FIFTY
SHADES
OF GREY

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The important role of the F-4 Phantom in American cold war military history have been very well documented and many stories of its impeccable track record have been told on numerous occasions. This article however have a slightly different focus, on something abit more obscure: The grey color used on Phantoms in US military service. At glance this could seem like a unimportant detail in such a rich history, but as it turns out, the grey color tells a story that covers some interesting aspects of the Phantoms service period and whether you are a scale modeller, a Phantom buff or an aviation enthusiast the story of the grey colors used on the Phantom may uncover some unknown facts that adds to the phabulous history of our common favorite: The F-4 Phantom:

The early years
After the end of World War two, the standard base color of the carrier borne aircraft in the US Navy and Marines was Glossy Sea Blue, a dark shade of a somewhat desaturated blue. National insignia and other standard markings were white, while squadron markings were kept in standard trim colors of either red, white, light blue, yellow, green or black, depending on what order the squadron had within the wing (the first squadron with modex numbers 1xx would have red trim, the second yellow etc.) . An example of these markings can be seen on color plate #1 that depicts a F9F-5 Panther from VF-154, as they appeared in 1954.

Color plate #1: F9F-5 Panther, VF-154 "Flaming Panthers", 1954

In 1953 when the Korean war was drawing to a close (or rather a standstill), it was concluded that the Gloss sea blue scheme was too conspicuous especially at high altitude. With both the air force and navys demand for ever higher flying (and faster) aircraft, it was evident that the midnight blue schemes days were numbered. Throughout 1953 tests were conducted to evaluate a better alternative to the gloss sea blue paint scheme. The USAF had been avoiding that problem for a long while and simply kept their aircraft in a Natural metal finish, and in 1954 the navy tried the same. However, saltwater and unpainted metal don't go too well together and the unpainted aircraft simply proved too difficult to maintain for Navy and Marine squadron maintenance personnel. The greyish finish of the unpainted aircraft had however, proven more efficient than the glossy sea blue, but an alternative was needed. In 1955 a light grey color was selected for the upper side of the aircraft and a glossy white color for the underside to achieve countershading, a trick learned from the animal kingdom. Another reason for the white underside was to make the belly of the aircraft more resistant to the flash from a nuclear explosion. This was what was called a "anti-flash white", which would later be employed by the SAC for their bombers.

The upper-side Light Gull Grey (FS26440) was a yellow/greenish light grey color, with a semigloss finish (some sources claim that the correct color is in fact FS16440, which is a glossier version of the one mentioned). Although the colorcode of the Light Gull Grey that was applied, was the same regardless of which factory or what service that applied them, there were variations. Upon delivery the factory painted Phantoms had a slightly different hue than the Phantom that had been repainted while in squadron service. It´s speculated that it was due to the color of the primer rather than the color of the Gull grey paint. In any regard the factory painted Phantoms were slightly darker and the hue of the paint had a more redish appearance.

The underside was a glossy white (FS17875) with a blue/greenish shade often referred to as insignia white. A few sources claim that this color was not permitted to be used as a tinting medium for other colors. The color used as tinting medium was FS17925, a green/yellowish white, was very commonly used by corrosion control personnel for various purposes. With FS17925s versatile use, it would always be at hand in the paint shops, and would be used for aircraft undersides instead of Insignia white. While FS17875 and FS17925 are hard to distinguish even when just applied, this goes to show how deviations from the standard colors were more common than one might expect. Color plate #2 below is an example of a F-4B Phantom in the well known Light gull grey over white. Color plate #2 also shows how control surfaces also would be painted white in compliance with the standard paint scheme introduced in February of 1956.

Color plate #2: F-4B Phantom, VF-161 "Chargers", 1966

Air Force grey ghosts
The first F-4 Phantoms in USAF service was 27 F-4Bs loaned to the USAF by the US Navy in late 1963. The Phantoms were kept in the original base colors mentioned above: Light gull grey over insignia white. At the outbreak of the Vietnam war this paint scheme was standard even for the F-4Cs purpose build for the USAF. Color plate #3 shows an example of a early production F-4C Phantom in gull grey scheme.

Color plate #3. F-4C Phantom, 15th Tactical Fighter Wing, 45th Tactical Fighter Squadron, 1965

As the Vietnam war continued all Phantoms in theatre were repainted in what would become known as the South East Asia (SEA) scheme (two tone green and tan over white), and thus the grey era of USAF Phantoms would come to an end...but only for a while. I will delve into that later in this article, but it´s worth noticing that the USAF found it more efficient to paint their aircraft in a dark green/tan paint scheme than to retain the Gull grey and white finish. The US Navy experimented with various kinds of jungle camo schemes in the early years of the Vietnam war, only to find that the darker shade made the aircraft difficult to see onboard the ship at night thereby increasing the risk of deck handling accidents while apparently not reducing the vulnerable to enemy air defences. So while the USAF discarded the Gull grey, the US Navy sticked to it, and it would remain standard for many years to come.

Post Vietnam
The Aerospace Defence Command (ADC), had the responsibility of providing aerial protection of CONUS. The squadrons under the command of the ADC was for the most part made up of Air National Guard squadrons, most of which designated as Fighter Interceptor Squadrons. Throughout the 60s much of the flying components of the ADC were equipped with Century series fighters, such as the F-101 Voodoo, F-102 Delta Dart and the F-106 Delta Dagger, which was designed as dedicated interceptors. After the end of the Vietnam war most ofju the frontline squadrons in the USAF was replacing their C and D model Phantoms for the E model. The shortnosed Phantoms would then be passed on to the ANG squadron as replacement for the century series fighters. While some squadrons retained the SEA scheme under ADC command,

most aircraft were painted in the so-called ADC grey. That shade of gray was FS16473, a slightly bluish grey. As the first digit in the FS number suggest the paint used was high gloss, and the color was applied to the entire aircraft (both under- and upperside). While was common to see ANG F-4Cs and F-4D in that shade of grey, it was not a common occurrence to see it applied to F-4Es, however it did happen: The black knights of Keflavic, 57th FIS, operated a number of ADC grey F-4Es, which can be seen on color plate #4. The ADC grey Phantoms started to appear in the mid-70s and remained throughout the decade to about the late-80s.

Color plate #4: F-4E Phantom, 57th Fighter Interceptor Squadron, 1983

...In the NAVY !
In the department of the Navy, it was business as usual for the most part of the 70s, however, something was stirring ! The sometimes very colorful paint schemes worn by both US Navy and Marine squadrons was beginning phased out in favour of more subtle dark grey over medium grey paint scheme often referred to as low visibility markings. First signs that something was about to happen was when the white belly and control surfaces of the aircraft was being painted Gull grey in what was dubbed the "overall gull grey" paint scheme. Both standard markings such as the intake warning triangles, ejector seat triangles, rescue arrows etc, were still in high visibility markings. Squadron markings was also in high visibility colors. The first wrap around schemes was introduced in the late 70s, likely around 1978. The overall gull grey scheme would be gradually introduced onto Navy and Marine Phantoms, and would mark the beginning of the era of the low visibility paint schemes.
Among the first squadrons to be adorned with an early incarnation of a low visibility paint scheme was the F-4Js of CVW-6 (See picture #5). The Gull grey scheme was retained as a base overall gull grey color but the markings were all kept in a dark shade of grey. HThe high visibility colors have proved too easy to spot at high altitudes, and in the 1980 Navy and Marine the low visibility paint schemes were introduced, and like the wrap around scheme, the low visibility scheme wasn´t introduced to the entire fleet at once, and as picture #5 shows, old habits can die hard, as there´s still some high visibility markings left on the VF-33 bird. Even in 1983 and 1984 some squadrons were still utilizing the wrap around high visibility schemes.

Color Plate #5: VF-33

The first generation of low visibility paint scheme never caught on despite being used by both F-4 Phantom squadrons and F-14 Tomcat squadrons. It is speculated that the high gloss gull grey paint would make the aircraft visible at altitude when the sun would reflect of the surface of the aircraft. That was a problem that needed to be addressed and by the mid 80s a new paint scheme was being developed: The Tactical Paint Scheme, or simply TPS. This would mark the end of the usage of the Gull grey paint that have been standard for almost 30 years.

Hills and Lizards

In the early 80s USAF squadrons that were still equipped with F-4 Phantoms would for the most part be painted in a modified SEA scheme. The scheme differed from the original SEA scheme in being a "wrap around" scheme (like mentioned in the section above, meaning that the belly of the aircraft were not painted white) and the tan color was slightly different (less saturated), than the original despite having the same FS number. The SEA scheme had proven less effective in certain environments, and thus an alternative was needed. From the early 80s, the European I (or simply Euro I) scheme was being introduced to frontline squadrons. The paint scheme was occasionally referred to as the "Lizard" scheme, which is the reason for the somewhat cryptic headline.

On the Phantoms the paint scheme was a modified version of the SEA scheme only with the Tan replaced by a dark grey (see color plate #6 and #6a). According so some sources, during the first month of repaint the color Gunship grey FS36118 was being used, but would later be replaced with the darker Charcoal grey FS36081. The later Euro paint scheme are sometimes referred to as the Euro II scheme.

Although the name implies that the paint scheme was used only by the USAFE, that wasn´t the case at all. As seen on colors plate #6 even ANG squadrons would operate aircraft painted in Euro camo scheme.

Color plate #6: F-4D Phantom, 184th Tactical Fighter Group, 127th Tactical Fighter Squadron, 1984

Color plate #6a: F-4D Phantom, 81st Tactical Fighter Wing, 78th Tactical Fighter Squadron, 1974

While the Euro I scheme was used primary for units that were assigned to other missions that air defence. The introduction of the teen fighters also saw the introduction of a new standard paint scheme for USAF fighters: The Hill scheme. This grey on grey (on grey) paint scheme was introduced in the mid-80s and would adorn the Phantoms until they were taken out of active duty many years later. The Hill scheme came in two flavours, called the Hill I and Hill II scheme, and like the Euro I and Euro II scheme, Hill II would replace Hill I soon after it´s inception.

The base of the Hill I scheme was grey, with a Light Ghost Grey (FS36375) underside and Medium Grey (FS36270) forward fuselage, tail fin and outer wing panels, while the fuselage behind the cockpit and the inner part of the wings were Gunship Grey (FS36118). Yet again the USAF tried do incorporate countershading in their standard paint scheme. It would not take long before the

countershaded Hill I scheme gave way to the paint scheme that was to be known as the Hill II, which was a two tone grey scheme where the aircraft was painted medium grey in the areas where the Hill I scheme was Light Ghost Grey. The Hill Grey II actually came in two variants: One with Medium grey lower surfaces, and one with the Gunship Grey extending to the lower surfaces in the same pattern as on the upper surfaces. An example of the Hill II scheme can be seen on Color plate #7 with a RF-4C Phantom of Mississippi ANG.


Color plate #7: RF-4C Phantom, 186th Tactical Reconnaissance Group, 153rd Tactical reconnaissance Squadron, 1989

For the remainder of service with the USAF, the ever decreasing number of active Phantom units would almost entirely be utilizing the Hill II scheme. Even to the very last QF-4E/Gs that was in service until last year, the Hill II scheme was applied.

The twilight of the Marine and Navy Phantoms
Before this piece is wrapped up, the last few years of Marine and Navy service saw a ever decreasing number of colors being applied to the active aircraft. Regulations allowed ever fewer colors, but for the subject matter of this article, this era was pure gold: No fewer than three grey shades was used in the so-called TPS. The TPS wasn´t all that different from the USAF Hill I scheme. In fact some of the same shades of grey was used, for example for the belly of the aircraft were painted in Light Ghost Grey (FS36375), and the base color on the upper fuselage was Dark Ghost Grey (FS36320). The upper parts of the fuselage, wings and control surfaces was however in a lighter shade than the Gunship grey: The Medium Blue-Grey (FS35237). The overall appearance of the TPS was that of a bluish tone, although one could speculate it was due to the many years of color absorption from the oceans blue, a more likely cause of that was the challenging environment of the open ocean. The flat colors used on the TPS seems to have been more prone to weathering than the former glossy paints.
An example of a Phantom painted in TPS can be seen on color plate #8 where a F-4S Phantom of VMFA-112 is depicted sporting the low-visibility standard paint scheme of the last years of Navy/Marine service.
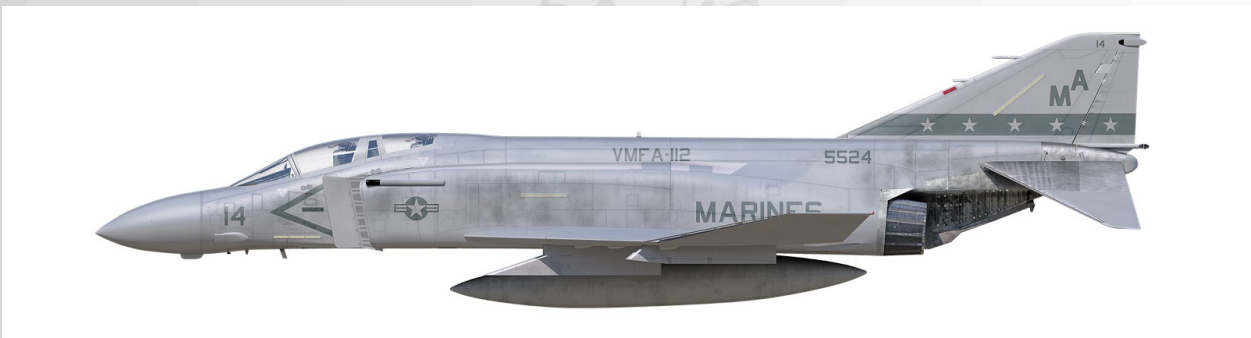
Color plate #8: F-4S Phantom, VMFA-112 "Cowboys", 1991

With those words the story of the Grey ghosts have come to a close (at least in this article). There could have been many other aspects covered, for instance the experimental paint schemes of the early 80s (among them the Ferris scheme), not to mention all the other air forces that have operated the Phantom, have been using grey in their camo schemes too. But for the time being: ...That´s all folks !

Below is a table of the colors mentioned in the article and their applications.

Color (FS)	Color Name	Application	
		Navy and Marine	**USAF**
FS36081	Charcoal Grey	-	Part of camo pattern: Euro I and II: early 80s - mid 80s
FS36118	Gunship Grey	TPS: upper surfaces on some F-4S.	Part of camo pattern: Euro I: early 80s Upper surfaces Hill I and II: mid 80s - 2016
FS35237	Medium Blue-Grey	TPS: upper surfaces. Early 80s - late 80s	-
FS36270	Medium Grey	-	Fuselage and wing base color. Hill I and II: mid 80s - 2016
FS36320	Dark Ghost Grey	TPS: Fuselage and wing base color. Early 80s - late 80s	-
FS36375	Light Ghost Grey	TPS: lower surfaces. Early 80s - late 80s	Hill I: Under surfaces. Mid 80s
FS16473	ADC Grey	-	ADC: Base paint mid 70s - mid 80s*
FS26440	Light Gull Grey	Upper surfaces 1956-1980	Upper surfaces 1963-1965
FS17875	Insignia White	lower surfaces 1956-1980	lower surfaces 1963-1965
FS17925	White Tinging Medium	lower surfaces 1956-1980	-

*The ADC grey was used on other aircraft before 1975Thanks to Jens Jensen, Rich Renthorp, Paul Minert and Coert Van Breda