PILOTS NOTES ON ME 262
BY FLUG KAPITAN WENDEL

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HANDLING THE ME 262

Several Me 262 aircraft have been captured intact and will be flown by Allied test pilots. In view of this some notes which have been obtained from the Offices of Messerschmitt at Augsburg have been translated by this section and are reproduced below:

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In addition to studying the condensed instructions for airframe and engines, a thorough knowledge of these notes, preferably before the first flight in an Me 262, is essential to the pilot.

1. Taxiing

Always accelerate the engines slowly. The gas temperature must never rise above the permitted value and the engine must not "roar" (bullern). In view of this, only take corners by using the brakes, never by using the engines. Always taxi gently and never make sharp turns, otherwise control of the aircraft will be lost.

2. Take-off

Switch on the fuel pumps in the main tanks. Hold the aircraft stationary by applying the brakes and then slowly run up the engines, especially slowly up to 7,500 r.p.m. The brakes must be so adjusted that they will hold the aircraft stationary up to 8,500 r.p.m.

After releasing the brakes, push the throttle lever right forward and then check over the engine. The aircraft makes so little demand upon the pilot at the commencement of the take-off run that he is easily able to carry out this check. The check is done by eye and ear, the engines must not "roar" and the instruments must show the same values as they did during running up or during previous take-offs. The gas pressure must be especially watched, and if it is more than five per cent lower than previously, do not take-off. In such a case, it is most likely that cavitation has taken place in one of the compressor stages, that is, by running up too quickly, the compressor has been overloaded and the smooth flow breaks up, exactly as it does when a wing stalls. Cavitation takes place so easily in many compressors as a result of small constructional faults or as a result of foreign bodies that they become entirely unserviceable. If the take-off is continued when cavitation has occurred in the compressor, then the quantity of air flowing through is too small, the quantity of fuel injected however is the same or sometimes even larger, as a result of which, the engine is overheated.

The directional corrections during take-off should only be made with the brakes.

The control column should remain in the neutral position.

The angle of attack of the wing, when running on all three wheels, is smaller than the angle of attack when flying at the lowest possible speed (after becoming airborne). As a result of this, when the aircraft has reached the lowest permissible flying speed, the angle of attack must be increased, in other words, the aircraft must be pulled away from the ground. If the stick is pulled back too soon, or if, at the right speed, it is pulled back too far, then there is only a rise in resistance, but no increase in lift, in fact, there may be a lessening of lift. The aircraft cannot then climb. In this case immediately reduce the angle of attack to the "running" angle, in other words, push the stick forward and then start the process again.

When will the aircraft be pulled off the ground? It is best to go by the A.S.I, which should read with a fighter, fully laden i.e. 6,700 kg., 190 - 200 k.p.h. with a bomber, fully laden i.e. 7,100 kg., 200 - 220 k.p.h. After becoming airborne, immediately push the stick forward slightly as the required elevator angle for pulling off the ground is greater than that for climbing at the slowest speed.

Essential for a perfect take-off is correct setting of the tailplane. The tailplane must always be trimmed nose heavy! The further back the centre of gravity moves, the more nose heavy it must be trimmed. When the 600 litre fuel tank is full, the center of gravity is at its rearmost position. The tailplane must then be set at +2 X - +3 (i.e. 4-6 graduations on the indicator).

3.Rocket Take-Off

In order to shorten the take-off run, the rockets should be ignited 40 - 30 k.p.h. before the optimum take-off speed. If the take-off run need not be shorter, but there are obstacles to be negotiated after becoming airborne, then only ignite the rockets later, possibly even leaving it until the aircraft is airborne. Jettison the take-off rockets at low speeds, otherwise damage may be caused to the fuselage.

4.Operation of undercarriage and landing flaps

The undercarriage and landing flaps are hydraulically operated. The hydraulic pump has a capacity of 18 litres/min. and is attached to the port engine. Its capacity is rather too low and it is intended to fit an 18 litre per minute pump on the starboard engine. In the present state, therefore, the undercarriage operates very slowly. This is particularly noticeable when lowering. The nose wheel comes down very much later than the main undercarriage; so lower in plenty of time. The high speed of the aircraft easily tempts one to lower the undercarriage of flaps whilst travelling too fast and this leads to damage. The permissible operating speed must be rigidly adhered to.

5.Emergency operation

Compressed air is used for emergency operation of the undercarriage and it lowers the nose wheel and the main undercarriage fairing. The undercarriage itself falls under the influence of gravity. If it does not immediately lock, then assist it by side slipping.

6.Warning

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The compressed air is only admitted to the undercarriage or flaps after two full turns of the operating handle have been made. With emergency operation both undercarriage and flaps lower more quickly.

7.Flight

Always climb at the optimum climbing speed, never more slowly. The best speeds are given in the table below.

0 m.	altitude	speed	475	k.p.h. (true)
2,000 m.	"	"	500	"
4,000 m.	"	"	525	"
6,000 m.	"	"	550	"
8,000 m.	"	"	600	"
10,000 m.	"	"	650	"

Note: The Me 262 has an altitude compensated A.S.I, and, therefore, the indicated speed is equivalent to the true speed above 400 k.p.h.

The highest permissible rearward point for the centre of gravity is 30 percent of the mean aerodynamic wing chord. If this position is exceeded, then the aircraft becomes unstable about the lateral axis, that is, it does not remain trimmed, but will automatically stall in a turn. Under normal conditions of fuel stowage this position is not exceeded, but it is necessary always to watch most carefully the transfer pumping instructions. Watch particularly that the main tanks do not overflow as the J-2 fuel will run out into the fuselage and get on the wifeless equipment which interferes with radio traffic.

When cruising, the tailplane must be between 0 and +2.

8. Directional Stabililty

When the center of gravity is far back and the Flettner rudder trimming tabs are not perfect, especially if the Flettner tabs are a little too thick, then the aircraft sways about the vertical axis. This movement must stop when both legs are pushed hard against the rudder pedals. If this does not stop the movement then the tabs must be altered or the trailing edge of the rudder must be bent slightly outwards. A modification is in course of preparation.

9. Landing

The best approach speed is 230 - 250 k.p.h. Shortly before reaching the airfield boundary, decrease the glide angle a little and reduce the speed to about 200 k.p.h. Then flatten out and touch down normally as with an aircraft having a tail wheel. Touch-down speed is 175 k.p.h. After touch-down, allow the aircraft to tip forward slowly. Only apply brakes when the nose wheel has touched the ground.

10. Going round again

It is just as easy to go round again as with other types of aircraft, but is must be remembered that by approaching slowly the engine revolutions are low, and just as at take-off, the throttle lever must only be moved forward slowly.

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11. Single Engine Flight

When flying on one engine only, a turning moment is developed about the vertical axis, due to the engine being offset from the longitudinal axis of the aircraft. The amount of this moment is dependent upon the power and the leverage. In this case the leverage remains constant, but the power (i.e. the effect of the running engine) changes. In order that the aircraft may remain on course, this moment must be offset, which is done by applying rudder. The amount of rudder applied must be sufficient to keep the ball of the turn and bank indicator in the center; note this particularly in turns. Turns can be made either with or against the stationary engine. During long single-engine flights the force on the rudder pedal may be reduced by adjusting the Flettner trimming tabs.

The turning moment imparted by the specific movement of the rudder is dependent on air-flow pressure. The smaller the pressure, the greater must be the rudder movement. In single-engine flight, with retracted undercarriage, the speed is something over 500 k.p.h. at full throttle. In this case only about y$ of the possible rudder movement is necessary. This low speed, however, can only occur at full throttle if one is climbing at too great an angle or if the undercarriage has been lowered.

12. Single Engine landings

From what has previously been said, it will be seen that the following is necessary for a single-engine landing; minimum approach speed 260 k.p.h., so that, if necessary, full throttle may be given. At this speed and with one engine at full throttle, the aircraft loses height with lowered undercarriage, but raised flaps at 1 - 2 ms/sec. From this, it will be seen that the undercarriage should only be lowered at such a time that it is possible to reach the airfield with little or no aid from the engine. Approach speed 260 k.p.h. About 500 ms. before reaching the airfield (when too high earlier, when too low later) lower the flaps and complete the landing in a normal manner. Side slipping is possible. When landing, the Flettner trimming tabs should be set in the neutral position. If it is necessary to approach under power, then the necessary force on the rudder must be exerted by the pilot. At full throttle under all circumstances apply full rudder.

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