

Secret

Deputy Chief of Staff

Operational/Guidance division

Office for equipment and ordnance planning

*Urgent! I accept the conclusions in this letter
and request action be taken to implement them.*

Subject: An opinion on the Israeli-made Dror machine gun

1. Attached herein are materials on the Dror machine gun as compiled by the Office for equipment and ordnance planning. I would especially like to direct your attention to the appendix to the Dror report, which gives a clear picture of the quality of this machine gun.

2. The summary of my own personal opinion is:

a. A machine gun operating on a principle of direct recoil on the bolt and a moving barrel will always be 50-60% less effective than an automatic weapon working on a gas-piston action.

b. In the future we have to transit to manufacturing machine guns operating on the gas-piston principles. Therefore we must stop manufacturing any new series of Dror machine guns.

c. Given that production has already been completed on 60% to 70% of the parts for Dror machine guns of the second production series, and given that expenses for the second, 1000-unit series, have been over 100,000 liras, I recommend that the production of the second series be completed under the following conditions:

1) The machine gun's cyclic rate of fire must not surpass 550 rounds a minute.

2) A compensator be provided for each barrel.

3) The gun's accuracy must be comparable to that of the MG-34.

4) Two spare barrels for every machine gun.

5) The machine gun's life expectancy must be 15,000 - 18,000 rounds.

6) Twelve magazines for every machine gun.

7) An action box containing the necessary cleaning tools and spare parts must be provided for every machine gun.

8) The 16 changes included in the report and conclusions of the meeting held on 7.4.1949 must be implemented in the machine gun.

d. I must stress that, even with the improvements and requirements mentioned, the machine gun will not serve as an effective, accurate and long-lived tool for field service.

3. Before the guns are received from IMI they must be examined by the Technical Branch, which will decide whether the weapon performs to specifications.

5. I suggest that the machine guns we will receive by May-June 1950 be distributed in the following manners:

| | |
|---|-------|
| 40 Dror guns for every non-grounded Guard Corps battalion (19x40) | - 760 |
| 40 Dror guns for district schools | - 40 |
| The Frontier Troops | - 100 |
| Ordnance Branch reserve | - 100 |
| Total: | 1000 |

Shalom Eshet - Lt. Colonel,
Head of Planning Department0

Appendix to the Dror report

1. Testing of the first series in .303

a. Muzzle velocity at 730 meters per second

(The Bren gun displayed a muzzle velocity of 751.5 meters per second in the same test).

b. Accuracy and dispersal in automatic fire:

At a range of 200 meters

| Weapon type | Error (centimeters) | | Area of 50% hits (centimeters) | | % of hits per target size | |
|-------------|---------------------|--------|--------------------------------|--------|---------------------------|----------|
| | Width | Height | Width | Height | 36/44 cm | 18/23 cm |
| Besa 37 | 8,3 | 8,3 | 14 | 14 | 88 | 45 |
| Bren | 11,3 | 14.0 | 19 | 34 | 63 | 24 |
| MG 34 | 28,9 | 26,6 | 49 | 45 | 19 | 5 |
| Dror | 33,1 | 36.3 | 56 | 61 | 12 | 3 |

c. Service lifespan

The testing was based on 10,000 rounds.

Parts erosion, spring strength and group size were evaluated every 2,000 rounds.

1. Dror # 1847

This gun became unusable after 2,527 shots. Reasoning: insufficient part fit, the firearm coming apart.

2. Dror #187, errors in automatic fire at a range 800 meters

| | Width | Height |
|--------------------|-------|--------|
| After 2000 rounds | 14,9 | 16,2 |
| After 4000 rounds | 14,5 | 17,2 |
| After 6000 rounds | 17,7 | 15,7 |
| After 8000 rounds | 28,8 | 16,6 |
| After 10000 rounds | 22,4 | 29,9 |

The Ordnance Engineering Service concludes that the firearm has a service life of around 8,000 shots fired. They further note that the army has in its possession MG-34 guns that have fired over 20,000 rounds and are still in good condition.

2. Group size testing of the Dror, Bren, and MG-34 by the Central Arms Production Plant conducted on 28.2.49 The above test was performed by the plant and was a failure since

they were unable to put all their shots on the target and only included in the calculation those hits that were found on the target.

3. Testing of two firearms from Series 2 (7.92), a Bren and MG 34 (May 1949)

a) Muzzle velocity at 746 meters/second

(Bren gun muzzle velocity in the same test at 751 meters per second)

b. Accuracy and dispersal in automatic fire at a range of 200 meters:

| Weapon type | Error (centimeters) | | Area of 50% hits (centimeters) | | % of hits per target size | |
|-------------|---------------------|--------|--------------------------------|--------|---------------------------|----------|
| | Width | Height | Width | Height | 36/44 cm | 18/23 cm |
| Dror B3 | 27,4 | 25,3 | 46 | 43 | 19 | 6 |
| Dror B4 | 36,3 | 30,3 | 61 | 51 | 14 | 4 |
| Bren | 21,1 | 20,9 | 36 | 35 | 30 | 9 |
| MG 34 | 10,2 | 13,5 | 17 | 23 | 66 | 26 |

c. Service lifespan

Additional testing was not carried out, however it is increased that due to the increased recoil of the weapon lifespan has surely not increased.

4. Testing report from May regarding Series 2 Dror guns (7.92)

a) Group size

| Weapon | Range | Amount of rounds | Hits on 4' x 4' target |
|--------|-------|------------------|------------------------|
| Dror | 200 | 40 | 20 |
| MG 34 | 200 | 40 | 30 |
| Bren | 200 | 40 | 36 |
| Dror | 200 | 40 | 9 |
| MG 34 | 200 | 40 | 18 |
| Bren | 200 | 40 | 29 |

5. Testing report from July regarding Series 2 Dror gun with muzzle brakes, testing carried out by 5 instructors (regular automatic fire).

| Range | Amount of rounds | Hits on 4' x 4' target |
|-------|------------------|------------------------|
| 200 | 20 | 16 |
| 200 | 18 | 15 |
| 200 | 20 | 12 |
| 300 | 20 | 11 |
| 300 | 20 | 10 |

| | | |
|-----|----|---|
| 300 | 20 | 8 |
|-----|----|---|

6. A report of the Ordnance Engineering Service on the improved Dror (see paragraph 5) with a muzzle brake fired at 200 meters.

| Error (centimeters) | |
|---------------------|--------|
| Width | Height |
| 27,0 | 15,3 |
| 24,8 | 18,0 |