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Essay  
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**Camouflage**  
"To Hide in  
Plain Sight"



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## Camouflage "To Hide in Plain Sight"

*Camouflage and magic have a lot in common: they confound and deceive. A coin, an army disappears; the whole world is a stage where the goal is "to hide in plain sight."*

Camouflage and combat aviation were born as a result of the First World War. From 1914 onward, aircraft flew high over the front line to see what the "other side" was up to. These machines were both slow and fragile; they were not camouflaged, simply because few people actually saw the need for it. Early military aircraft were a pale yellow, just like pre-war machines, an effect created by the application of translucent dope and varnish on the cotton or linen fabric used to cover the light wooden structure. At the time, this was the extent of the protection given to aircraft. The gossamer-like McDowall Monoplane, on display at the National Aviation Museum, in Ottawa, Canada, is a reminder of those early days when a pilot could hear the wind in the wires.



*McDowall Monoplane (NAM)*

Once in the air, or even on the ground, the first military aircraft stood out like sore thumbs. They were plainly visible as they flew above the forests and the mud of the trenches. As early as 1916, with the introduction of new, improved fighter aircraft, and with the increasing number of raids on bases, losses became so great that researchers on both sides had to devise camouflage schemes. Their main goal was, literally, to make the aircraft disappear into the woodwork.

In Great Britain, the story actually began in 1913 with a series of experiments performed by a Crown corporation, the Royal Aircraft Factory, to discover the ideal pigmentation needed to protect aeroplane fabric from the highly damaging effects of the sun's ultraviolet rays. The generic name used to describe the compounds was "protective covering," or PC.



Spad 7 (NAM)

A mixture offering the best compromise between protection *and* camouflage was adopted in April 1916, with the so-called "PC-10." Depending on the dopes and the pigments in it, and the proportions used, PC-10 could vary from a greenish-ochre to a superb chocolate brown. Two well-known fighter aircraft on display at the Museum bear this British camouflage: the Spad 7 and the Sopwith Snipe.

The German military approached the problem from a different angle. At first, the Air Service used two or three colours, applied in large blotches over the entire aircraft. Toward the end of 1916, Germany introduced a new scheme made up of polygons in four or five colours, sometimes more, printed on the fabric. This form of camouflage not only saved the weight of the paint, but also the time needed to apply it to each aircraft. A night version of this "lozenge fabric" can be seen in Ottawa, on an A.E.G. G.IV twin-engine bomber, one of the Museum's showpieces.



Sopwith Snipe (NAM)

Given the large scale use of wood, and in some cases light alloys, in aircraft covering, Germany also had to develop camouflage paint schemes involving patterns that disrupted the silhouette of the aircraft, making it difficult to distinguish. The three to five colours they used were often quite similar to the ones printed on the "lozenge fabric." All of this may seem very simple, but on the flying fields near the front, textbook methods often had to be replaced with whatever could be improvised from available materials. Uncovering the true schemes becomes all the more difficult.



A.E.G. G.IV (NAM)



*Hawker Hind (NAM)*



*Hawker Hurricane XII (NAM)*

With the return of peace, the air forces of the Allied countries soon abandoned camouflage. Throughout the 1920s and up to the middle of the 1930s, combat aircraft were often adorned with silver paint. The Museum's Hawker Hind light bomber is a stunning reminder of this brightly coloured period — the golden age of aviation.

This era ended when Hitler assumed power in Germany in 1933; a reborn German air force soon came into being. The Royal Air Force (RAF) had no choice but to re-equip its various squadrons with more modern machines, and camouflage was reintroduced at that time to conceal these aircraft. The basic scheme was a two-tone, dark green/dark earth, disruptive pattern applied in large, curved areas. For the lower surfaces, the RAF opted for a light greenish-blue or, in the case of night bombers, a matte black. This type of daytime camouflage can be seen on one of the Museum's best known aircraft, the Hawker Hurricane.

From 1941 onward, as the RAF assumed a more offensive role bombing targets in Germany and occupied Europe, new camouflage patterns had to be devised. For example, aircraft flying in the daytime began to sport dark green/sea grey or dark slate grey/extra dark sea grey two-tone camouflage schemes. These new colours offered an increased measure of protection for the increasing number of aircraft criss-crossing the Channel. The de Havilland Mosquito and North American Mustang on display at the Museum relied on such a dark green/sea grey camouflage finish.



*De Havilland Mosquito XX (NAM)*



*North American Mustang IV (NAM)*



*Avro Lancaster X (NAM)*

To protect its night bombers, the RAF gradually increased the amount of matte black covering the aircraft. The end result can be seen on the Museum's Avro Lancaster, an awe-inspiring four-engined bomber; the green and earth tones of 1939 cover little more than the upper surfaces.

The German air force, or Luftwaffe, used more or less the same type of two-tone camouflage scheme up until the last stages of the Second World War. The colours used, however, could vary according to the period or type of mission: grey green/grey violet or dark green/grey violet, from 1944 onward for fighters, and dark green/black green for bombers. In outline, the large patches very often remained angular, hence the name "splinter camouflage;" undersurfaces were light blue. On quite a few fighters in service in 1940–41, this light blue also covered the sides of the fuselage. Green paint was applied in small, irregular blotches to complete the effect. Specific camouflage patterns were also devised for certain types of aircraft; the Messerschmitt Me 163B Komet, displayed at the Museum, is an example.



*Messerschmitt Me 163B Komet (NAM)*



*Canadair Sabre 6 (NAM)*

The end of the war signalled a return to brightly coloured paint schemes; once again, camouflage fell out of fashion. For Canadian squadrons based in Europe from the early 1950s onward, however, circumstances were altogether different; discretion was the better part of valour. Thus, no greater contrast can be found than between the ocean grey/dark green camouflage worn by the Museum's superb Canadair Sabre and the natural metal finish of its famous neighbour, the Lockheed F-104 Starfighter.

Today, despite the service introduction of the first stealth aircraft, effective camouflage still has a function in air forces the world over. Simple proof of this can be seen on each McDonnell Douglas CF-18 flown by the Canadian Forces.



*Lockheed F-104A Starfighter (NAM)*