

LIGHT AUTOMATIC RIFLE



CAL. 7.62 mm

FABRIQUE NATIONALE HERSTAL
Société Anonyme

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B-4400 HERSTAL (BELGIUM)



I. INTRODUCTION

The FN Light Automatic Rifle, calibre 7.62 mm NATO, usually known as the "F. A. L." or "L. A. R.", has resulted from prolonged research and competitive trials made in various countries and under all types of climatic conditions.

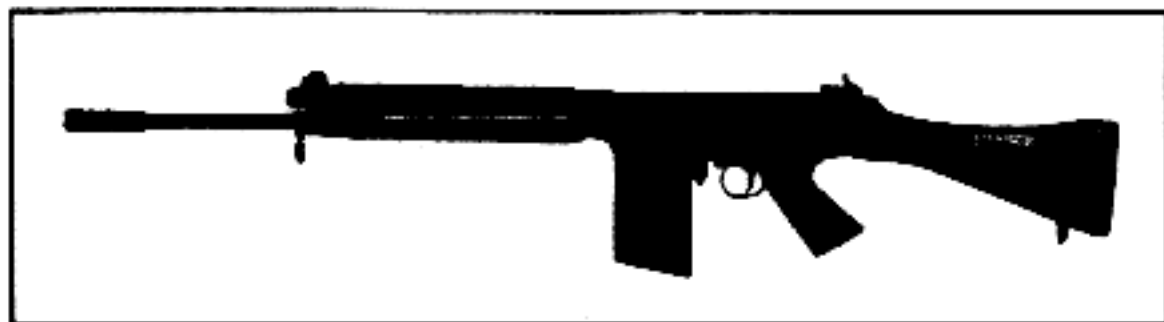


Fig. 1

This rifle, which has been adopted by many countries both within and outside NATO, was designed and made by FN to give the user a rifle which would combine all the essential qualities needed under modern fighting conditions, to a hitherto unequalled degree.

This booklet is neither for the armourer nor the specialised officer: its purpose is to familiarise the user with a weapon which is new to him and to put sufficient knowledge at his disposal to enable him to use it with maximum efficiency.

II. CHARACTERISTICS AND TECHNICAL DETAILS

The FN Light Automatic Rifle is an automatic weapon, calibre 7.62 mm NATO, gas-operated and with a breech block which is mechanically locked before firing can take place.

Rifle

1. Weights
 - a) Rifle without magazine: 4.325 kgs (approx. 9.53 lbs)
 - b) Magazine (steel) empty: 250 g ($8\frac{1}{2}$ ozs)
 - c) Magazine (steel) filled 20 rounds Ball Ammn.: 730 g (1 lb $9\frac{3}{4}$ ozs)
 - d) Barrel. approx. 800 g (1 lb $12\frac{1}{4}$ ozs)
2. Measurements
 - a) Overall length . 1,090 mm (approx. 40")
 - b) Barrel length . 533 mm (approx. 21")
 - c) Sight radius . 553 mm (approx. $21\frac{3}{4}$ ")
3. System of operation: gas, with regulator and piston.
4. Method of feed: 20-round magazine.
5. Magazine housing: underneath the receiver.
6. Ejection opening: right side of receiver.

7. Cocking handle: left side of receiver.
8. Change lever: left side of trigger frame.
9. Sights: adjustable, backsight graduated from 200-600 metres, scaled by 100 m.
10. Rifling of barrel: 4 grooves, direction—right, pitch—1 in 305 mm (1 in 12")
11. Cyclic rate of fire: 650-700 rpm.
12. Operational rate of fire, semi-automatic: up to 60 rpm.

Cartridge

1. Calibre: 7.62 mm NATO (Fig. 2).
2. Weight of cartridge: (for ordinary ball round "SS 77") approx. 24 g (0.86 oz).
3. Length of cartridge: 71 mm (2.8").
4. Weight of ordinary bullet: "FN SS 77": 9.30 g (0.33 oz).
5. Powder charge: approx. 3 g (0.1 oz).
6. Initial Velocity (V0) in the "F. A. L.": 840 m/sec (2,754 ft/sec).
7. Muzzle Energy (E0) in the "F. A. L.": 335 kgm (2,422 ft.lbs).
8. Remaining Kinetic Energy at 600 metres (656 yds): 100 kgm (723 ft.lbs).

N. B. For further technical information and ballistical characteristics, also firing tables, refer

to FN booklet for Ammunition calibre 7.62 mm NATO, or other handbook on the subject.



Fig. 2

FN 7.62 mm NATO cartridge with SS 77 bullet

III. FUNCTIONING

1. COCKING

Before firing, the breech block mechanism is forward, with the safety applied (change lever set at "S").

Insert a filled magazine obliquely in the housing under the receiver, swing it from front to rear and push fully home: the magazine is then secured in the rifle at both front and rear.

Pull the cocking handle, on the left side of the receiver, fully to the rear, then let it go forward: a cartridge is thus introduced into the chamber; the rifle is loaded and cocked.

To fire, set the change lever either at "R" for semi-automatic fire, or at "A" for automatic fire.

2. REAR MOVEMENT OF THE MECHANISM

Pressing the trigger fires the shot.

When the bullet passes the gas port in the barrel, part of the combustion gases penetrate the regulator and thence into the gas cylinder. The piston is projected to the rear, strikes the breech-block slide, which is also driven rearwards. After recoiling a few millimetres, the ramps of the slide force the rear part of the breech block to rise, thus lifting it out of engagement with its locking

shoulder in the receiver. The mechanism is then unlocked. The recoil of slide and breech block continues, the extractor removes the spent case from the chamber: extraction is completed; then the hammer, pushed by the slide, is forced to pivot to the rear.

As recoil continues, the base of the spent case contacts the ejector, an integral part of the receiver; the case is then thrown out of the gun to the right, through the ejection opening.

During this rear movement, the return springs, housed in the butt, are compressed by the slide rod, hinged to the rear of the slide.

The piston has returned to its forward position, as its spring relaxed.

3. FORWARD ACTION OF THE MECHANISM

The return springs, compressed during the rear movement of the mechanism, now relax and drive the breech block assembly forward. The breech block pushes the next cartridge towards the chamber, while the hammer is held in the cocked position by the safety sear: the front of the breech block contacts the rear portion of the barrel; the cartridge is chambered and the base of its case seized by the extractor claw.

The slide acts on the upper shoulder of the breech block and forces its rear end downwards, causing its lock shoulder to engage in the locking recess in the receiver. The mechanism is now locked.

The slide continues its forward movement alone: towards the end of its course, the safety sear is tripped by the shoulder on the rear left underside of the slide, which causes the sear to pivot and the hammer to be released; the rear end of the firing

pin protrudes beyond the rear face of the slide, when the front face of the slide is fully home.

In automatic fire, it is the safety sear which releases the hammer and thus causes the shot to be fired, because the trigger sear is not in action in this case, except for the first shot of each burst of fire.

In semi-automatic fire, it is the trigger sear which finally releases the hammer, after it has first been released by the safety sear; the mechanism has been so designed that the trigger must be released, then pressed again, to permit the following shot to be fired (see 4 below).

4. CHANGE LEVER

The lever arm can occupy one of the three following positions:

a) An uppermost position "S" when the rifle is at safe: in this position, if the trigger is pressed, it is impossible to fire because the rounded part of the change lever arm is over the trigger platform, preventing it from rising to engage the tail of the sear.

b) A front position "A", which sets the mechanism at automatic fire: before firing the rear tip of the trigger is now so positioned in relation to the deeper bent in the change lever axis that pressing the trigger causes the sear to pivot upwards: the nose of the sear is consequently disengaged from the hammer bent and firing takes place.

In addition, the nose of the trigger sear has been swung downwards so that it cannot contact the hammer, which is controlled by the safety sear only, so long as the trigger is not released; as firing depends on the safety sear, this frees