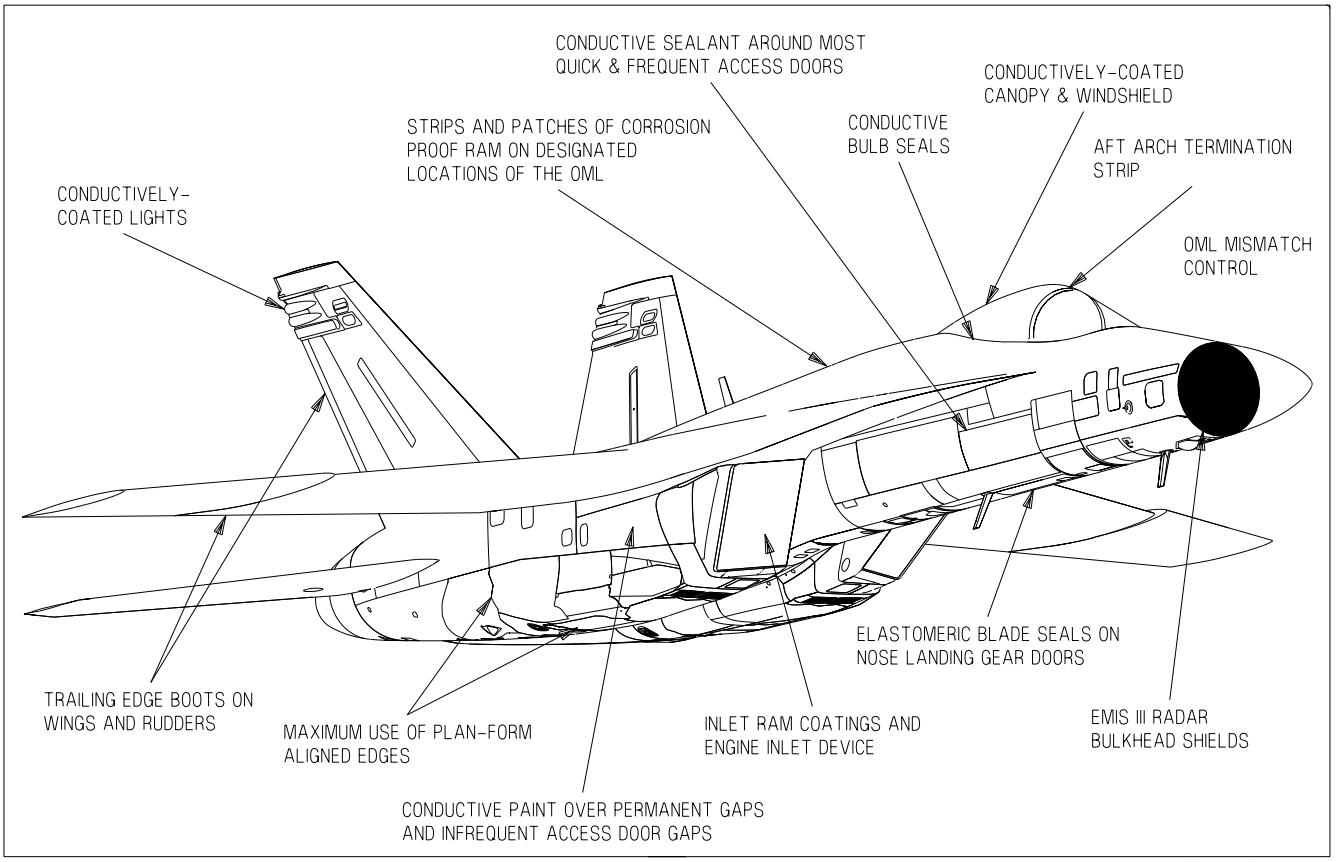


**Figure 1-3. Radar Cross Section (RCS) Reduction**

**1.1.4 Radar Cross Section (RCS) Reduction.** RCS reduction is a significant feature of the F/A-18E/F. While the maintenance community is tasked with maintaining the RCS features of the aircraft, it is in the best interests of the aircrew community to take an active role to ensure the survivability characteristics of the aircraft are retained.

RCS reduction is accomplished through numerous airframe design features. See figure 1-3. The baseline feature is planform alignment of as many surface edges as feasible. The outer moldline of the aircraft is treated to make it a smooth, conductive surface in order to reduce radar scattering.

Treatment entails metalizing the navigation lights, canopy, and windshield. Permanent joints and gaps around infrequently opened panels are filled with a form-in-place (FIP) sealant, which is blended flush and conductively painted. Gaps around frequently opened panels are filled with a conductive FIP (CFIP) sealant, which allows for easier repair. Conductive tape is applied to a few gaps where there is no substructure to support FIP material, such as along LEX edges. Conductive tape can also be used to quickly repair damaged FIP joints.

Since CFIP in the gaps around frequently opened panels will experience the most wear and tear, a corrosion-proof radar absorbing material (RAM) is applied in front of many of these gaps. RAM is also applied (1) on the inlet lip and duct, (2) as diamond-shaped patches around drain holes, and (3) in various locations that tend to highly scatter radar energy such as around pitot tubes, vertical tail openings, vents and screens, flap hinges and fairings, and portions of the pylons and external tanks. A multi-layer RAM is used in a few locations, such as around AOA probes and on the top, front surface of the pylons.

Gaps around landing gear doors are treated in two ways. Nose landing gear doors use flexible conductive blade seals on leading and trailing edges; main landing gear door edges are wrapped with RAM. Scattering from trailing edges (i.e., trailing edge flaps and rudders) is controlled by a radar absorbing boot which is bonded to the surface. Scattering from the back edge of the windshield is controlled by a gray, laminated material called the aft arch termination strip.

The engine inlet ducts incorporate a device to minimize engine front face scattering. The edge of the canopy incorporates a conductive bulb seal to block radar reflections from that joint. Conductive bulb seals are also used where there is significant structural flexure, such as at the wing-to-LEX interface.

Eleven electro magnetic interference shields (EMIS) III radar shields are permanently installed on the radar antenna hardware. To allow the aircraft to achieve its full RCS reduction potential, a missionized kit consisting of twelve more EMIS III radar bulkhead shields, are installed for combat missions only. Additionally, SUU-79 pylons can be fitted with a set of low observable (LO) hardware.

## 1.2 BLOCK NUMBERS

See figure 1-4 for block numbers and bureau numbers for each lot of aircraft.