international bicycle and motorcycle show in Frankfurt opened their doors for eight days. Motor Compagnie, a local firm under the direction of Franz A. Guilleaume was responsible for the show stands. Contemporary manufacturers including Goggomobil, BMW Isetta, and Zundapp all had large central stands in Hall 2. While Messerschmitt exhibited on a small stand numbered 125-126 against the wall in Hall 3. Displayed were the KR200, Kr200 deLuxe (with gold- folding top introduced as a special accessory) and the Mokuli. Next to them were two examples of the new Roadster with the description of Me201. At a price of Deutschmark (DM) 1998.00 it was the first KaRo under the magical price of DM2000. The folding scissors hood frame was offered at an additional DM150 and the fabric soft-top with cover was a further DM40. According to the press release a Macho, sporty, and racy with the characteristics of a well-engineered Messerschmitt version was created. With a price around DM400 less than the KR200 de Luxe it was hardly more than a well-equipped German manufactured scooter. A Dürkopp Diana, Zündapp Bella, or a Triumph Comtessa were priced at DM1795 while the Maicoletta was DM1870 and the Heinkel Tourist was DM1895. It is not known why the new KaRo was displayed with the prefix 'Me' other than perhaps tradition. Possibly Messerschmitt wanted to associate it with the well known aircraft type following the Allied approved rebuilding of the former aircraft plants. Willy Messerschmitt announced, despite the adverse trading situation, in the spring of 1956 that in any case vehicle building would continue. Perhaps Regensburg also wanted to signal that the 201 was a further development of their administration as the KR201 went into series



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Comparing the competition

A contemporary press release from RSM (Messerschmitt Werk) the bargain price of DM1998 was only made possible because of the "high demand from Overseas markets" and although this was the explanation, the evidence was lacking at that time. However, we can now see from MFGB archives that the burgeoning British market had indeed provide a much needed boost to RSM sales. With this promotion pricing Messerschmitt sought to hide the miserable sales figures that threatened the future of RSM. According to KBA (Kraftfahrzeug Bundesamt equivalent of British DVLA or American DMV) sales in the first half of 1956 were just 2084 KaRos (KR200 & KR175). Compare this to the figures for BMW Isetta (15,043) and the Goggomobil (12,596) then it looks like a disaster!

Continuing crisis and the formation of FMR

Production planning had envisaged a monthly output of 2,000 Messerschmitts that required a large workforce and careful planning. In the closing months of 1955 RSM faced bleak times and cash flow issues from poor purchasing decisions exposed weaknesses in the management team and the local directors were dismissed. January saw the appointment of Friedrich Goy as Director who developed a rescue package to save the business. More trouble came when Augsburg produced a large quantity of defective Cardan shaft drive toothed wheel that resulted in legal steps to recover the rectification costs. In spite of the obvious risks, production continued undiminished with up to 800 completed cars stored in the factory grounds. Another crisis came as a serious flood in a New York importer destroyed a consignment of KR200s that had not yet been paid for leaving an income deficit of DM300,000 and RSM was then facing a serious cash flow crisis. An English speaking RSM employee, Egon Reisele was sent to New York where he stayed six months in a salvage operation to recover flood damaged KR200s.



Only
Messerschmitt's
exclusive 'tandem' design
can give you this superb
6 point performance!

- 1 Speed with economy.** The whole object of modern streamlined, aerodynamic design is to reduce the frontal area. The narrowest possible width is that of the driver inside the vehicle—and that is precisely what the Messerschmitt has achieved. If the passenger had been placed by the driver's side the wind resistance would have increased enormously—lowering performance and increasing costs. The Messerschmitt's unique tandem design and robust 200 c.c. engine produces a fuel consumption of 87 m.p.g. and a top speed of 65 m.p.h. It's the fastest of all small cars—and it's cheaper than going by bus.
 - 2 Complete protection.** The close-fitting Messerschmitt roof seals you off completely from all bad weather. Warm and snug in your cabin, spare a smile for rain-soaked motor-cycle and scooter riders.
 - 3 Stability and Roadholding.** The long, low lines of the Messerschmitt—quite similar to those of a racing car—make it really cling to the road. You can corner at speed with complete safety.
 - 4 Easy Parking.** The streamlined, compact shape enables you to park with the utmost ease in the smallest space.
 - 5 Easy Entering.** The Messerschmitt is the only 3-wheeler you can enter standing upright—because the roof swings away for easy access.
 - 6 Perfect View.** The driver has completely uninterrupted sight of front and sides, making manoeuvring simple and safe; a delight when touring.
- Enjoy a free trial run at your dealer's. There are Messerschmitt dealers everywhere, fully equipped for servicing and spares. If you wish to read what independent experts have written about the Messerschmitt, send a postcard, giving your name and address to

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British imports and the Suez crisis

What luck it was for RSM that the British and French Governments embarked on the disastrous Suez campaign that resulted in a humiliating withdrawal as the USA declined support. Fuel rationing in the U.K. brought about by the blockade of the Suez canal by president Nasser created huge demand for economy cars that could use the allocated ration tickets from larger vehicles. RSM had the capacity, and a vast quantity of cars in stock, to exploit this with support from the new import agent Cabin Scooter Assemblies who had taken over imports from the recently bankrupt Beulah Hill Motors.. With hindsight we can see that these events probably saved RSM at a critical time when they had run out of cash. Two huge consignments left Regensburg for England in January 1957 – the first batch of 48 cars in a train of 8 ferry wagons (6 cars per wagon) on 2nd Jan. A further batch of 100 cars left on 22 and 24 January and were loaded as cargo on the ship 'Gannet' and the steamer 'Woodcock' for the Channel crossing. Most of the cars were two tone grey/blue and cream/red so it seems certain that these came from the stockpile of 800 cars held in the factory grounds – no doubt at a huge discount to the newly formed Cabin Scooters (Assemblies) Ltd.

Willy Messerschmitt ends his relationship with RSM

With the Federal Republic of Germany regaining sovereignty in May 1955, Augsburg Messerschmitt plant reinstated their aircraft production capability with a contract to rebuild the French Fouga Magister. In May 1956, Messerschmitt AG ended their part stake in the Regensburg manufacturing arm RSM.

FMR takes over the Messerschmitt vehicle business

Despite the great interest from both press and public at the IFMA show, it was already too late. Dealers were advised just one month later on 29th November 1956 that Messerschmitt production would cease. All the IFMA expense and promotion brochures was to no avail. For two months the Regensburg production line was halted and workers laid off until a way forward became clear. On 17th January 1957 RSM Director, Friedrich Goy, announced that the newly formed Fahrzeug und Maschinenbau GmbH (FMR) would reinstate production under the new Directors, Fritz Fend and Valentin Knott.

Delayed ME201 / KR201 project finally implemented

It would be a further six months, and in time for the Summer season, beginning in July 1957 that the new KR201 went into production. An announcement that it would soon be available and dated 5th July 1957 was circulated to dealers. However, FMR could not sustain the advertised price which was increased to (Deutsch Mark [DM])2200. Added to that was a further DM195 for the 'optional extra' folding hood, side screens, and cover making the new Roadster the same price as a KR200 de Luxe.

FMR rationalisation of production

Valentin Knott was an experienced and very competent Director who insisted on professional standards for operating the business insisting that Technical Director, Fritz Fend curbed some of his more ambitious idea for developing new products. Laid off workers were soon re-engaged but dramatic cost reductions were essential to place the business on a sure footing. Mistakes from the RSM regime were soon discovered and especially the high cost of bought in components. Steps were taken to bring many of these in-house and especially the Perspex dome where Fend developed a new moulding process, drastically reducing the cost. With great enthusiasm, Fend embarked on a world tour to develop sales

Messerschmitt Name and badges

Although Messerschmitt allowed the name to continue both as a badge and for the identity of the KR200 and KR201, it was effectively prohibited from use on other vehicles. Thus the Tg500 that was under development in 1957 was not permitted to use the name Messerschmitt. With very limited capital, FMR was unable to instruct lawyers to defend them when Mercedes insisted that the 'bird' emblem was too similar to their 3-pointed star and must cease to be used on Messerschmitt vehicles. A new badge with 3 Olympic style rings replaced the 'bird' but that too soon came under threat of legal action from Audi-Auto-Union whose similar four ringed emblem was a pre-war trade mark. Although these badges were changed immediately for the German market, there is some evidence that export markets, and particularly the U.K. used up remaining stocks after the formal change of emblem.

Messerschmitt Foundation of Great Britain

Founded by Phil Boothroyd

Address for correspondence: 21 Fairford Close, Church Hill North, Redditch, B98 9LU



Fahrzeug und Maschinenbau Regensburg (FMR) was in founded December 1957 from the former company Regensburg Stahl und Messerschmitt Werk (RSM)
Personnel names and job titles for management and workers employed at FMR Regensburg during the time period January 1957 to December 1964.

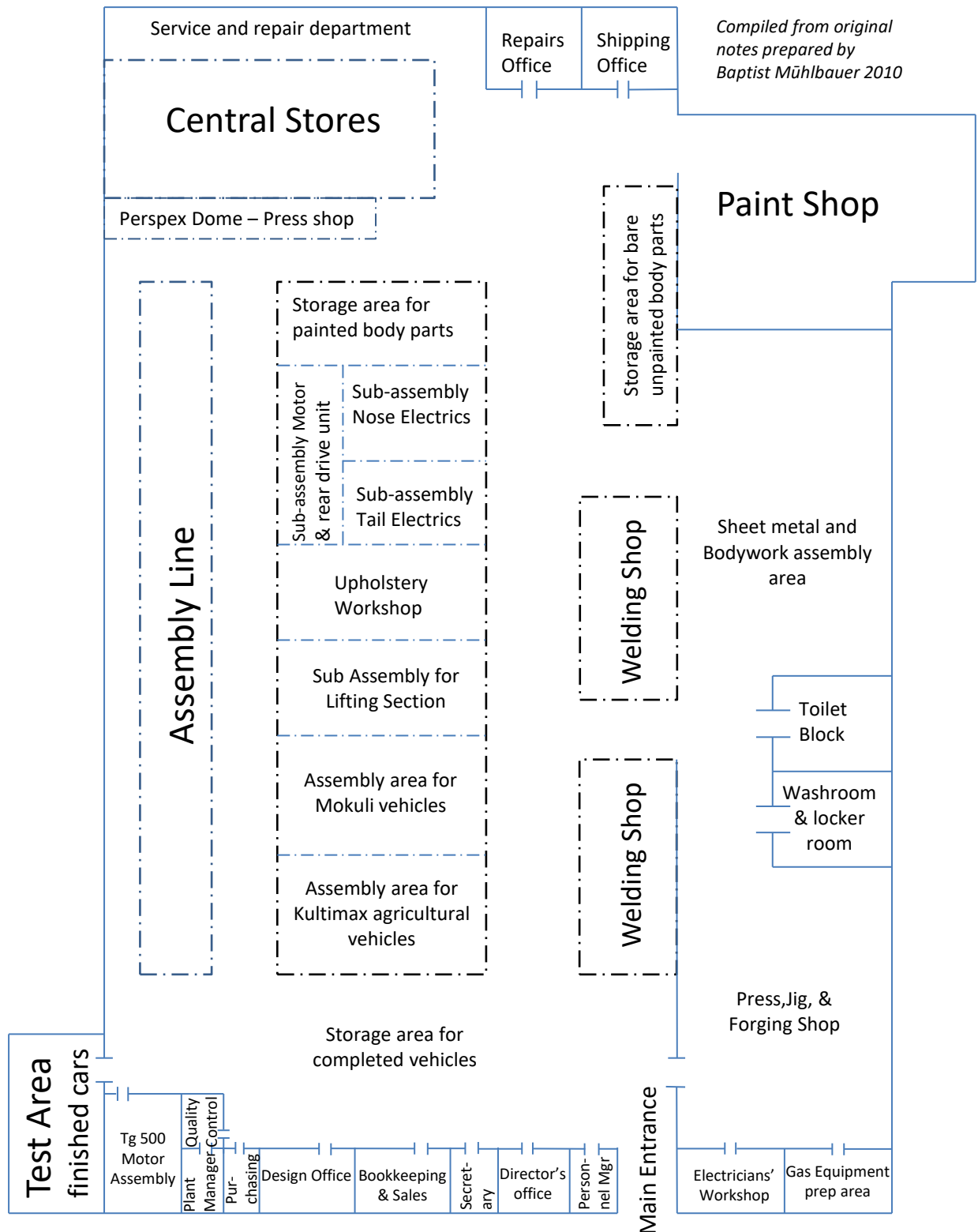
Technical Director:	Fritz Fend	Secretary:	Heidi Hoffmann
Managing Director	Valentin Knott	Secretary:	Mrs. Gallus

Works Manager:	Karl Schäfer (left to work at Audi 1960).
Works Manager	Herr. Böhm (from 1960 onwards).

Personnel Manager:	Herr. Spyra
Accounts	Hans Lehner
Purchasing	Herr. Drama
Sales	Frau. Schmid
Shipping	Karl Beck
Production Engineer	Helmut Hoffmann
Development Engineer	Willi Schwengler
Development Supervisor	Baptist Mühlbauer
Quality Control	Josef Langbrandner
Service Dept Engineer	Karl Spiegel
Service Dept. Supervisor	Hans Wiesnet
Assembly Line Supervisor	Egon Resele
Sheet metal and tube shop	Georg Heindl
Metal press shop	Leo Wirth
Welding shop	Hans Hilpert
Body assembly chassis tub & tail	Heinrich Langmeier
Bodywork Nose, wings, lifting top	August Brücklmeier
Paint Shop	Paul Schwarzhuber
Plexiglass dome moulding	Ernst Klimke
Electrical plant supervisor	Josef Hirl
Auto Electrical supervisor	Eduard Frankl
Upholstery shop	August Pöschl
Sub Assembly lifting section	Georg Pöschl
Motor assembly Tg500	Günter Welk
Test bed – final vehicle testing	Josef Albin
Spare parts and stores	Herr Knittl
Mokuli assembly	Heinrich Schäfer
Kultimax assembly	Wolfgang Hornauer
Kultimax Customer Service	Franz Obermeier
Kultimax Sales	Ernst Rumetsch (München Office)
Tool and Jig department	Josef Hirzinger & Herr. Mitterhuber
Electroplating	Herr. Bywa
Gate House / Security Guards	Josef Hirzinger & Herr. Mitterhuber.
Production Scheduling	Eduard Ernst
Works Maintenance Fitter	Andreas Willem
Press & Public Relations	Manfred Bux

Total headcount including unnamed assembly line staff around 250 persons

Layout and description of production hall 3 Messerschmitt Regensburg plant for RSM and FMR vehicles 1953 to 1964



MFGB Archive Photographs from interior of main manufacturing hall



Picture Left (MFGB archive)

FMR Production Line ca. 1957. RSM eagle badge cars on the assembly line. These are for the German market after the change to rear body-side mounted flasher lamps. Tyres appear to be German Dunlop.

Picture Below (MFGB archive)

This 1958 view is taken from the entrance of the Tg Motor assembly shop (see floor-plan).

All 3 versions of the Tg500 are in view with a Tg Roadster foreground left, 2 Tg dometops with engine covers missing, and a Tg500 cabrio next to the production line. In the completed car storage area there are British market cars (identified by the torpedo rear lamps) and German home market cars. At the end of the production line is a British market Kr200 ready to be lifted off to the test area.

