

# The Fiat-Revelli Machine Gun

by **Bill Ruxton**

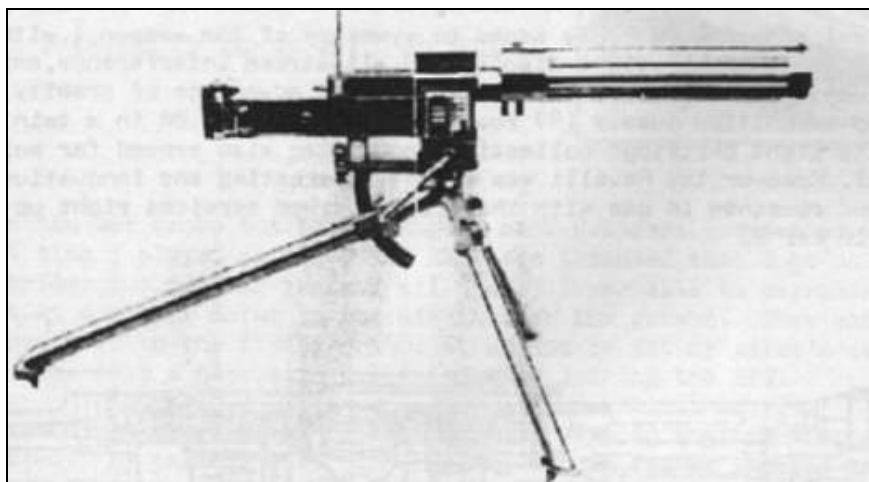
The Italian Revelli (or Fiat) aircraft machine gun, chambered for the standard Italian Army 6.5mm cartridge, deserves more than the usual degree of attention from historians, both because of the unusual nature of the weapon itself as well as the background of its inventor. As was the case with almost all aircraft machine guns of the Great War, it was an infantry weapon converted for aircraft use from the 'Mitriaglice Sistema Revelli Modello 1914', better known as the 'Fiat-Revelli', one of a string of designs from the prolific pen of the talented Betel Abiel Revelli, a Maggiore (Major) in the Italian Army. Revelli had taken out a patent in 1908 for the gun's mechanism, which is seen described so often as a retarded-blowback mechanism, in which the barrel recoils for a short distance before the bolt moves away from the breech. In point of fact, however, the mechanism is really a combination of short recoil and blow-back. Locking by wedge is so slight that the gun is not a locked-breech weapon in the true sense of the word, but is rather a hesitation pattern blowback.

Models were manufactured by the Fiat Automobile Works at Turin; hence the oft applied name, Fiat-Revelli. It was extensively tested in the US in 1911, and of course in Italy as well. The official acceptance tests in 1913 utilised a 100-round magazine. One of the gun's most unusual and interesting features is in fact the magazine, a 'mouse-trap' design which theoretically provides better flexibility than the belt-feed mechanism. In practice, however, as the mouse-trap magazines eject, they are easily dented and so rendered unservicable. This must certainly have been the case in the 100-odd mph slipstream with which the gunners of the period had to contend.

This system of magazine had one other problem - each and every round HAD to be individually lubricated before entry to the receiver. The magazine had ten compartments, each containing 5 rounds. As the contents of each compartment was expended, a rod pushed the empty magazine to the right & so presented the next compartment, in a manner somewhat akin to the operation of a typewriter carriage.

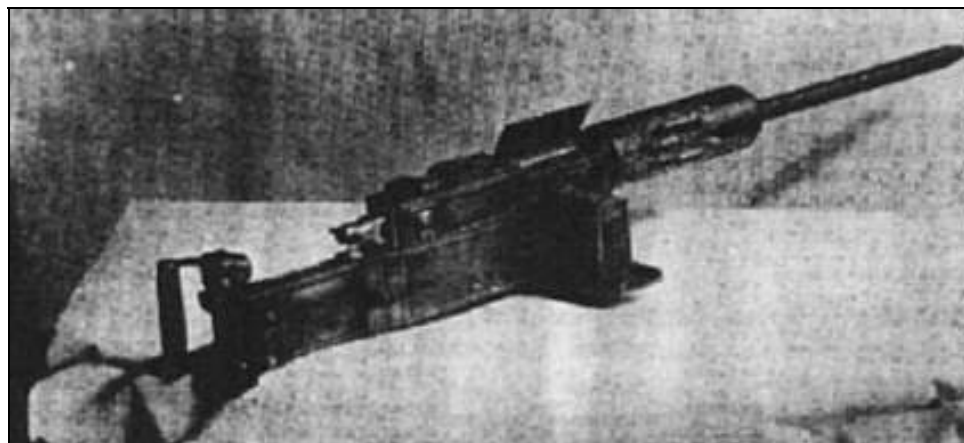
Rate of fire of the Fiat-Revelli was officially stated as 500 rpm, but many sources quote the gun as being unable to maintain this cyclic rate of fire, placing the rate at something nearer to 400-450 rpm. Major Revelli built a number of hand-made models around the end of 1908, but at the time, the Italian Army expressed little or no interests in the design. Revelli therefore formed an association with the Fiat Automobile Company because of their entry into the aviation field. Fiat produced their first aero-engine in 1906, at about the same time that Revelli was developing his revolutionary gun mechanism. They extended their production facility to include the Production of a few Revelli guns, and it was the Fiat Co. which built the guns officially tested by the Italian Army in 1911. When the war started in 1914, Fiat immediately went into mass-production of the weapon, thus ensuring continued war-time work for their factory as well as a guaranteed weapon with which to arm their factory-built aircraft.

In its original form as an infantry weapon, the gun weighed 17 kg empty. When Italy entered the War in 1915, there was a desperate need for guns for her Air Service, and the Revelli was accordingly modified with all possible haste. The removal of the water-jacket, a re-designed barrel with lengthwise ribbing, and minor mounting brackets produced a weapon that could be used immediately. The ribbed barrel was something of a bonus, producing as it did a stronger unit with a greatly increased cooling surface and, despite certain disadvantages, the 1914 modified Revelli was to remain the standard aircraft defence weapon till the cessation of hostilities in November, 1918.



Above: The original Revelli ground gun, model 1914, complete with water jacket & tripod-mounted for infantry use

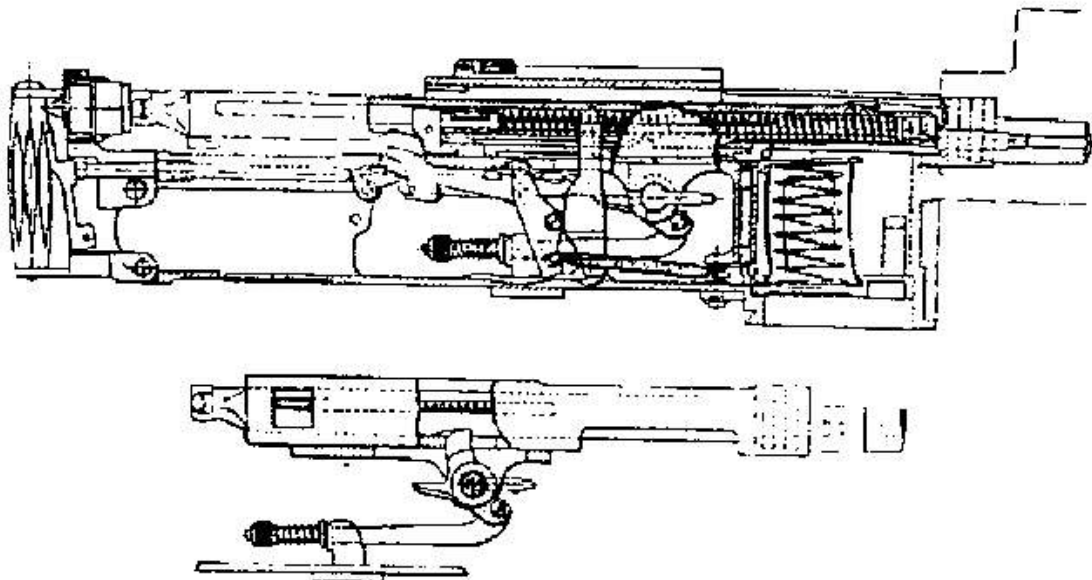
Below: The Revelli model 1914 modified for air use. Note -hinged lid of aperture above breech from which the cartridge cases were ejected.



Twin-mounted Revellis were common, and on at least one Caproni, an impressive triple-mount was fitted. Multi-mounted guns had the very real advantage of ensuring that at least one gun might remain firing in the event of stoppages in the others. Bursts could also be fired alternatively so as to extend firing time. This was a point to be considered seriously with guns of only 50 round capacity each. Such arrangements, however, were difficult to manoeuvre, specially in the case of gunners of small physique. The discharged cartridge cases also presented their own brand of problem, particularly in the case of pushers and the Capronis, as the empty cases ejected from the top of the casing, and the magazine cassettes from the right

side of the gun. A large cartridge-collecting case was designed and fitted to encase the side & top of the weapon in an endeavour to assist in the orderly collection of the spent brass, and a wind deflector hood was fitted to the left side. It was intended to shield the loading hand from the slipstream and so facilitate operation of the gun, but was a serious weight penalty, and increased the gunner's workload in heaving the mount round in the confines of his cockpit or perch.

The Lewis, by comparison, was simple to load & operate in comparison & its central magazine not only added to symmetry of the weapon (with resultant benefits in weight disposition, slipstream interference, and ease of use one-handed) but had the additional advantage of greatly increased ammunition supply (47 rounds in a single, or 94 in a twin drum). Its light cartridge-collection canvas bag also proved far more practical. However, the Revelli was a most interesting and innovative weapon, and remained in use with the Italian armed services right up till World War 2.



Italian Revelli M G

#### Technical Details & Specifications

Calibre	6.5 mm
System of Operation	Delayed blowback, Selective fire
Length Overall	45.5 ins
Barrel Length	25.75 ins
Feed Device	50-round 'mousetrap' type magazine
Sights: Front	Barley corn
Rear	Leaf
Weight	37.5 lbs (dry)
	49.5 lbs on tripod
Cyclic rate of fire	450 - 500 r.p.m.
Muzzle Velocity	2080 feet/sec