

RMC™

Effective Cleaning Technology for Aircraft Turbine Engines





# Effective Cleaning Technology

## R-MC - restoring output, fuel consumption and exhaust temperature

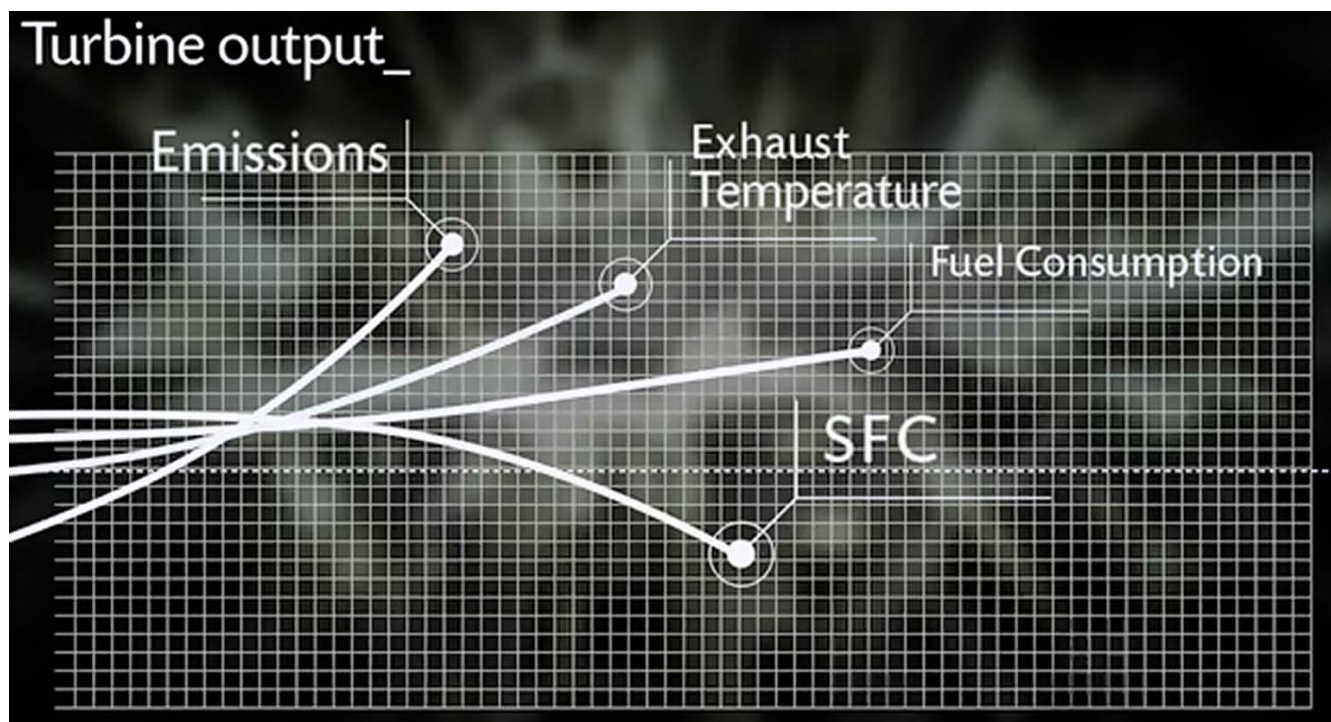
Despite spending much of their operating life in clear air, aircraft gas turbine compressors are naturally prone to fouling as they are generally not fitted with air filters. Engines are particularly at risk during takeoff and landing, and whilst operating in areas of pollution, sand, dust storms, etc. Helicopters operating nearer the ground are especially exposed.

The fouling can come from a wide variety of sources; hydrocarbons from fuel and lubricating oils; volcanic ash; pollen; marine aerosols; dust; smoke; pollution, etc. The presence of hydrocarbons acts as a bonding agent for the solid contaminants, 'gluing' them to the compressor surfaces.

The build-up of contaminants on the compressor surfaces leads to a dramatic reduction in compressor efficiency, which gives rise to a loss of available power, increased fuel consumption and increased exhaust gas temperature. These conditions can lead to flight delays, inspection failures and withdrawal from service, increased operating costs and safety compromises.

In the past, abrasive cleaners such as powdered nutshells have been introduced into the intake air-stream in an attempt to remove compressor fouling. Use of abrasive cleaners is not often recommended, however, as they can damage blade coatings and block smaller airways and tappings. Furthermore, in engines with a large front fan section, much of the inlet air bypasses the main compressor section, taking the cleaner with it.

Solvent-based cleaning fluids were subsequently introduced, but these are volatile, toxic and hazardous for operators and are certainly not environmentally friendly. There are also concerns surrounding the possible introduction of such substances into air conditioning systems.



**RMC**<sup>TM</sup>

Enhancing Engine Performance



## R-MC G21 The original, the safest and the most effective, approved cleaning fluid

### R-MC G21 - The Industry Standard

Established over 50 years ago, R-MC are the global pioneers of fluid-based engine cleaning technology. R-MC were the first company in the world to develop non-abrasive cleaners, the first company to develop aqueous cleaning fluids and are leaders in the field of high-pressure delivery systems.

R-MC G21 is a patented blend of surfactants, corrosion inhibitors and high-quality demineralised water. Approved by all the major engine manufactures, R-MC G21 is specified in the majority of aircraft operations manuals. G21 has the following unique properties;

- Water-based
- Non-toxic
- Non-flammable
- Non-corrosive
- No harmful effect on engine components
- Readily biodegradable
- Supplied ready to use or as a concentrate



### The Complete Engine Cleaning System

A highly effective cleaning fluid is only part of the solution to compressor fouling – the fluid must also be delivered into the compressor in an effective manner. It is vital that the design of injection nozzles produces the correct degree of atomisation to give the required cleaning performance, and also that the nozzles are positioned correctly to ensure that the cleaning fluid reaches the compressor core.

R-MC have developed a range of delivery systems from simple, hand-operated systems for smaller engines and Auxiliary Power Units, to state-of-the-art, high-pressure, portable systems, complete with specially designed nozzle assemblies. The R-MC high-pressure system gives a far greater degree of droplet size-control than a conventional, low-pressure system. This ensures much more effective cleaning of the compressor surfaces, and also allows much less fluid to be used per wash.

### Proven Technology from the World Leaders

R-MC products for aviation have been proved in the field for nearly half a decade and have been adopted by many leading engine manufacturers, aircraft owners and operators. You can expect nothing less than unparalleled performance from R-MC G21 – produced by the world leaders in engine cleaning technology.

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