The Algerian revolution and the tools used to confront the Morice Line(1957-1962) Bengalore as a model

Pr. Djamel KENDEL. University of Hassiba Ben Bouali, Chlef (Algeria)
djamel.65kendel@gmail.com
Received: 27/12/2024 Accepted: 19/05/2025 Published:05/06/2025

Abstract :

The article addresses the challenge faced by the Algerian Revolution in dealing with the longitudinal defensive barrier that covered the Algerian-Tunisian and Algerian-Moroccan borders, stretching from the Mediterranean Sea in the north to the edges of the desert in the south. This barrier was named after the French Minister of Defense, André Morice. It posed a significant challenge, with its impact felt in military, economic, and social spheres. Consequently, the revolutionary leadership studied the line to understand its techniques and characteristics, aiming to form a deep, comprehensive, and well-informed perspective on the dangers of not effectively addressing it.

In the context of researching the issue of overcoming the challenge posed by the Morice Line, a primary and effective tool used extensively by the national liberation army was identified. From 1958 onwards, the National Liberation Army resorted to using the "Bangalore torpedo" due to its numerous and varied benefits for the revolution. Military reports from the French colonial administration frequently mentioned the repeated use of the Bangalore torpedo by the National Liberation Army, noting the times and places of its use and warning of the consequences of its continued use along the Morice Line.

****- Djamel KENDEL***

Key words:
Algerian revolution, French colonial military approach, Algerian-Tunisian border , Algerian-Moroccan border, regional isolation, Morice Line, Algerian Revolution's strategy, countering the Morice Line, Bangalore torpedo, effectiveness of the Bangalore torpedo.

ملخص

يتناول المقال،بالدراسة و البحث التحدي الذي واجهته الثورة الجزائرية،في مواجهة الحاجز الدفاعي الطولي الذي غطّ الحدود الجزائرية-التونسية والجزائرية-المغربية، وامتد من البحر الأبيض المتوسط شمالًا حتى أطراف الصحراء جنوبًا. هذا الحاجز، الذي حمل اسم وزير الدفاع الفرنسي أندريه موريس، شكّل حقيقة عقبة رئيسية بدت آثارها ملحوظة على الصعيدين العسكري والاقتصادي والاجتماعي.و في ضوء ذلك، قامت القيادة الثورية بدراسة هذه الخطوط لفهم تقنياتها وخصائصها، بهدف اكتساب رؤية شاملة ومعمقة ومدروسة جيدًا حول الخطّ المكهرب و مخاطر التعامل غير الفعّال مع هذه القضية .وفي هذا السياق ،تمّ تحديد أداة أساسية وفعّالة استُخدمت بشكل مكثف من قِبَل جيش التحرير الوطني. ابتداء من عام 1958،حيث لجأ جيش التحرير الوطني إلى استخدام "البنغالور" نظرًا لمزاياه العديدة والمتنوعة لصالح الثورة. وقد ذكرت التقارير العسكرية الفرنسية الاستخدام المتكرر للبنغالور من قبل جيش التحرير الوطني، مع تحديد الأوقات والأماكن التي تم استخدامه فيها، كما أنها لم تفوت الفرصة لتدعو بشكل سريع وتحذر من عواقب استمرار استخدامه على طول خط موريس على نحو كفيل بتوسيع نطاق التخريب.

الكلمات المفتاحية :

اندلاع الثورة الجزائرية، المقاربة العسكرية للاحتلال الفرنسي، الحدود الجزائرية-التونسية، الحدود الجزائرية-المغربية، العزل الإقليمي، تأسيس خط موريس،أهداف خطّ موريس، استراتيجية الثورة الجزائرية، البنغالور، نتائج استخدام البنغالور.

The Algerian revolution and the tools used to confront the Morice Line(1957-1962) Bengalore as a model

- Introduction:

The French military approach to the Algerian occupation was not directly linked to the outbreak of the Algerian Revolution on November 1, 1954. Rather, it dates back to the very beginning of the occupation, which began as soon as French forces set foot on Algerian soil. This approach remained a constant element within the broader strategy of the occupation, as French leaders believed it was the most effective way to thwart national liberation efforts that had been ongoing throughout the long period of colonial rule.

The French occupation leadership took steps to activate and reinforce the military option, bolstering their forces in numbers and equipment across Algeria. The goal was to encircle and isolate revolutionary areas in a way that would force them to shrink, both geographically and in terms of popular support. To achieve this, they proposed the idea of encircling the borders and isolating Algeria regionally from its vital hinterland by targeting the rear bases that supplied the Algerian revolution with weapons, ammunition, and reinforcements. These included recruits who crossed into Algeria from Tunisia and Morocco to strengthen the revolutionary movement within the country and enhance the operational capabilities of the National Liberation Army (ALN).

The central research question is: What was the context of the regional isolation of the Algerian revolution through the encirclement of the eastern and western borders via the "Morice Line"? What were its objectives, and what was its level and scope of impact? How did the Algerian revolution respond to the Morice Line, particularly in terms of tools used to mitigate the real dangers it posed to the National Liberation Army? What were the manifestations and outcomes of using the Bangalore torpedo?.

To answer this question, we adopted a historical descriptive approach, tracing events and occurrences chronologically, analyzing

their data, and investigating their trends in a way that objectively provides a scholarly interpretation of a revolutionary reality that emerged under the pressure of encirclement and regional isolation, this situation put continuous pressure on the revolutionary leadership to overcome constraints and negative consequences that posed a real threat to the effective course of the revolutionary struggle at various levels and across different areas.

1. The Military Approach of the French Occupation in Dealing with the Algerian Revolution

Following the outbreak of the revolution on November 1, 1954, the French colonial administration adopted a security-based approach, believing that this was the most effective strategic option for addressing the revolution in a serious and comprehensive manner, capable of halting its expansion and deepening its popular roots both horizontally and vertically. This approach is reflected in the statements of both politicians and military officials, who emphasized the need to bolster military mobilization in terms of both numbers and equipment in order to defeat the revolution. French Interior Minister, François Mitterrand, declared: "Algeria is France, and France can never recognize any authority other than its own." [1] Similarly, Governor General Roger Léonard described the events of the night of November 1, 1954, stating: "... several military operations were carried out by a small group of terrorists. The Governor General will take measures to calm the situation and ensure security to eliminate the criminal minority..."[2]

The French considered the number of their soldiers insufficient to achieve victory and fulfill their promises not only to the metropole but

---

[1] Alexis Bershadsky: *The Question of Henri Alleg, France at War in Algeria*, p. 15.

2 Mohamed Harbi: *1954, The War Begins in Algeria,* Complexe Edition, Paris 1998, p. 27.

also to the settlers, who were particularly alarmed after the destruction of the "Youssef" cooperative in Boufarik,[3] owned by prominent settler Henri Bugeaud, which caused widespread panic and led to settlers demanding permission to carry arms. This was reflected in the surge of applications for weapons permits[4], with the number of French soldiers in Algeria increasing from 80,000 in November 1954[5] to 175,000 by October 15, 1955. After seven months, and following the mobilization of reservists, the number rose dramatically to 355,000 by May 25, 1956.[6]

2. Defining the "Bengalor"

The Bengalor is a type of explosive charge composed of coiled metal tubes, with each tube inserted into the other and filled with an explosive substance (T.N.T.). The length of the tube ranges from 1.5

---

3 The Algerian revolution made the settlers' farms a legitimate target for its strikes across various regions of Algeria. The newspaper *L'Echo d'Alger*, in its issue dated November 2, 1954, under the prominent title "Terrorist Operations in Algeria," dedicated an article to discussing the material losses resulting from the military operations of the fighters of the National Liberation Army. It reported that at 12:50 AM, a cooperative in El-Youssef, Boufarik, was set on fire, destroying its stored goods, causing losses estimated at 25 million francs. For a more detailed account of the losses resulting from the revolution's devastating blows, see *L'Echo d'Alger* No. 1575, November 2, 1954.

4 Hassina Hamamid, *European Settlers and the Algerian Revolution 1954-1962*, 1st ed., Al-Hibr Publications, Algiers, 2007, p. 115.

5 S.H.A.T: *Introduction to the Study of the Algerian War Archives*, Château de Vincennes, Paris, 1992, p 34.

6 Mohamed Taqiya, *The Algerian Revolution: Source, Symbol, and Outcome*, translated by Abdel Salam Azeizi, Dar El-Kassabah Publishing, Algiers, 2010, p. 395.

to 2 meters, and its diameter is between 5 to 6 cm. The weight of each tube is approximately 9 to 10 kg, with the explosive material filling each meter of tube reaching 2.7 kg.[7]

The Bengalor is used in sabotage operations, placed under barbed wire to create a large gap, typically 3 to 5 meters wide. It can also be used in minefields, where it is placed on top of mines, with a fuse ignited to detonate them.[8] The danger of using the Bengalor increases with the number of coiled tubes used, as this increases the amount of explosive material. The leadership of the revolution recognized its potential and encouraged its use to achieve the desired impact on French forces, especially given the morale effect it had on the French soldiers tasked with guarding the borderlines.

3. Context for Using the Bengalor Against the "Morice Line"

The Algerian revolution's decision to use the Bengalor was driven by a strategic vision that sought to address the challenges posed by the French-imposed border closures and the regional isolation of the revolution from its rear bases, which were critical for its survival. This came more than a year after the establishment of the "Moris Line," which symbolized a major obstacle for the revolution, both militarily and logistically. The Bengalor was viewed as a tool to counteract this obstacle and lift the spirits of the National Liberation Army (ALN) as the Moris Line expanded its influence, especially in military terms.

3.1 The Moris Line: Concept and Establishment

7 *The Military Encyclopedia*, Bangalore, Arab Foundation for Studies and Publishing, Beirut, 1981, pp. 205-206.
8 Ibid .

The Algerian revolution and the tools used to confront the Morice Line(1957-1962) Bengalore as a model

The idea of closing the borders to the revolution originated with General Pedron, commander of the Oran military section, [9] who outlined the idea and its objectives. However, its actual implementation on the ground was carried out by General Lorillot, who constructed a defensive line along the 140 km [10]stretch of the Algerian-Moroccan border [11] as a trial project to assess the effectiveness of the idea.

The return of André Moris as Minister of Defense in the Monory government significantly accelerated the creation of a physical barrier, with a decision issued on June 20, 1957, [12] to construct a similar defensive line along the Algerian-Tunisian border. This line, known as the "Moris Line" after its architect, aimed to achieve the following goals:[13]

- To allow French forces to effectively monitor the borders and prevent the infiltration of weapons and fighters from Tunisia and Morocco into Algeria.
- To detect and control the movement of the fighters at the electrified border, using prior intelligence, radars, and to thwart crossing attempts while enabling rapid French military intervention.
- To isolate the Algerian revolution from its strategic rear bases in Tunisia and Morocco, which were crucial for the development and support of the revolution.

---

9 SHD: 1H2039, file no. 11, establishment of the western barrier from 1956 to the end of 1959 in the Oran Army Corps.
10 Ibid .
11 SHD: 1H2035, file no. 1, history of the barrier before the Tunisian border.
12 SHD: File No. 1, decision of 20.06.1957 regarding the construction of the barrier.
13 Ibid .

- To prevent the movement of leaders and fighters from the interior regions of Algeria to the external leadership.
- To secure key economic routes,[14] such as the railway system, which was vital for transporting goods, soldiers, and military supplies.

Mohamed GUENAD, a fighter responsible for demining in the eighth region of the fifth wilaya, stated that crossing the Morice Line was extremely difficult and costly for the revolution, as many fighters fell martyr during these operations.[15] He recounted that, in 1960, he

---

14 The National Liberation Army intensified numerous and varied attacks on the railway system, considering it a vital tool in driving and activating economic activity. Railways were used to transport various goods, military equipment, and occupation soldiers, as well as minerals from mines to ports.In this context, General Raoul Salan documented the attacks on trains, reporting 730 operations against trains and 227 against railway stations during the period from November 1, 1954, to October 31, 1957. The number of fatalities reached 100, while the number of injured amounted to 400. Given the difficult situation facing mining centers due to attacks by the National Liberation Army launched from Tunisia, the French colonial administration was forced to establish a defensive barrier around mining centers in El Ouenza, Boukhadra, and El Kouif. Efforts were also made to protect the railway lines in areas such as Oued Kebrit, Aïn Chamekh, El Ouenza, Tebessa, and El Kouif. Look at this :

- Raoul Salan, *Mémoire fin d'un empire*, Presses de la Cité, Paris, 1972, p. 288.
- SHAT: 1H2972, dossier no. 2, meeting in Bone on 26.07.1958.

15 A special interview I conducted with the freedom fighter Mohamed Guennad, known by his wartime alias "Tantano," at his home in Maghnia, on [date]. It is worth noting that the freedom fighter

crossed the electrified line from Morocco to Tlemcen(Algeria) with a battalion of about 130 fighters, but only a third of them survived the crossing,[16] with the rest martyred due to mines and the electric current.[17]

Returning to the French military archive [18]documents and oral testimonies from National Liberation Army fighters who had close

---

received specialized training in planting and removing landmines in Morocco, as part of a specialized program for deminers .Mohamed Guennad had previously crossed the Algerian borders towards Morocco, escorting other freedom fighters with him, and he also re-entered Algeria through the Moroccan border, bringing in more fighters. Due to his frequent crossings and his thorough knowledge of the Morice Line and its dangers, he became well-known among freedom fighters and the revolution's leadership alike.

16 Ibid .
17 Ibid .

18 The military archive documents preserved at the Château de Vincennes in Paris were partially declassified and made accessible to historians, researchers, and interested parties in July 1992, 30 years after Algeria regained its independence following French colonial rule (1830–1962). This is the minimum duration for lifting the restriction and confidentiality on certain documents.It is worth noting that the archival documents belonged to the Historical Service of the French Army , abbreviated as S.H.A.T. To provide an introduction to the archive center and its contents, the center published a guide in 1992 titled *Introduction à l'étude des archives de la guerre d'Algérie*.It is also significant to mention that the center houses archival documents from various branches of the armed forces, as well as other services. There is a section dedicated to the archives of the Air Force and the Gendarmerie. I personally visited the archives of the Gendarmerie, Air

knowledge of the Morice Line—whether as deminers or as part of supply convoys transporting ammunition and weapons—reveals the significant impact of the border fortifications, particularly on the military level. At the same time, it reflects the revolution's desire to deepen the psychological impact on French occupation soldiers, especially those tasked with securing and monitoring the Morice Line, regardless of the type of surveillance, which ranged from stationary to mobile and foot patrols.

Moreover, the border fortifications kept the French colonial administration preoccupied on the western and eastern borders with the task of rebuilding damaged stretches of barbed wire, thereby burdening it with additional financial and logistical responsibilities, contributing to its exhaustion.

The effectiveness of using Bangalore torpedoes is highlighted by the numerous and diverse military reports prepared on the subject, aimed at presenting on-the-ground realities to prompt urgent actions from the French colonial administration. These are supplemented by oral testimonies that candidly and consciously underscored the significant impact of the Bangalore torpedoes. Notably, these accounts include testimonies from French soldiers who were tasked with monitoring the Morice Line.

One such testimony comes from soldier Daniel Zimmerman,[19] who was well-acquainted with the Morice Line due to his assignment in Aïn Sefra,(Algeria) where he was responsible for guarding the electrified barrier. He detailed the situation, stating: *"We lived in an*

Force, and Army and reviewed some documents during May 1994. I also revisited them in 1997 and 2014.

19 An interview I conducted with soldier Daniel Zimmerman in Paris on May 20, 1994.

extremely difficult psychological state, which negatively affected our forces stationed in this region—Aïn Sefra—along the border."[20]

3.2 The Algerian Revolution's Response to the Morice Line Using the Bengalor

The leadership of the revolution realized the difficulty of the situation due to the tight border closures, especially as the French occupation expanded its defensive line and reinforced it with several plans designed to improve its effectiveness and maintain its technical integrity. [21]This prompted the revolution to study the line thoroughly, breaking down its components and analyzing it to formulate the best strategies to counter it.

The leadership focused on continuous training and formation of the National Liberation Army's fighters in specialized centers[22] that the revolution established. The training aimed at preparing the fighters for the challenges they would face while crossing the borders and identifying methods to increase the costs for the French forces. It became clear to the revolution's leadership that using the Bengalor in sabotaging large sections of barbed wire proved to be extremely costly for the French administration, both financially and logistically, given the repeated need to repair and rebuild the damaged fences.[23]

---

20 Ibid .

21 The Morice Line witnessed the emergence of numerous and varied plans, all aimed primarily at reinforcing and developing the electrified line to turn it into a genuine threat. Among these were the Lacoste Plan, the Chaban-Delmas Plan, and the Chameleon Plans. Refer to: Djamel Kendel, *op. cit.* (previous reference), pp. 165-180.

22

23 1H2959, file no. 2, *Border Incidents*.

Notably, the leadership of the revolution was calling for the use of scissors alongside Bangalore torpedoes, which not only increased but also expanded the scope of significant material losses. This demonstrated the revolution's great determination to compel the occupying army to resort to new measures[24] that, from its perspective, could provide the necessary protection for barbed wire. This was evident on the ground through a tendency to strengthen security and surveillance.

One of the fighters, Abdelmalek Ouasti, who specialized in demining, recounted that the Bengalor they used was already loaded with explosive material (TNT), as they were not trained to pack it themselves. Their task was simply to place the Bengalor under the barbed wire, inserting the tubes one by one, lighting the fuse, and moving away to avoid injury from the explosion.[25]

In the context of expanding sabotage operations along the eastern and western borders, the revolution developed a new tactic known as the "generalized operations", where large groups of National Liberation Army fighters would launch simultaneous attacks on specific geographical areas at the same time. An example of this was the attack on the western border, where an assault was launched across a 60 km stretch from Marsa Ben Mehidi to El Aricha, during which the ALN fighters created over a thousand breaches in the barbed wire using Bengalors.[26]

---

24 Mohammed Teguia, *The Algerian Revolution: The Source, the Symbol, and the Outcome*, translated by Abdel Salam Azizi, Dar Al-Casaba Publishing, Algeria, 2010, p. 392.
25 Djamel Kendel, *The Morice and Challe Lines on the Algerian-Tunisian and Moroccan Borders and Their Impact on the Algerian Revolution (1957-1962)*, Dar Al-Dhiya Publishing, Algeria, 2006, p. 276.
26 *El Moudjahid* Newspaper, Issue 6, November 1, 1958, p. 9.

The use of Bengalors proved highly effective in drawing the attention of French forces, diverting them from monitoring their lines of defense and forcing them to continually repair the damaged infrastructure. This tactic demonstrated the revolution's ability to exploit weaknesses in the French defense system and keep their forces occupied, thus weakening their control over the borders.

As a result of these operations, French military commanders, such as General Olie, issued directives noting the growing threat posed by these operations starting in February 1959, highlighting the efficiency with which the National Liberation Army conducted these attacks from Tunisia.[27]

The commander of the Oranian military division, Delequen, did not miss the opportunity, as the attacks of the National Liberation Army intensified and its sabotage operations on the Morice Line increased, to point out that the use of the Bangalore was a new tactic employed by the revolutionaries in western Algeria. It was first used on the night of September 27-28, 1958, near Jnnan Bourzek, and then gradually became more widespread. The directive added that from September to December 1958, 491 Bangalores were used, and between December 1 and December 12, 1958, 149 Bangalores exploded, [28]with an average of 12.41 Bangalores per night. This, in my opinion, indicates the correctness and effectiveness of the new direction taken by the National Liberation Army, as well as the gradual use of the Bangalore, with field observations of its impact.

What further encouraged the continued use of the Bangalore was the new strategy adopted by the Algerian revolution, which aimed at making the confrontation with the French occupation

---

27 SHD, 1H1988, *op. cit.*
28 SHD, 1H2039, file n°. 2, Note on the Use of Bangalore Torpedoes by the rebels to breach the barrier.

comprehensive. It turned towards manufacturing certain weapons and ammunition to meet its continuous needs, especially since the scope of the confrontation was vast, particularly along the eastern and western Algerian borders. Consequently, the pressure from the revolution, through diversifying military operations and expanding the field of sabotage, led to the revolution beginning to produce Bangalores in Timart, Kénitra, Morocco, in 1960, [29] alongside other types of weapons. [30]This marked a new and qualitative phase in the revolution, one that was conscious and strong, reinforcing its presence and enhancing the operational performance of the National Liberation Army fighters.

Conclusion

Through my study on the topic of Bangalore and the issue of addressing the defensive barrier, I have reached the following conclusions:

1. The leadership of the Algerian Revolution recognized the importance of supplying ammunition and weapons to enhance military operations and improve the performance of National Liberation Army members across Algeria.
2. The leadership of the French occupation resorted to intensifying aerial, naval, and ground surveillance against the Algerian Revolution to prevent it from exhausting colonial forces through various military operations.

---

29 Jazia Bakrada, "Arms Supply During the Liberation Revolution in the Fifth Wilaya (1954-1962)," *Metoun Journal*, Vol. 11, Issue 1, April 1, 2019, p. 172.

30 Among the weapons manufactured by the Algerian Revolution were hand grenades, explosive bombs, light machine guns, 60-80 caliber mortars, and mines, in addition to ammunition. Refer to Jazia Bakrada, *op. cit.* (the same reference).

3. Aiming to weaken the revolution and isolate it regionally from its rear bases in Tunisia and Morocco, as well as to disconnect the interior from the exterior and slow down the process of supplying arms and ammunition, the French occupation administration opted to seal off the eastern and western borders with a longitudinal defensive barrier. This barrier covered both the eastern and western sides through barbed wire, electrified fences, and landmines.
4. Despite the challenges posed by the border closure, the revolution exerted efforts to find solutions and alternatives to minimize losses, boosting the morale of the National Liberation Army inside the country, where the need for weapons was significant to face these challenges.
5. Alongside the electric carrier and the wire cutters, the revolution discovered another innovative and alternative tool in the form of the Bangalore torpedo. This tool proved effective in the field, especially in expanding the scope of sabotaging barbed wire fences.
6. French military reports documented chronologically and precisely the notable progress of the revolution along the eastern and western Algerian borders through the intensive use of the Bangalore. This highlighted the effectiveness of the tool and the efficient performance of National Liberation Army members, who gained substantial experience in using the Bangalore in various scenarios, locations, and times.