A PRIMER ON WW2 LUFTWAFFE PAINT

29 YEARS OF RESEARCH IN 29 MINUTES

JAMES CALDWELL
WW2 Luftwaffe aircraft models are very popular subjects (perhaps not in our club)

Interesting, colorful paint schemes, combined with flamboyant personal markings on models of contemporary cutting edge technology provides a wide base of subject matter for the builder

Many modelers may be intimidated due to the wide variety of colors & markings used

This presentation should help with a basic understanding of the colors and terminology
Several factors provide clues to the colors used on Luftwaffe aircraft

- Time Period
- Theater of operations
- Type of aircraft (fighter, bomber, recon, etc.)
Since the Armistice of 1918 prohibited the Germans from maintaining a standing army or air force, aircraft had to be developed covertly as civil transports and airliners.

The RLM developed regulations regarding colors & markings.

A series of colors, starting with 00, were developed with specific uses stated for various colors.
• Early aircraft were painted silver, white, cream and eventually light green (RLM 63)

• As the Germans became less concerned about the world learning about their “beating plow shares into spears” & aggression, they became more concerned about “hiding” their war machines on the ground

• Disruptive camouflage patterns were developed to conceal the expanding air force

• These consisted of RLM colors 61, 62 & 63
The Spanish Civil War 1936-1939

- A mixture of solid colors and disruptive camo patterns were used in Spain
- Essentially all types of Luftwaffe aircraft were sent to Spain where they were to be tested by baptism of fire
- Early Bf 109s arrived in silver dope or possibly natural metal
- Other fighters (including biplanes) arrived in Spain in the camo they had in Germany
Invasion of Poland Sept. 1, 1939

- By this time, biplanes were relegated to reconnaissance or ground support (precision bombing)
- Biplanes & monoplane bombers retained their pre-war tri-color camo patterns
- New bombers coming off the production line were painted 70/71 over 65
- The front line fighters of the day, the Bf 109 & 110, were primarily painted 70/71 over 65
Phony War & Battle of France October, 1939 to May 1940

- German pilots made comments to the RLM regarding combat operations against Poles, French & British pilots during the invasion of Poland and the subsequent skirmishes with French & British pilots.

- The RLM colors of 70/71, while they hid the aircraft from ground attacks in Germany, did little to hide aircraft in the air.

- Orders were issued to immediately bring the 65 light blue up the sides of the fuselage to help hide the fighters in the air.
As the Battle of Britain began, fighters carried the same paint patterns as during the Battle of France.

In August or September, again concerned with aircraft being located on the ground, the RLM ordered fighter units to add “mottles” to the sides of the aircraft.

These were to be colors 70/71 or 02/71, both combinations over 65 light blue.

Bombers remained in a splinter pattern of 70/71/65.
Due to interpretations of orders, many variations of “mottling” was observed

JG 2 used a stippled effect placed on the sides of the aircraft by brushes or sponges

JG 54 used some very creative stripes and blotches

Some squadrons applied a very thin, even coat of 02 over the 65

Some units interpreted the orders correctly and created the type of mottling that would be seen through the remainder of the war, although the colors changed from time to time
“Mid-war grays” 1940-1944

- As the air war pressed to higher altitudes, German pilots expressed to the high command that the dark greens and gray green were doing little to hide the aircraft in the air.

- It is theorized that the ground crews, at a unit level, began to mix available paint stocks together to create shades of gray that would conceal the aircraft at altitude.

- British intelligence reports of downed German aircraft indicate that shades of gray began to appear as early as September or October, 1940.
- It appears that sometime late in 1940, the RLM issued orders to paint fighter aircraft in the new gray schemes, colors 74 Gray Green, 75 Gray Violet and 76 Light gray blue
- It is possible that existing aircraft remained in 70/71/65 schemes at least until the airframes became due for major overhauls
- New fighters began to come off the assembly lines in 74/75/76, although fighters are believed to have come off the assembly line in 71/02/65 until mid 1941 as factories worked to use existing paint stocks
Creative forms of mottling were observed coming from the factories, as well as at unit levels when aircraft were refinished in the field.
Fw 190A-8 W.Nr. 170346 of Obstlt. Josef Priller JG 26, France 1944
Tropical Fighters 1941-1943

- Fighters that were initially sent from Europe to Africa were left in European paint schemes.
- Because fighters were providing low altitude cover for Ju 87 Stuka dive bombers, it became apparent that the gray color schemes did not provide much diversion against the sandy deserts of Africa.
- The Germans “borrowed” paint stock from the Italians to paint their aircraft.
- Ultimately, the RLM issued color formulations and samples for fighters and bombers to be painted.
These colors were known as RLM 78 Light Blue, 79 Sand Yellow and 80 Olive Green.

Early versions of 79 were more yellow than later versions and closely resembled the Italian colors borrowed upon arrival of the Germans in Africa.

Ultimately, the 80 spots were completely omitted in favor of solid sand colored aircraft (79) with light blue (78) sides and lower surfaces.

As forces were diverted to Russia as the African campaign ended, it is believed that 79 colored aircraft were sent to southern Russia.
Russia 1941 - 1944

- As previously mentioned, aircraft arriving in Russia were tropical fighters in tropical colors
- A number of European fighters were also diverted to Operation Barbarossa and arrived in Russia in 71/02/65 or 74/75/76 paint schemes
- Again tasked with bomber support missions, German fighters were flying at altitudes lower to the ground
- German pilots expressed to their ground crew that earth tone colors such as greens and tans would be more ideal for these operations
- Units on the Eastern Front began to experiment with all kinds of colors and patterns
- These colors may have been mixed from combinations of existing RLM colors or could have been captured paint stocks from the Russians
- Factory applied finishes were used as well without modification
- White wash was “painted” over nearly all aircraft, fighters & bombers during winter months
- This white paint was “washable” and could be removed quickly as Spring approached
Late War Greens 1944 & 1945

- Due to lack of fuel supplies, German aircraft began spending lots of time on the ground.
- Rather than worry about being concealed in the air, the RLM became concerned about being spotted on the ground and gave orders for aircraft, both new and existing, be painted in what are referred to by enthusiasts as Late War Greens, RLM 81 Brown Violet, 82 & 83 Dark and Bright Green.
- Due to communication and manufacturing breakdowns, color chips were never produced.
That leaves the colors open to a lot of interpretations

Written descriptions of the colors were written and circulated and color 81 is described as Brown Violet

Brown Violet matches US Army Olive Drab very closely as observed on some captured examples, but has more of a violet hue

82 & 83 are problematic: at one time it was thought that 82 was Dark Green, closely resembling 71

Several hobby paint manufacturers produced colors labeled 82/Dark Green
Subsequent research has revealed that 82 is a bright, grassy green.

RLM 83 is now believed to be Dark Green, similar in color to 71.

These colors were primarily used on fighter aircraft produced in the last year of the war.

Evidence suggests that bombers remained 70/71/65 throughout the entire war.

Some references state bombers were painted in these late war greens, but more research is needed to fully establish this.
Nightfighters 1939 - 1945

- Luftwaffe units were relegated to night fighting roles throughout the entire war
- British high command preferred to raid German targets at night relying on visual sightings for navigational check points
- Early night fighters were left in daytime schemes, with all black paint jobs being applied as early as the Fall of 1939
- By mid 1941, upper wings and fuselage sides were painted 76 with 75 mottles or blotches