

# The Evolution of Heliborne Operations in the Cold War Conflicts of Algeria, Angola and Rhodesia, 1954-1979

*Stephen Rookes*

*Dr. Stephen Rookes is a research fellow at the Centre de Recherche de l'Ecole de l'air (CRéA) at Salon-de-Provence. The author of numerous published articles and monographs in French and in English, he specializes in the study of colonial and post-colonial conflicts in Africa.*

*“Confuse the enemy. Keep him in the dark on your intentions. Sometimes what seems a victory isn't really a victory, and sometimes a defeat isn't really a defeat. Whether in attacking, counterattacking, or defensive tactics, the idea of attack should remain central, to always keep the initiative.”*

Général Vo Nguyen Giap

If the helicopter's innate qualities made it a valuable asset to armed forces, its early use was restricted to enabling duties such as the treatment and evacuation of casualties (casevac) from the battlefield or the transport of supplies. Despite these somewhat humble and perfunctory beginnings, as the face of warfare became more irregular in nature it was soon realised that the qualities in question (the ability to hover, the ability to take off and land in confined areas, etc.) might be exploited so that the helicopter became a frontline actor rather than acting as backline support. This evolution taking place within a matter of years, by the end of the 1950s rotary-winged aircraft had progressed to providing air mobility for ground troops. Concurrently, engineers at Bell Aircraft were investigating helicopter gunships and by the end of 1967 had produced the first dedicated attack helicopter, the Bell AH-1 *Cobra*. Though a not so iconoclastic feature of the Vietnam War the Bell

UH-1 Iroquois or 'Huey', its development and use contributed to the Soviet Union also examining the possibility of transforming the common passenger helicopter into an assault weapon. First producing the Mi-8 in 1967, Mil then went on to create the Mi-24. Featuring prominently in the Soviet Union's fight against Afghanistan's Mujahedeen in the 1980s, by the 1990s this 'Hind' gunship could be found in Sierra Leone in the fight against the Revolutionary United Front (RUF). Piloted by a Rhodesian mercenary employed by Executive Outcomes, it defeated rebel forces almost single-handedly.<sup>1</sup> As of today, helicopter gunships such as the Eurocopter Tiger are being used by French forces in the fight against Jihadist-led terrorism in the Sahel.

It is somewhat of a paradox that both Rhodesians and French were and are still involved in latter-day helicopter operations in Africa. In effect, and along with Portugal, both Rhodesia (now Zimbabwe) and France played major role in the evolutionary process described hereinabove. To be more exact, the operations designed and / or honed during wars in Algeria (1954-1962), Angola (1961-1974) and Rhodesia (1964-1979) are still highly influential in the development of strategies implemented to combat the type of guerrilla tactics still used by insurgents in a wide range of operations including Barkhane.

While this article presents background information necessary for a contextual understanding of the three conflicts in question,<sup>2</sup> much closer attention will be given to aspects of a more logistical and technical nature. Effectively, the article divided into three separate sections, each dealing with one particular conflict, we then move on to a closer examination of what determined the choice to use helicopters frontline utilities, who made those choices, what adaptations helicopters underwent, and what purpose those helicopters served. Importantly, this article focuses on one type of heliborne operation in particular. Indeed, the emphasis will be placed on the development and implementation of envelopment manoeuvres as they provided the platform for the evolution of future rotary wing operations. Though this expository discussion forms the bulk, it appears essential that we shed also some light on a range of external, and principally, political considerations that were influential in determining the aforementioned choices. To make this more clear, our understanding of the reasons why certain types of operation, certain types of helicopter, or certain types of weaponry were used in operations is incomplete if facets of a political nature are overlooked. This is particularly true in the cases of Portugal and Rhodesia: their security forces were hamstrung by politically-determined limitations. However, we will see that the result of these limita-

---

1. La Guardia, "Airborne Adventurer Keeps Freetown Free", *The Telegraph*, 18 June 2000.  
2. The study of Portugal's contemporaneous wars in Mozambique and Guinea-Bissau has not been prioritised due to their being subject to regional considerations different from those in Angola.

tions led to more inventiveness and an unwitting contribution to helicopter warfare. An underlying theme is French association with the Angolan and Rhodesian conflicts. Indeed, closer examination of the role played by France helps us to gain a better understanding of the Cold War in Africa in the 1960s and 1970s as well as events still unfolding in the western part of the continent.

## The Case of Algeria

### The Background

Described as a “Savage War of Peace” by British historian Sir Alistair Horne,<sup>3</sup> the Algerian War of Independence (1954-1962) began on 1 November 1954 when soldiers loyal to the *Front de Libération National* (FNL) carried out a series of attacks against symbols of French rule. These attacks known collectively as the *Toussaint Rouge*,<sup>4</sup> the next major action designed to challenge French authority in this part of northern Africa was the massacre of *pieds-noirs* at Philippeville in August 1955.<sup>5</sup> Though the initial reply of French security forces was excessive,<sup>6</sup> the governor general of French Algeria Jacques Soustelle was acutely aware of the role psychological factors played in modern warfare and, after having visited Philippeville, he set about devising a plan emphasising the integration of France’s Algeria’s Muslim population within the French system.<sup>7</sup> Having carried out further attacks on urban targets that same month,<sup>8</sup> but seeing the scope for further activity repressed by the arrival of France’s 10th Parachute Division, ANL commanders decided in Soummam that the most effective military strategy was to take the war away from urban centres such as Oran, Algiers and Constantine and focus its efforts on the mountains in the Aurès and Djurdjura, or Algeria’s high plateaux and valleys. In this way, the ANL believed it could evade the French military and bolster its ranks by using local militias known as *Fellaghas* to brutalise local populations into either joining the movement

3. Horne, *A Savage War of Peace*.

4. A literal translation is “Bloody All-Saints’ Day”. Generally considered as the beginning of the Algerian War, Algerian separatists carried out a series of seventy raids against police and army outposts, and industrial infrastructures. Ten people lost their lives in the attacks.

5. The attack on Philippeville was the first major offensive carried out by the FNL. Seventy-one *pieds-noirs* (French citizens born in Algeria) were killed. Another attack occurred at El-Halia, a mining town also in the Constantine region where thirty-seven Europeans were killed.

6. Estimates on the number of dead come from FLN sources.

7. Bocca, 1.

8. Attacks included that which took place in the rue de Thèbes in August and against a cafeteria in September. The first killing 80 people, the second against a local Milk-Bar resulted in the deaths of three people.

or becoming sympathisers.<sup>9</sup> Added to these typically Maoist methods of waging guerilla warfare,<sup>10</sup> ANL strategists devised an organisational plan whereby Algeria was divided up into six regional commands, or *Wilayas*, that served as operational bases.<sup>11</sup>

As for the tactics used by the ALN, they resembled those encountered by the French in Indochina. Used unsurprisingly given that many ALN combatants had served in the Indochinese War and had first-hand experience of Maoist guerilla tactics,<sup>12</sup> the ALN chose to implement a three-phase insurgency strategy consisting, firstly, of carrying out small-scale ambushes and acts of terrorism; secondly, of carrying out more offensive actions once its own forces were large enough; and, thirdly, using conventional methods to meet the adversary head on. Despite the ALN implementing the first phase of this strategy, receiving regular supplies of arms,<sup>13</sup> and using Tunisia and Morocco as additional operational bases, as of 1956 France enjoyed an overwhelming military superiority over the FLN.<sup>14</sup>

### **The French Reaction**

Gaining military superiority over such a short space of time can be explained by the fact that French strategists realised that modern warfare was an interlocking system of political, economic, psychological and military actions designed to overthrow one regime and replace it with another.<sup>15</sup> Consequently, as illustrated by the Soustelle Plan, a significant effort was made to persuade Algeria's indigenous population that the French rather than the regime advocated by the FLN was the most preferable of the two and that France would provide its needs. A second step was convincing Algeria's population that the FLN was the enemy, and demonstrating that any attempt to impose a regime by force would be met with superior force. Stages in this process included the recruitment of a home-grown, pro-French military force known the *Harkis*,<sup>16</sup> and swamping Algeria with hundreds of thousands of metropolitan troops. Numbering nearly 400,000 by 1957, these played a decisive role in securing the Algerian capital, Algiers and its surrounding areas.

---

9. Though used by the French in Algeria, the term was considered as pejorative. The FLN typically used the term 'junud' to describe its foot soldiers, 'mujahideen' to describe its elite troops, and 'musubilan' to describe auxiliary units. Meynier, 154-160.

10. For more on these methods see, Mao Tse-tung, *On Guerilla Warfare* (1937).

11. The areas covered by each Wilaya is as follows: Wilaya 1 (Aurès-Nementchas), Wilaya 2 (North Constantine), Wilaya 3 (Kabilyia), Wilaya 4 (L'Algérois), Wilaya 5 (L'Oranie), and Wilaya 6 (South Aumale).

12. Shrader, 146.

13. In 1954, the Arab League of States made a commitment to assist other Arab states to gain independence. Cairo became one of the main hubs for the transfer of weapons into Algeria.

14. Galula, 68.

15. Trinquier, 5.

16. Estimates put the number of Harkis at some 300,000. "After 40 years of suffering and silence, Algeria's 'Harkis' demand a hearing", *Irish Times*, 31 August 2001.

This battle of the Casbahs forcing the FLN further into Algeria's more rural zones,<sup>17</sup> French authorities also initiated a series of measures to ensure that the FLN found it difficult to recruit rural inhabitants. Indeed, Soustelle set up Special Administrative Sections (SAS) in 1955 as part of a hearts and minds programme, and increased the number of security forces serving in remote areas.<sup>18</sup> Further organisational measures came through the *quadrillage* system. A system whereby urban as well as rural areas were divided up into geographical zones in which counter-terrorist operations could be organised on a local level enabling a faster reaction time when enemy activity had been detected. Efforts were also made to secure Algeria's borders from infiltration from Tunisia and Morocco. This was achieved on the eastern border through the construction of electrified fences known as the Morice and Challe lines completed in 1957 and 1959 respectively. Carrying as many as 5,000 volts and 2.5 metres high, each line was equipped with state-of-the-art electronic detection systems, radars and searchlights making crossing into Algeria almost an impossibility. Moreover, the placing of anti-personnel landmines along the perimetres of the lines ensured that the FLN's operational areas were limited to Algerian soil. Thanks to the addition of the French Navy patrolling the Mediterranean, the French therefore managed to stem the flow of weapons on to the battlefield.

### The Development of Heliborne Operations in Algeria

The implementation of the *quadrillage* system and the implantation of the Morice and Challe lines represented the beginning of a heyday for French aviation and, in particular, rotary wing operations in Algeria.<sup>19</sup> The process towards transforming the helicopter from auxiliary to central actor began in the Korean War and the Malayan Emergency with the French realising the potential for helicopters to provide air mobility for ground troops. Effectively, they had witnessed how US Marines had been transported into battle aboard Sikorsky S-55 "Chickasaw" during the Korean War,<sup>20</sup> and had gained first-hand experience of heliborne insertion operations through the assignment of one of its higher-ranking officers, Déodat du Puy-Montbrun, to the British Special Air Service in Malaya in November 1952.<sup>21</sup> These experiences prompted the French Army into commissioning a study in December

17. For more on the Battle of Algiers see, Aussaresses, 2002.

18. Those tasked with the day-to-day running of Special Administrative Sections were known as 'kepis bleus'. They were supported by local Moghazni auxiliaries.

19. At first the French Army used a *ratissage* system whereby tanks, artillery and sometimes aviation was used to unearth enemy combatants from their hideouts in the Aurès Mountains or in Kabylia. Inflicting some losses, once operations were over, these enemy combatants would simply return and start all over again. A side effect of this strategy was that Algerians who supported the French were targeted for assassination thus encouraging other Algerians to join the FLN rather than suffer the same fate. The *quadrillage* system was an attempt to secure defined sectors of Algeria so as to eliminate insurgent activity and to reduce the recruitment of local populations into the ranks of the FLN. Alexander and Keiger, 15.

20. "Coalition Air Warfare in the Korean War, 1950-1953".

21. See Brault.

1953 whose goal was to examine the effectiveness of heliborne operations in irregular warfare.<sup>22</sup> Along with similar investigative studies carried out by strategists of the French *Aviation Légère d'Observation d'Artillerie* (ALOA) late that year, the results of the studies indicated that vertical takeoff and landing (VTOL) aircraft could indeed play an important role in the different phases of modern warfare. More specifically, the particularities of the helicopter meant that it could be used for the vertical envelopment of enemy forces,<sup>23</sup> infiltration missions, to transport troops quickly into hot zones or to establish a bridgehead in enemy territory.<sup>24</sup>

In terms of how these lessons and innovations were implemented in the Algerian War, the French began to codify, organise and optimise their rotary wing operations.<sup>25</sup> The first step, therefore, was to revise the structure of the centralised 5th Air Region and to break it down into smaller units, while the second consisted of overhauling an ageing aviation stock.<sup>26</sup> These smaller decentralised air regions being called *Groupes Aériens Tactiques* (GATACs),<sup>27</sup> to speed up reaction time and to increase flexibility, a sub-division of these five larger units were advanced air commands. These units were initially made up of *Escadrilles d'Aviation Légère d'Appui* (EALA) using Harvard T-6s, MS.500s or Trojan T-28Ds, but with the creation of *Détachements d'Intervention d'Hélicoptères* (DIH) and *Groupements Mobiles d'Hélicoptères*, this fixed-wing stock was complemented with the purchase of around 300 helicopters. Which type of helicopter in each unit depended on whether it was commanded by the *Aviation Légère de Terre* (ALAT), or by the *Armée de l'air*.<sup>28</sup> Additionally, the French set up refueling and rearmament points throughout the GATACs.<sup>29</sup> This was an important aspect given that if a helicopter was lighter with fuel it could carry more men, the dispersed location of DIHs and refueling points meant that helicopter units and commandos

---

22. British helicopter operations in Malaya also had a significant influence over France's choice to turn to the use of rotary wing aircraft for air mobility. In November 1952, French colonel Déodat du Puy-Montbrun served with the British Special Air Service (SAS) in Malaya. Here, he took part in heliborne operations in the jungle earning the King's Medal. See Brault.

23. Rapport des missions en Corée et au Japon, «Etude des formations d'hélicoptères de l'armée de Terre américaine», December 1963, quoted by Gaujac, 66.

24. Bos, 448.

25. Shrader, 77.

26. At the outbreak of war in 1954 the French Air Force was equipped mainly with air defence, ground attack and liaison aircraft. Aircraft included SE.535 Mistral jets, F-47 Thunderbolts, Vautours, Mystère IVAs attached to *Escadrilles de Chasse* or fighter squadrons (EC); AAC.1 Toucans and C-47s attached to *Escadrilles de Transport* or transport squadrons (ET); and Caudron C-445s and Martinets attached to liaison and observation squadrons or *Escadrilles de Liaison et d'Observation* (ELO).

27. The GATAC system had already been used in Indochina. As for Algeria, GATAC 1 covered the Constantine region; GATAC 2 covered the area around Oran; and GATAC 3 covered three areas around Algiers (Orléansville, Tizi-Ouzou and Aumale).

28. The French Army operated only four helicopters before June 1955 but by 1959 it possessed sixty-four Vertol H-21Cs; nine Sikorsky H-19s; thirty-eight Bell H-13s; and twenty-nine Alouette IIs. Bourgeois, 1987 as quoted in Shrader, 121. During this period, the Air Force operated Eighty H-34s, twenty-five Alouette IIs and a number of H-13s and H-19s, while Flotilla 31 of the French Naval Aviation operated thirty-six H-21s, H-5s, H-19s and H-34s.

29. Peterson, Reinhart, and Conger, 31.

could be placed on a fifteen-minute alert or even five minutes if enemy activity was on the increase in a given area.<sup>30</sup>

Though Colonel Marceau Crespin of the ALAT can be credited with increasing the mobility of the French Army by using Piasecki Vertol H-21Cs<sup>31</sup> as troop carriers as early as May 1955,<sup>32</sup> two colonels in the French Air Force can be considered to having been central in the development of the helicopter from mere armed troop carrier to veritable assault weapon. The first, Colonel Felix Brunet was the commander of the *Escadre d'Hélicoptères 2* (EH2) at Oran-La Sénia,<sup>33</sup> while the second, Colonel Alexis Santini was the commander of the Helicopter Training Division from 1956.<sup>34</sup>

His motto being “*Combattre et sauver*” or fight and rescue, Brunet’s experimentation with arming helicopters began as early as 1955 after an episode that saw ground troops pinned down in the Aurès mountains. Piloting a Bell H-47, Brunet had the idea of placing a man in each of the helicopters casualty panniers so that they fire on the enemy as the aircraft circled.<sup>35</sup> The enemy defeated using this strategy, but the Bell being vulnerable to enemy fire, Brunet, aided by Captain Emile Martin, set to work on designing a weapons system for a Sikorsky H-19 Chickasaw.<sup>36</sup>

30. *Ibid.*, 34.

31. In this respect, Crespin played an indirect role in determining the future of the helicopter as a France. Effectively, in late 1956, the Vertol Aircraft Corporation undertook a study commissioned by the French Ministry of Defence to evaluate the role of the H-21C. France. National Defence Committee for Scientific Action, Operations Research Group, “Report of the Operations Research Mission on H-21 Helicopter Operations in Algeria”, 1957, as quoted in Shrader, 77.

32. This operation consisted of a detachment of four helicopters transporting 3rd Foreign Parachute Battalion troops to Mount Chéla. «L’aviation légère de l’armée de Terre dans la guerre d’Algérie (1954-1962): organisation et emploi», defence.gouv.fr, 22 November 2017.

33. Brunet took over this role from Déodat du Puy-Montbrun.

34. Nicknamed “*Le Sanguin*” or the “Fiery One”, Alexis Santini commanded liaison squadron (escadrille de liaison) or ELA 52 in Indochina. Operating Hiller 360s, Santini was the husband of Valérie André, a fellow helicopter pilot and the first woman to become a General in the French Air Force.

35. Facon, 327-341.

36. The H-19 carried a 20mm Matra cannon, two .50 calibre machine guns, and a 7.5mm light machine gun. The H-19 found to be unlikely to be able to bear the weight of heavy machine guns needed for ground attacks, Brunet turned towards Sikorsky’s more powerful H-34 Choctaw. The choice of helicopter made the next stage was to find the weapons most suited for carrying out ground attacks. One concern was that the traditional axial weapons already available would reduce the speed of the H-34 so weapons specialists fitted a lighter, tubular gun carriage to an MG 151 cannon, a German-manufactured 20mm weapon used by the Luftwaffe in WWII. However, not possessing a recoil damping mechanism and its size limiting the capacity to stock ammunition, the gun carriage was finally replaced with a modified carriage mounted on a rubber-cushioned inertia plate and using a recoil brake system. The initial weapons configuration was for the cannon to be mounted in the cargo doorway while a Browning 12.7mm 6P50 machine gun was placed in the right-hand side port. Later modifications included replacing the modified MG 151 with an Oerlikon 20mm cannon, and mounting rocket launchers on the starboard and port platforms. This weaponry composed of 6 LRAC 73 anti-tank missiles, a pod containing 12 SNEB air-to-ground 68mm rocket projectiles were placed underneath. Armament such as this carried on both sides on the aircraft led to it being nicknamed the Mammoth.



Santini's contribution to the development of heliborne operations came through his having the foresight to use Sikorsky's H-34 instead of the H-21C used by the ALAT. Indeed, the H-21C, or "Flying Banana" lacked the performance and manoeuvrability needed in ground attacks,<sup>37</sup> making it unsuitable for operations such as vertical envelopment. A tactic consistently used in a wide range of future conflicts, vertical envelopment consisted of using an armed H-34 (nicknamed the "Pirate") to make strafing runs over an area of enemy activity or to disperse *Katiba* (platoon) sized units while other H-34s (nicknamed "Auroch") would land and offload a cargo of paratroopers and / or Foreign Legion soldiers known collectively as the *réserve générale*.<sup>38</sup> Forming a ring around the enemy, the objective of an envelopment operation was to take the enemy by surprise, engage him in combat, and to cut off his means of escape. Often preceded by jets showering an area with cluster bombs and followed by search and destroy and sweeping operations carried out by troupes de secteur (sector troops), vertical envelopment tactic proved to be particularly effective after the introduction of the Challe Plan in February 1959.<sup>39</sup> An Air Force General, Challes's plan was to put in place an all-encompassing and unified strategy to simultaneously defeat the ANL and win over the general population.<sup>40</sup> In asphyxiating the movement of the enemy, it resulted in one of France's most successful periods of the Algerian War in terms of military gains. In the end, though, military dominance amounted to nothing as France grew tired of a conflict that was costly in lives and money.

---

37. "Report of the Operations Research Mission on H-21 Helicopter Operations in Algeria".

38. The Alouette II and the Vertol often added to support in vertical envelopment operations. Entering into service in Algeria in 1957, the Alouette II could be fitted with air-to-ground AS-11 wire-guided missile. Designed by Nord Aviation, this type of weapon was very effective against rebels that had taken shelter in the caves of the Aurès mountains. Previous attacks using T-6s dropping napalm had failed to reach the inner-depths of the caves.

39. The Plan Challe was created alongside the Plan de Constantine. This envisaged a five-year economic plan that included the redistribution of land, agrarian reform, funding for education, and the creation of low-rent housing. Horne, 310-311.

40. Canuel, 8.

If the Evian Accords signed on 18 March 1962 drew the Algerian War to a close, the development of the helicopter as an assault weapon continued in the central African country of Angola where the military capabilities of Portugal's security forces would be tested by three armed movements all intended on ridding any trace of colonialism.

### The Case of Angola

Whereas Portuguese ruler Antonio Salazar had so far refused to bow to international pressure on the question of Angolan independence and had even amended its constitution so that overseas territories were considered as *de facto* provinces, the recent independence of several African countries and the use of arms to achieve this objective led Portugal's military authorities to believe that the advent of insurgency in its own colonies was inevitable. Consequently, by 1959 they had begun to make preparations to mount an effective counterinsurgency strategy. A start was made when six Portuguese officers were sent to the *Centre d'Instruction de Pacification et Contre-Guérilla* at Arzew in Algeria to study French efforts in countering insurgency.<sup>41</sup> It was an inauspicious start, however, as the report these officers presented on their return to Lisbon warned that Portugal was ill-prepared for irregular warfare and that immediate action should be taken to address the issue.<sup>42</sup>

As was the case with France, Portuguese commanders had recognised that the ability to deploy air power was an essential aspect of any strategy designed to keep insurgents at bay and stop them from keeping the initiative on the battlefield. Concurrently with sending its officers for instruction in Algeria, then, in 1959 the *Força Aérea Portuguesa* (FAP) moved several C-47 transporters and PV-2 Harpoons to Luanda,<sup>43</sup> and Portuguese authorities ordered the construction of two new airfields the following year.<sup>44</sup> The fear that Angolan nationalists would soon turn to the use of arms was cemented in March 1961 when a movement calling itself the United Peoples of Angola (UPA) launched a series of attacks against Portuguese settlers in northern Angola.<sup>45</sup> The Portuguese military responding to these attacks by deploying troop-carrying DC-3s and Beechcraft 18 spotter planes to complement the FAP's existing fleet, official Portuguese forces were backed up by the conversion of civilian aircraft and the creation of a civilian unit called

41. Heggoy, 176, in John Pearce Cann, "Portuguese Counterinsurgency Campaigning in Africa, 1961-1974: A Military Analysis", 98.

42. Cann, *Ibid.*

43. Flintham, 113.

44. Niccoli, 1998, in Corum and Wray, 275.

45. Portuguese forces responded to these attacks by bombing villages in the Icolo e Bengo and Baia de Cassange regions. Sources state that 17 villages were destroyed killing 20,000 people. Heywood, 315.

the *Formações Aéreas Voluntárias* (FAV).<sup>46</sup> Comprised of Piper Clubs and Auster D.5s, the FAV flew a number of sorties over the coming months firing handguns from the cockpit windows of the aircraft.<sup>47</sup>

The next step taken to increase Portuguese air power came when two army battalions and two operational air squadrons (Esquadra 91 and 93) were transferred to bases around the Angolan capital, Luanda. The aircraft of these two squadrons consisting of F-84 Thunderjets and Harpoon P-V2s, in May 1961 the FAP attacked enemy positions in the Dembos Mountains using fragmentation bombs and napalm supplied by the United States Air Force.<sup>48</sup> Following these raids, the first paratroop operations took place in August in the Uíge Province (northwestern Angola).<sup>49</sup> These operations intended to disperse concentrations of rebels holed up in urban areas and to force them into the countryside, it is significant that this point that the FAP increased the diversity of aircraft at its disposal by adding Alouette IIs and Dornier 27s.<sup>50</sup> These were based at Luanda's *Base Aérea 9*, at *Aérodromos Base 3* in the Uíge Province, and at *Aérodromos Base 4* at Henrique de Carvalho in northern Angola's Lunda Sul Province.<sup>51</sup> The decentralisation of air operations being one element that modified Portugal's approach to the conflict, events taking place outside of the country were to lead to the FAP acquiring an updated version of the Alouette II and building on the innovations introduced by France in Algeria. The first major event was the support given to the National Front for the Liberation of Angola (FNLA) by the People's Republic of China (PRC) from 1964,<sup>52</sup> while a second was the direct intervention of South Africa in 1966.<sup>53</sup>

South African involvement in Angola is crucial to understanding why and how Portuguese forces were able to introduce the use of envelopment tactics into its overall air strategy. The story starts with the creation in March 1966 of a third nationalist party in Angola, the National Union for the Total Independence of Angola (UNITA), and continues with this movement's links to a nationalist movement in South West Africa (SWA), the South West Africa

---

46. Flintham, 124.

47. *Ibid.*

48. Marcum, 229.

49. Flintham, 114.

50. The Dornier 27 was a short takeoff and landing (STOL) aircraft particularly useful for casevac operations.

51. Flintham, 114.

52. In 1962 the UPA merged with the Democratic Party of Angola (PDA) to form the National Front for the Liberation of Angola (FNLA). Its leader, Holden Roberto then established the Revolutionary Government of Angola (GRAE). 1962 is also the year when the Sino-Soviet split became official. The PRC supplied weapons and military advisors to the FNLA. MacDonald, 56.

53. Cuba also supplied weapons and training to Amílcar Cabral's PAIGC, the African Party for the Independence of Guinea and Cape Verde. The first supplies of Cuban weapons arrived in April 1965. In July and August of that year these weapons were supplemented by the arrival of more than 500 Cuban soldiers. George, 27.

People's Organisation (SWAPO). Having been appointed to administrate the former German colony of South West Africa in 1915, South Africa was keen that Angola remain free of communist-inspired insurgency lest this have a direct influence on the internal affairs of South Africa itself. The ruling National Party's domestic policies were already being challenged by the African National Congress (ANC), so what it did not want to see was any further challenge aided and abetted by regional nationalist movements that made maintaining stability even more complicated. Despite these wishes, and the desire that SWA act as a bulwark against communism,<sup>54</sup> 1960 saw the emergence of a socialist and Marxist-Leninist inspired movement intent on causing as much disruption as possible for South African security forces and gradually forcing South Africa so as the country could become an independent nation.

Whereas SWAPO's activities were mainly restricted to those of a more political nature in the years immediately after its formation, in late 1966 its armed wing, the South West African Liberation Army (SWALA),<sup>55</sup> clashed with South African Police counterinsurgency forces at Omgulumbashe in northern Namibia. The result of this confrontation being a overwhelming victory for security forces, it nonetheless confirmed suspicions that guerilla activity in the area was on the increase and convinced the authorities that security measures would have to be reinforced.<sup>56</sup> There was, however, a particular geographical issue linked to ensuring that the SWALA did not gain a foothold in the area. Indeed, the groups principal operational zones centred on a slice of land called the Caprivi Strip. While this was not a serious issue in itself, what was problematic for security forces was that the strip bordered Angola, Botswana, and Zambia. The Portuguese not having complete military authority over Angola and both Botswana and Zambia now independent nations,<sup>57</sup> their proximity to the Caprivi Strip meant that SWALA forces could easily find refuge after having carried out attacks. Here, a kinship that had developed between UNITA's Jonas Savimbi and the SWAPO's Sam Nujoma proved to be mutually beneficial to both movements. In effect, SWAPO provided weaponry to UNITA,<sup>58</sup> while the latter provided food and shelter for SWALA units passing through UNITA territories to attack or flee South African security forces.<sup>59</sup>

Until its security forces intervened in 1966, as mentioned above South Afri-

54. Botswana gained its independence in June 1966; Tanganyika became Tanzania in 1961; and North Rhodesia became Zambia in 1964.

55. SWALA changed its name to become the People's Liberation Army of Namibia (PLAN) in 1973.

56. Campbell, K. 130.

57. Zambia gained its independence from the United Kingdom in 1964. Botswana, another British colony, became independent in 1966.

58. Amukwaya Shigwedha, 1275-1287.

59. Campbell, H. 12.

can security forces had not intervened directly in the Angolan conflict. Indirectly though, since 1961, the year when South Africa became a republic, it had sought to increase ties with remaining colonial powers not just because it became the subject of a UN arms embargo, but also because it wanted to establish stronger ties with like-minded nations involved in the fight against the spread of communism. As for the weapons, South Africa signed an agreement with France resulting in the delivery of 7 Alouette IIs, 33 Alouette IIIs, and 16 Mirage jet fighters,<sup>60</sup> and as for links with remaining colonial powers it approached Portuguese authorities. In July 1961, in effect, the South African Minister of Defence J.J. Fouché visited Lisbon to discuss the possibility of a cooperation between the FAP and the South African Air Force (SAAF).<sup>61</sup> Followed closely by further discussions in April 1962 to look at the possibility of establishing a radio communications network between the two countries,<sup>62</sup> in November 1963, Angola's State Defence Police (PIDE) began to provide South African secret services with intelligence linked to SWAPO incursions taking place along SWA's border with its northern neighbour.<sup>63</sup> Cooperation between South Africa and Portugal continued with an agreement to share intelligence, and in 1964 it led to transfers of a more unsophisticated nature when Portuguese officials requested that South Africa supply spare parts for their Alouette IIIs.<sup>64</sup> Just as the H-34 had a impact on the ways French forces could meet the challenge of a highly mobile and elusive enemy in Algeria, the addition of Alouette IIIs to Portugal's war effort was telling when it came to developing tactics for use against FNLA insurgents in northern Angola and against the MPLA's military wing, the People's Armed Forces of Liberation of Angola (FAPLA), when it moved its operational bases from Cabinda to the Bié Plateau just east of Luanda.<sup>65</sup>

---

60. «Visite du Ministère de la Défense, Le Cap, 12 juin 1961».

61. NARS, BTS, Box 74/29 (F1), Burgerlike Lugvaart en militêre verbindings. B: 02.10.61/E: 12.11.64. Letter from Portuguese army and air attaché in South Africa, Pretoria, 2 October 1961, in Correia and Verhof, 58.

62. NARS, BTS, Box 74/29 (F1), Burgerlike Lugvaart en militêre verbindings. B: 02.10.61/E: 12.11.64: Top secret letter from Secretary for Foreign Affairs – Secretary for Defence, Cape Town, 9 April 1962, Ibid.

63. AHD, PAA 58: Política Externa e Interna da África do Sul. Acção desenvolvida pela SWAPO: Secret document Informação No 606/SCCI/Assunto: Actividades Terroristas da SWAPO – South West African Peoples Organization', 2 November 1963, in Correia and Verhof, 59.

64. NARS, BTS, Box 1/22/5, Vol 2, Angola: Defence. B: 05.04.61/E: 29.11.67: Secret letter from South African Consul General, Luanda – Secretary for Foreign Affairs, Pretoria, 14 September 1964, Ibid.

65. In 1965, MPLA leaders decided to move its operations base to Zambia. Zambian authorities permitted the unrestricted transit of weapons through their territory and allowed liberation movements to broadcast through the Zambian Broadcasting Service (ZBS). This was because Zambia was a major supporter of the OAU's desire to support liberation movements, and believed that armed struggle needed to be backed up by an effective propaganda machinery. From 1973, the ZBS set up the "War of Words Channel" and allotted 45-minute slots to liberation movements in Angola, Rhodesia, South West Africa and South Africa. Chongo, 10.

Sud Aviation's Alouette SA.316A and SA.316B versions proved themselves to be far more capable than their predecessor the Alouette II. For a start its Turbomeca Artouste IIIB turboshaft produced 870 hp compared to the Alouette II's 530 hp. The Alouette III could carry six passengers as opposed to the Alouette II's four, and what is more it was able to cruise at a higher speed (210 km/h compared to 185 km/h). Added to the passenger capacity was the possibility of carrying a heavier payload. These aspects were essential when it came to the question of providing infantry soldiers with rapid and relatively safe access to insurgent operational areas. Before, transport carrying aircraft were subject to the variables that could affect paratroop drops (injury on landing, missing landing zones, etc.), but by using VTOLs landing zones (LZs) could be pin-pointed so as to ensure a safer and quicker arrival in areas where enemy activity had been detected.



DK

The development of helicopter tactics used by the FAP in Angola and Portugal's other overseas territories went through a similar process to that witnessed in Algeria. There were concerns linked to the vulnerability of helicopters to ground fire especially in the landing and recovery phases, so a priority for Portuguese technicians was deciding which type of weapon was best suited given its weight and the effect it would have on the helicopter's motion. After a number of unsuccessful attempts using hand-held Armalite AR-10s, Mauser MG-42s, and Browning M3s, it was decided that the most suitable option for the provision of heavy firepower was to use the French-manufactured Matra MG-151 cannons. Used by the ALAT on the H-21C and by the *Armée de l'air* to arm H-34 "Pirates", the MG-151 was a particularly effective option given its high rate of fire (680 to 740 rpm).<sup>66</sup>

<sup>66</sup>. The Vektor GA-1 was also used by the Portuguese. A variant of the MG-151, the SADF used another variant produced by Denel.

Whereas Portugal's connections with South Africa meant that the FAP acquired thirteen more Alouette IIs in 1968,<sup>67</sup> a typical Portuguese heliborne operation consisted of using a flight of five helicopters to insert sections of four men into areas where enemy activity had been detected while using a helicopter gunship (nicknamed the *heli-canhão*) to provide covering fire.<sup>68</sup> If it was decided that tactical operations were needed to clear a particular area, the FAP would firstly use a Dornier to survey the terrain in order to calculate which zones presented optimal conditions for a surprise attack. Usually, this comprised of finding terrain that would provide visual cover for the arrival of five helicopters and drown out the noise of their rotors. With the FAP's helicopter squadron (*Esquadra 93*) kept on standby at bases in Luanda (BA9) and other locations, once a formation had been deployed its arrival at a LZ would be preceded by the gunship which would make strafing runs of a given area and clear the way for the troop carriers. Often accompanied by a second formation of helicopters plus support aircraft such as the Dornier 27, envelopment tactics were followed by sweeping operations that could last for some days after operations began.



Although the addition in 1969 of SA-330C Puma helicopters meant that Portugal was better equipped to meet the demands of modern counterinsurgency warfare, by 1968 the cost of its wars in Angola, Mozambique and Guinea-Bissau amounted to around \$300,000 per day and represented around 50% of Portugal total annual budget.<sup>69</sup> And, while in Angola Portuguese forces continued to mount large-scale military operations in 1970 (operations *Zaga* and *Zumba*) and in 1972 (Operation *Attila*), domestic concerns over the policies of the *Estado Novo* regime led to Prime Minister Marcello Caetano being overthrown in a military coup. Replaced in the aftermath of

67. ADN, File 2732.2: Top Secret secret letter, South African Defence Minister, Cape Town - Portuguese Defence Minister, Lisbon, 17 May 1968, in Correira and Verhof, 60. In total, the FAP acquired 118 Alouette IIIs. Baxter, 48.

68. Cann (2015), 242.

69. Wheeler, 425-439.

the Carnation Revolution by General Antonio de Spínola, negotiations at Alvor, Portugal in January 1975 led to Angola obtaining its independence in November of that year. In spite of Portugal's adoption of the tools of modern war, ultimately, and in a similar fashion to what ended the Algerian War, the battle to hold on to colonial possessions was lost not in the field but on the streets of metropolitan cities such as Lisbon.

### **The Case of Rhodesia**

Despite Harold MacMillan's "Wind of Change" having blown across most of Africa granting independence to a majority of its nations,<sup>70</sup> by 1965 the white minority regime that governed the British colony of Southern Rhodesia (now Zimbabwe) still refused to bow to international pressure and extend the franchise to the majority. Dissent had been growing amongst the indigenous population leading to isolated instances of civil obedience, but by and large the ruling Rhodesian Front (RF) remained untroubled by any significant attempt to dislodge it through armed force. Two aspects of the contemporary political context in southern Africa strengthened the RF's resolve. One was the massacre of whites during the Mau Mau uprising in Kenya in the 1950s, while the other was the election of the Labour Party in Great Britain, a party unsympathetic to the continuation of white minority rule. In order to avoid what was seen as interference in Southern Rhodesia's internal affairs, on 11 November 1965 Prime Minister Ian Smith issued the unilateral declaration of independence. At a stroke, all political links to Great Britain were severed and Southern Rhodesia became Rhodesia.

In terms of armed challenge to the Rhodesian government, as in many other colonies its roots were to be found in the growth of Black political activism of the 1950s. In Rhodesia, activism came through organisations such as the Southern Rhodesia National Party (SRNP) in 1957, which then morphed into the National Democratic Party in 1960 (NDP), and two opposing parties the following year. The first was the Zimbabwean African People's Union (ZAPU) led by Joshua Nkomo, while the second was the Zimbabwe African National Union (ZANU) led by Robert Mugabe, Herbert Chitepo and the Reverend Ndabaninji Sithole.<sup>71</sup> Throughout what would become known as the Rhodesian Bush War, both received support either from the USSR and China along with a variety of radical African regimes and the OAU.

---

70. On 3 February 1961, British Prime Minister Harold Macmillan (Conservative) addressed the Parliament of South Africa stating that his government would not seek to impede the independence of African countries still under British rule. This address is often referred to as the "Wind of Change" speech.

71. Both the ZAPU and the ZANU had armed wings. There were the Zimbabwe African National Liberation Army (ZANLA), and the Zimbabwe People's Revolutionary Army (ZIPRA), respectively.

Facing these groups was one of the most powerful armed forces in the region. Three battalions of infantry were created in 1948 following a general strike and a revision of Rhodesia's military capacity. Whereas one of these battalions became the Rhodesian Light Infantry (RLI) in 1961, two other units created in 1961 were C Squadron of the Special Air Service (SAS), and an armoured car squadron named the Selous Scouts. In 1973, the Selous Scouts became a specialised counter-insurgency unit composed of both black and white Rhodesians. Another unit was the Rhodesian African Rifles (RAR) recruited from the black African population. Created in 1940, the RAR had fought in Burma during WWII and, along with the South East Asia Volunteer Unit (later C Squadron SAS) took part in operations against Communist insurgents during the Malayan Emergency. The RAR also played a role in the 1956 Suez Crisis when they assisted British and French forces, and in Rhodesia the regiment was often used to suppress civil unrest in support of the British South Africa Police (BSAP), a paramilitary force created in 1889. This was another security force unit comprising both black and white Rhodesians, and its experiences of warfare included supporting the British during the Second Boer War (1899-1902) and fighting German forces in the neighbouring German East Africa during the First World War.

The Rhodesian Air Force (RhAF) being among the most powerful air forces in southern Africa,<sup>72</sup> the first serious incursions of a war known as the Second Chimurenga by rebel groups were sporadic and were easily repulsed by Rhodesian security forces. The deadliest confrontation occurred in August 1967 near Lake Victoria when around 90 ZAPU guerillas were killed, and in this operation (Operation Nickel), RhAF Alouettes played an important role as did Provosts and aircraft of the Police Reserve Air Wing (PRAW).<sup>73</sup> A second major encounter in these early years of the war involved Hawker Hunters of 1 Squadron that strafed guerillas during the unit's first operation sortie the same month, and a third eventuated in March 1968 when Vampires carried out similar operations against guerillas who had crossed the border from Tanzania, one of ZAPU's main operational bases, the other being Zambia.

If political events taking place in a wider political arena strengthened Rhodesia's position in the early 1970s,<sup>74</sup> and a secretive military alliance with Portugal and South Africa strengthened it even further.<sup>75</sup> Simultaneously,

---

72. At its independence, the RhAF was made up of 1 Squadron (operating Hunter FGA.9s), 2 Squadron (operating Vampire FB.9s), 3 Squadron (operation C-47s), 4 Squadron (operating Provost T.52s), 5 Squadron (operating Canberra B.2/T.4s), and 7 Squadron based near Salisbury (Harare) which operated Alouette III helicopters.

73. Flintham, 125.

74. In July 1969, Nixon and Kissinger laid out their policy for Southern Africa in National Security Study Memorandum (NSSM) 39. Otherwise known as the 'Tar Baby' option, NSSM 39 declared that although *apartheid* and colonialism were unpleasant, they were on the other hand realities that should be accommodated in respect of a wider reaching geopolitical strategy known as *realpolitik*. For more see, Lockwood, "National Security Memorandum 39 and the Future of United States Policy Toward Southern Africa", 63-72.

75. The alliance in question is the Alcora Exercise. An acronym for *Aliança Contra as Rebeliões em Africa*, the immediate objective of the Alcora Exercise was to examine the ways in which the three countries in question could counter nationalist ambitions militarily. Ribiero de Meneses and McNamara, 201-215.

China was increasing its commitment to nationalist forces and more sophisticated Soviet weaponry was being supplied to rebel forces in Africa.<sup>76</sup> Furthermore, the independence of Mozambique in 1975 presented another challenge. With the FAP having withdrawn, ZANLA forces had more freedom to roam along the Mozambican border with Rhodesia and the frequency of incursions began to increase.

The RhAF responded by firstly striking ZANLA camps inside Mozambique itself. Its existing fleet of aircraft was bolstered by the purchase of twelve BN-2 Islander light utility aircraft, 35 Alouette IIs and IIIs, and Cessna FTB.337Gs.<sup>77</sup> A second RhAF strike took place on 28 February 1976 when Hawker Hunters attacked a ZANLA base at Pafuri in Mozambique, while a third was carried out in May 1976 against guerillas operating from Botswana who had damaged the Botswana-Bulawayo railway line. Later that month, the RhAF attacked a ZIPRA arms depot in Mozambique, and in August the Selous Scouts killed 600 ZANLA rebels also in the former Portuguese colony.<sup>78</sup> Rhodesian forces having by now defined four main operational areas in the north-east (Hurricane), in the east (Thrasher), in the south-east (Repulse), and in the south-west (Tangent), the most significant development as far as countering the movement of rebel forces and their contact with local populations was the Fire Force mission. Indeed, Rhodesian security forces comprising just under 43,000 members, the over 400,000 square miles of territory that had to be secured presented a daunting task.

The development of Fire Force missions began as early as February 1974 when military planners decided to implement strategies used by the Portuguese in Angola. Firstly, instead of using the conventional battalion model of three companies and four platoons, each battalion of the RLI was remodeled so that it was made up of four thirty-man platoons. Secondly, each platoon was then broken down so it contained not eight-man squads, but smaller units made up of four commandos and called "Sticks". The reasoning behind the decision to use smaller squads was that the Alouette III was central to the Fire Force mission as a whole and could only carry four passengers plus the pilot. A second development came with the establishment of observation posts inside each operational zone and the creation of forward airfields and Joint Operational Centres (JOCs). Initially these centres were found near Umtali (now Mutare) in the east, Mount Darwin and Mtoko in

---

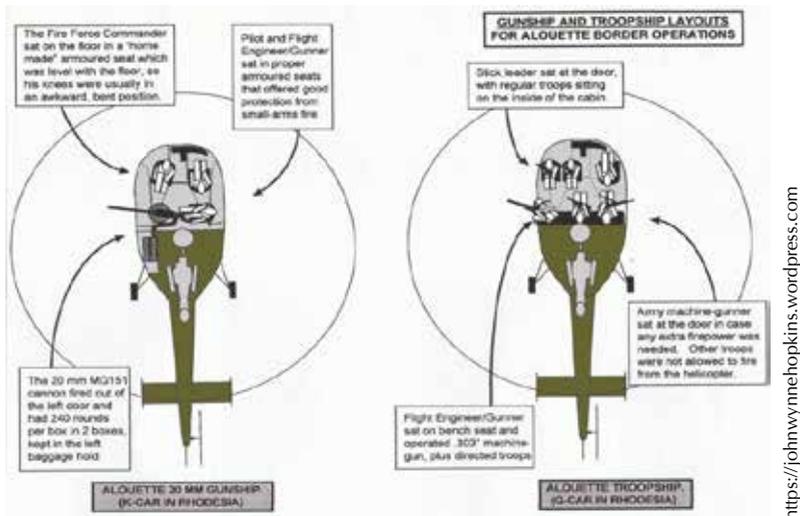
76. The USSR began supplying surface-to-air missiles to the PAIGC in 1973. Westad, 215.

77. By 1979, Rhodesia possessed around fifty Alouette IIIs. Some were provided by South African company Armscor under license from Aérospatiale. Parts were shipped from Toulouse and then assembled in South Africa. Anti-Apartheid Movement, "Fireforce Exposed: the Rhodesian security forces and their role in defending white supremacy".

78. Flintham, 125.

the north-east, and at Buffalo Range airfield in the south-west. However, as enemy incursions increased, temporary bases were also set up in the Honde Valley, Shabini, Fort Victoria and in the capital, Salisbury.<sup>79</sup>

A typical mission involved the participation of four Alouette IIIs, a C-47 troop carrier plus a Cessna (Lynx in the RhAF). One of the Alouettes was equipped with a Matra 20mm cannon (the K-car) and transported the operation commander and the gunner, while the others (G-cars) carried four troops armed with either machine guns or rifles. In an organised strike on rebel positions, the Alouettes would take off some 10-15 minutes before the C-47 due to the latter's greater speed once in the air. As it was usual for larger guerilla groups to break up at the sound of approaching helicopters, or be alerted by inhabitants of the area, the strategy was to fly in low and to disembark as quickly as possible. If guerillas were visible, they would be attacked beforehand by the K-car, but all missions involved encircling an enemy position so as to ensure that guerillas did not escape into the surrounding area. This was done by using paratroopers dropped by the C-47 and a second wave of troops called the "Land Tail" could be transported to the zone to sweep the area if the terrain permitted this type of operation.



In spite of Rhodesian forces being able to hold out against rebel forces until early 1979, as was the case with France and Portugal beforehand, a mixture of international pressure and / or a growing number of better equipped rebel forces plus a shortage of manpower made Rhodesia's position increasingly untenable. It had tried to compensate for this lack of manpower by recruiting US Vietnam War veterans, Australians, New Zealanders, British

<sup>79</sup>. Cocks, 45.

and a company of around 200 French mercenaries, the 7 Independent Company, but in the end the odds were overwhelmingly stacked against them. Indeed, it has been estimated that by January 1979, there were as many as 12,000 guerillas inside Rhodesia while another 22,000 ZIPRA and 16,000 ZANLA guerillas lie in wait outside the country.<sup>80</sup>

In order to face up to the inevitable, in March 1978 Smith sought to reach an agreement with moderate African nationalist leaders Bishop Abel Muzorewa, Ndabaningi Sithole and Jeremiah Chirau. However, unhappy with this Internal Settlement agreement, ZANU and ZAPU acting in unison as the Patriotic Front promised to keep fighting until it had attained military victory. Despite Muzorewa becoming Prime Minister in April 1979 and despite the country being renamed Zimbabwe-Rhodesia, as a demonstration that nationalist military forces would use virtually any means to achieve their goals for a completely independent Zimbabwe, ZANU's armed wing ZIPRA had shot down two unarmed Vickers Viscount civilian airliners in September 1978 and February 1979 respectively. To appease these groups and to reach a peaceful conclusion, British Prime Minister invited representatives from all sides to London in late 1979. The subsequent Lancaster House Agreement signed on 21 December 1979 brought an end to the existence of Rhodesia. Elections held in February 1980 saw the arrival of Robert Mugabe as president of the newly-created Zimbabwe. This was a position he would hold until he was ousted from power in November 2017.

## **Conclusion**

A far cry from its humble beginnings as a utility aircraft used in casevac operations, the helicopter evolved into a veritable weapon of warfare that had gained almost iconic status. This position attained through cinematic projections of the role of the helicopter in the Vietnam War, the adaptations this VTOL underwent in the 1950s and 1960s transformed the development of military strategies implemented to confront the challenges of irregular warfare. Effectively, the guerilla could no longer seek a safe haven in familiar terrain, and neither could he feel that he was out of reach and able to act indiscriminately among local populations. Furthermore, when the guerilla did venture out to attack his enemy, he could be sure that sooner or later a heliborne operation would be launched to stop him in his tracks.

Still very much a part of contemporary conflict, the development of helicopter warfare made an inestimable contribution to the way war was waged in African colonial conflicts. Providing a kill rate in Rhodesia of up to 80 to 1,<sup>81</sup> the evolution of the helicopter enabled armed forces to switch from

---

80. Beckett.

81. Wood.

conventional to irregular methods in order to gain the upper hand over an enemy little concerned by an obligation to engage in a frontal war. However useful the helicopter was in irregular warfare, any contribution it did make was ultimately hobbled and negated by political embattlement and psychological conditioning: all three of the wars we have presented in this paper resulted in a loss for supposedly superior military forces.

M. S. Alexander, J. F. V. Keiger, *France and the Algerian War, 1954-1962: Strategy, Operations and Diplomacy*. London, Routledge, 2002.

V. Amukwaya Shigwedha, "The Relationship between UNITA and SWAPO: Allies and Adversaries", *Journal of Southern African Studies*, Vol.40, No.6, 2014.

P. Aussaresses, *The Battle of the Casbah: Terrorism and Counter-Terrorism in Algeria, 1955-1957*. New York, Enigma Books, 2002.

P. Baxter, *SAAF's Border War: The South African Air Force in Combat, 1966-1989*. Solihull, Helion & Co., 2012.

I. W. Beckett, "The Rhodesian Army: Counter-insurgency, 1972-1979", available at <http://selousscouts.tripod.com/rhodesian.part2.htm>

G. Booca, *The Secret Army*. New Jersey, Prentice Hall, 1968.

F. Bos, «Les Détachements d'intervention hélicoptérés dans la guerre irrégulière», *Stratégique*, No.93-96, 2009.

L. Bourgeois, *Le Matériel pendant la guerre d'Algérie*. Paris: Inspection du Matériel de l'Armée de Terre, 1987

P. Brault, «Le colonel Déodat du Puy-Montbrun nous a quittés (sic) : Parachutiste et pionnier de l'Alat, une histoire et un destin exceptionnels», 17 February 2009, available at <http://fncv-drome.over-blog.com/article-29151278.html>.

H. Campbell, "The Siege of Cuito Carnavale", *The Scandinavian Institute of African Studies*, Issue 10, 1990.

K. Campbell, *Soviet Policy Towards South Africa*. London, Palgrave-Macmillan, 1986.

J. P. Cann, John Pearce, "Portuguese Counterinsurgency Campaigning in Africa, 1961-1974: A Military Analysis", Doctoral Thesis presented at King's College, London, February 1996.

J. P. Cann, *Flight Plan Africa: Portuguese Airpower in Counterinsurgency, 1961-1974*. Solihull, Helion & Co., 2015.

H. Canuel, "French Counterinsurgency in Algeria: Forgotten Lessons from a Misunderstood Conflict", *Small Wars Journal*, 2010.

C. Chongo, "A Good Measure of Sacrifice: Aspects of Zambia's Contribution to the Liberation Wars in Southern Africa, 1964-1975", *Zambia Social Science Journal*, Vol.6, No.1, 2015/2016.

J. K. Cilliers, *Counter-Insurgency in Rhodesia*. London, Croom Helm, 1985.

C. Cocks, *Fireforce: One Man's War in the Rhodesian Light Infantry*. Solihull, Helion & Company, 2012.

P. Correia, G. Verhof, "Portugal and South Africa: Close Allies or Unwilling Partners in Southern Africa During the Cold War?", *South African Journal of Military Studies*, Vol.37, No.1, 2009.

J. S. Corum, W. R. Johnson, *Air Power in Small Wars*. Kansas, University of Kansas Press, 2003.

P. Facon, «L'adaptation de l'armée de l'Air à la guerre d'Algérie: la lutte antiguérilla», paper presented at «Histoire de guerre aérienne», international conference, 10-11 September 1987, Vincennes, SHAA, 1988.

V. Flintham, *Air Wars and Aircraft: A Detailed Record of Air Combat, 1945 to the Present*. London, Arms and Armour, 1989.

A. Fraleigh, "The Algerian War of Independence", *Proceedings of the American Society of International Law at its Annual Meeting (1921-1969)*, Vol 61, April 1967.

D. Galula, *Counterinsurgency Warfare: Theory and Practice*. Westport, Conn. & London, Praeger Security International, 1964.

P. Gaujac, «Du parachute à l'hélicoptère de combat», *Revue Historique des Armées*, No.4, 1992.

E. George, *The Cuban Intervention in Angola, 1965-1991: From Che Guevara to Cuito Carnival*. London & New York, Frank Cass, 2005.

P. Gleijeses, "Cuba's First Venture in Africa: Algeria, 1961-1965", *Journal of Latin American Studies*, 1996.

P. Gleijeses, *Conflicting Missions: Havana, Washington, and Africa, 1959-1976*. Chapel Hill and London, The University of North Carolina Press, 2002.

E. Guevara, *The African Dream: The Diaries of the Revolutionary War in the Congo*. London, Vintage Books, 1997.

E. Harsch, T. Thomas, *Angola: The Hidden History of Washington's War*. New York, Pathfinder Press, 1976.

A. A. Heggoy, *Insurgency and Counterinsurgency in Algeria*, Bloomington, Indiana University Press, 1972.

L. M. Heywood, "Angola and the Violent Years, 1975-2008: Civilian Casualties", *Portuguese Studies Review*, vol.19, no 1/2, 2011.

A. Horne, *A Savage War of Peace*. New York: NYRB, 2006.

S. F. Jackson, "China's Third World Policy: The Case of Angola and

Mozambique, 1961-93”, *The China Quarterly*, No.142, June 1995.

E. Lockwood, “National Security Memorandum 39 and the Future of United States Policy Toward Southern Africa”, *A Journal of Opinion*, Vol.4, No.3, Autumn 1974.

S. B. Macdonald, *European Destiny, Atlantic Transformations: Portuguese Foreign Policy Under the Second Republic, 1974-1992*. London, Routledge, 1993.

J. Marcum, *The Angolan Revolution, Vol.1: The Anatomy of an Explosion, 1950-1962*. Cambridge, Mass. & London, The MIT Press, 1969.

G. Meynier, *Histoire intérieure du FLN, 1954-1962*. Paris: Fayard, 2002.

J. Moulin, «Sikorsky S.58/H-34 armé 3pirate», *Les avions de la guerre d'Algérie*, 2008, available at <http://avions-de-la-guerre-d-algerie.over-blog.com/article-20685086.html>.

E. H. Murphy, “Colonial Propaganda: Jacques Soustelle in Defence of French Algeria, 1955-1962”, *Proceedings of the Meeting of the French Colonial Historical Society*, Vol. 6/7, 1982.

D. R. Niccoli, “Atlantic Sentinels”, *Air Enthusiast* 73, January-February 1998.

A. H. Peterson, G. C. Reinhart, E. E. Conger, (eds.) “Symposium on the Role of Airpower in Counterinsurgency and Unconventional Warfare: the Algerian War”, Memorandum RM-3653-PR, July 1963.

H. Prats, *Oral History, Archivos del Instituto de Historia de Cuba*, Havana.

D. Renton, D. Seddon, L. Zeilig, *The Congo: Plunder and Resistance*. London, Zed Books, 2007.

F. Ribiero De Meneses, Filipe, R. Mcnamara, “The Last Throw of the Dice: Portugal, Rhodesia and South Africa, 1970-74”, *Portuguese Studies*, Vol.28, No.2, 2012.

S. Rookes, *For God and the CIA: Cuban Exile Military Forces in the Congo and Beyond, 1959-1967*. Solihull, Helion & Co. 2020.

C. R. Shrader, *The First Helicopter War: Logistics and Mobility in Algeria, 1954-1962*. Westport, Conn, Praeger, 1999.

R. Trinquier, *Modern Warfare: A French View of Counterinsurgency*. Westport, Conn. & London, Praeger Security International, 1964.

O. A. Westad, *The Global Cold War*. Cambridge: Cambridge University Press, 2012.

D. L. Wheeler, "The Portuguese Army in Angola", *The Journal of Modern African Studies*, Vol.7, No.3, October 1969.

J. R. T. Wood, "Fire Force: Helicopter Warfare in Rhodesia: 1962-1980", available at <http://www.rhodesia.nl/firefor1.htm>

-----

"Coalition Air Warfare in the Korean War, 1950-1953", *US Air Force History and Museums Program*, Washington D.C., 2005.

"Country Summary Prepared by the Bureau of Intelligence and Research", Washington, 6 March, 1967, *FRUS*, 1964-1968, Vol. XXIV.

"Cuba Began Role in Zanzibar in '61: Havana's Part in Revolution Outlined in Washington - Guerilla Course Cited", *New York Times*, 2 January 1964.

«Etude des formations d'hélicoptères de l'armée de Terre américaine», Rapport des missions en Corée et au Japon, December 1963.

"Fireforce Exposed: the Rhodesian security forces and their role in defending white supremacy", published by Anti-Apartheid Movement, November 1979, available at [http://psimg.jstor.org/fsi/img/pdf/t0/10.5555/al.sff.document.aam00014\\_final.pdf](http://psimg.jstor.org/fsi/img/pdf/t0/10.5555/al.sff.document.aam00014_final.pdf),

France. National Defence Committee for Scientific Action, Operations Research Group, "Report of the Operations Research Mission on H-21 Helicopter Operations in Algeria" (Morton, PA: Vertol Aircraft Corporation, April 1957).

L'aviation légère de l'armée de Terre dans la guerre d'Algérie (1954-1962): organisation et emploi», [defence.gouv.fr](http://defence.gouv.fr), 22 November 2017.

"*Military Facilities in the Azores: Agreement between Portugal and the United States*", 6 September 1951. American Foreign Policy 1950-1955, Basic Documents Volumes I and II, Department of State Publication 6446, General Foreign Policy Series 117, Washington, DC: U.S. Government Printing Office, 1957

"Short-Term Prospects for the African Nationalist Movements in Angola and Mozambique", Special National Intelligence Estimate, Number 71-64, 1 July, 1964

«Visite du Ministère de la Défense, Le Cap, 12 juin 1961», Ministère des Affaires Etrangères, Département des affaires politiques, Afrique-Levant, UN Series 8, Paris.