

The French Engineer Corps, which has a total of about 20,000 active duty sappers,¹ has three components: *combat*, *security*, and *infrastructure*. These three components are interdependent, and all training for them is done at the Engineer School in Angers, in western France. It is fairly common for an officer to begin his career in a combat unit, go to the Paris Fire Brigade for some time, and then

come back to a combat regiment or move to the infrastructure component.

The *combat component* (the engineer branch) is under the command of the Army. It consists of twelve regiments—eight embedded in combat brigades, three in the engineer brigade, and one attached to the Air Force. Its mission is to provide direct and general support to the forces.

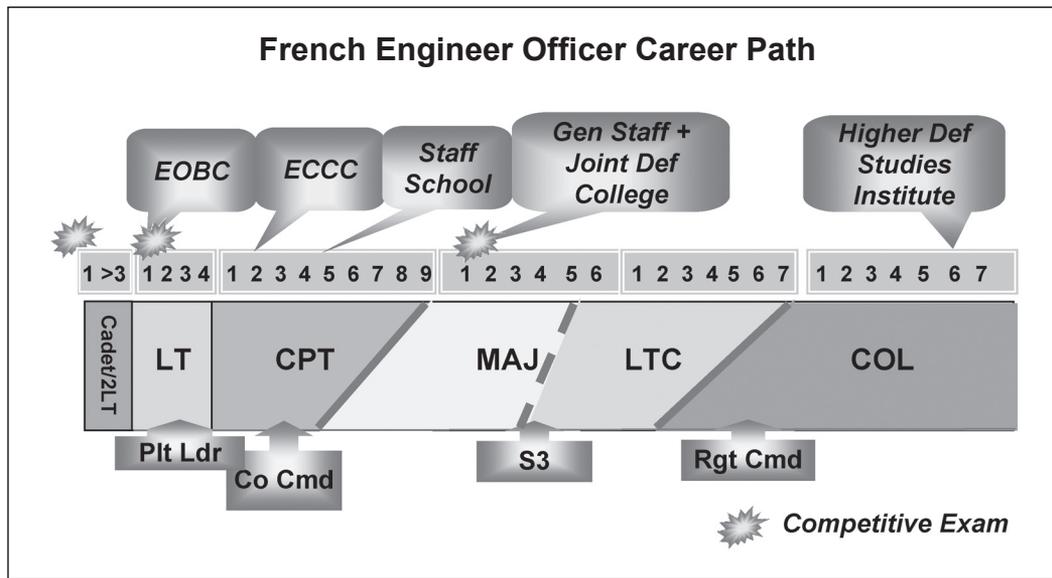


A lieutenant studies a map during a tactical exercise.

The *security component* is under the control of the Ministry of Interior, which is broadly equivalent to the Department of Homeland Security. The Paris Fire Brigade (consisting of 8,000 personnel) and the civilian security units (consisting of 2,000 personnel) belong to this ministry. The latter are responsible for disaster relief and support the local firemen. The Fire Brigade has full responsibility for the security of the people in Paris and intervenes in case of fire, accidents, or terrorist attacks.

The *infrastructure component*, which is equivalent to the United States Army Corps of Engineers, has more than 1,000 sappers and the same number of civilian employees. Called *service du génie*² or *service*, it is responsible for the infrastructure, construction, and maintenance for the armed services.

The purpose of this article is to explain how the French education system works for engineer officers.³ But before talking about



specialized training, it is necessary to describe the specifics of officers in the French Engineer Corps.

The Officer Corps

According to Napoleon Bonaparte, “There is a field marshal’s baton in every Soldier’s knapsack.”⁴ By this he meant that even a private can aspire to the highest rank. It is not so common now, because there are fewer wars, but some generals come from the enlisted ranks, and more than 50 percent of officers have come from the noncommissioned officer (NCO) corps. Most of them stay in the same domain. It is common to see 50-year-old captains who are former senior NCOs who were promoted late.

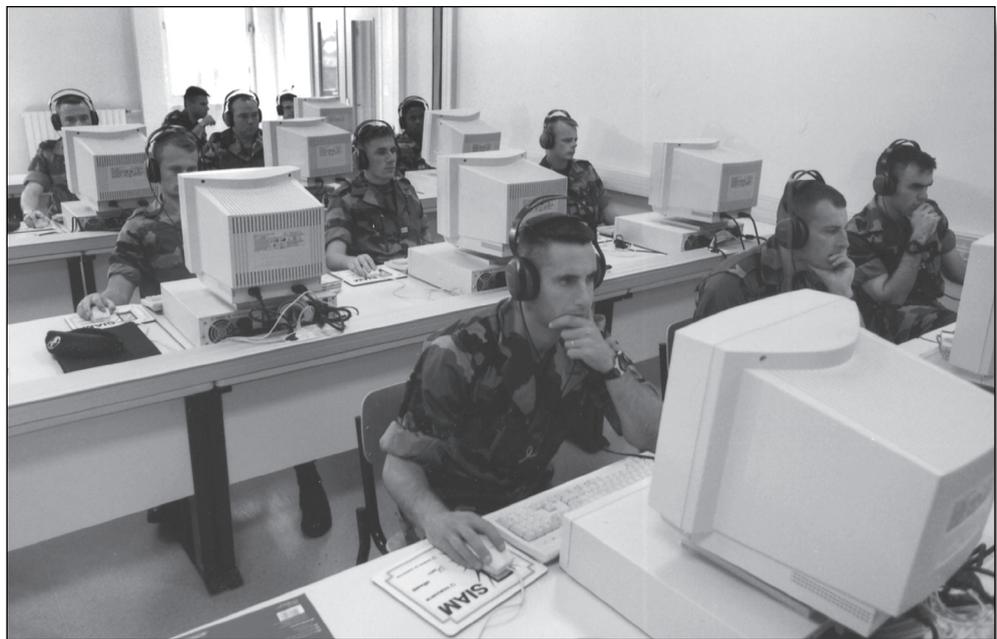
For an NCO, it is possible to be promoted to officer at different levels, usually after a selective exam. Junior NCOs spend two years in a different officer academy before going to branch school for basic training, but some other NCOs who are more senior can go directly to the branch school. Senior NCOs are chosen by the Army for promotion to lieutenant, and those officers always stay in their initial specialty.

Saint Cyr Military Academy recruits cadets (after they have taken an exam) directly from universities or preparatory classes. Before the exam, it is necessary to spend three years in college or two in preparatory classes. After high school, these preparatory classes prepare a student

for the difficult exams, based on mathematics and physics, for entering civilian engineer schools that are called “great schools.” These schools, which are considered schools for the elite, are a unique French institution. Although most of them are civil engineer schools in all domains, there are also such schools for business or linguists, and they are completely separate from the universities. Although they are the preferred way to success, they are also the most difficult.

Saint Cyr is a great school, and 40 percent of the cadets who attend there receive a mathematics education. When they finish the 3-year curriculum, they receive a master’s degree in general engineering.

In some specialties (lawyers, linguists, architects), officers can be commissioned directly from civilian life if they have the required degree. Their military training is short, 2 to



Online language classes help these officers prepare for promotion.



A young lieutenant works on an engine during a prime power class.

4 months, before these specialists become officers in their domain. They are considered contract officers, rather than career officers like the others. A career officer “owns” his rank, which means he can stay in the Army until the retirement age limit of his rank,⁵ even if he is not promoted.

Training for Young Officers

All officers attend basic training at the Engineer School in Angers.⁶ The course there lasts 11 months—from September to the end of July. It is a mixture of theory and practical exercises in the field, with the objective of training lieutenants for their first job as platoon leader. The basis of training is combat engineer skills: mobility, countermobility, and survivability. After years of peacekeeping operations all over the world, the emphasis nowadays is much more on demining⁷ or force protection than on bridging or obstacles, as it was 20 years ago. The first phase, which lasts for 8 months, gives the students a detailed overview of engineer subjects.

Based on their evaluation, the young officers choose their first assignment at the beginning of the second phase, which lasts for 3 months. Several domains are offered: construction, security, bridging, and combat. Even in the combat domain, there is a place for specialization. The future platoon leader in the Airborne Engineer Regiment goes to jump school. The future diver goes to the Navy Diving Center in Toulon, in the south of France, before coming back to Angers for engineer-specific training. These 1-year courses are not only long but also very demanding. The same is true for students who enter the Paris Fire Brigade, where it takes almost a year to complete all the qualifications required.

This training gives the student a good knowledge of the basic engineering skills required to be a platoon leader. It provides the Engineer Corps with multipurpose officers who are flexible enough to evolve through different jobs, if necessary.

Three or four years later, the officers return to the Engineer School for the captain’s course, where the process is similar. During the first 4 months, students focus on the generalities of company command in the context of a combat unit. The 5th month is spent on specialization. Although some training is done on-site, other training is done in units, as it is for security. For specific training in the Fire Brigade, the officers go to Paris. Captains in the Chemical, Biological, Radiological, and Nuclear (CBRN) Regiment, which is now attached to the Engineer Brigade, take the common training in Angers, then move to Draguignan, in the south of France, where the CBRN training center is located to complete the training.

In the first part of his career, until he reaches the rank of major, an officer can follow other specialized courses, such as water treatment or prime power and electricity distribution courses, to fulfill a position. Usually, an officer coming from Saint Cyr does not take such courses because the hierarchy expects this officer to be a future commander, not a specialist. Most of the time, these positions are held by experienced officers who have been commissioned from the NCO ranks and are already specialized in these matters.

Training After Company Command

After company command, there are several ways for officers to continue their career in the Army, depending on the age and the academic level of each officer.

For staff positions, there is the Staff School in Compiègne, north of Paris, where most officers attend a 5-month course just after company command. Then, they prepare for the exam to enter the Staff College in Paris.⁸ This is the way to prepare for command positions, except for engineers. For an engineer officer with a scientific education, there is another exam—which is based on mathematics and called the *brevet technique* (BT) or technical brevet—that an officer must pass to enter one of the famous great schools in civil engineering.

For the Engineer Corps, this is the preferred way because it provides qualified officers not only for regimental commands but also for district commands in the *service*. This integration in a civilian school can last from 1 to 3 years, depending on the school and the curriculum chosen. Afterwards, this officer joins his colleagues in the Joint Staff College in Paris.

Only a minority of officers will follow this path, because most do not have a high enough academic level to pass the exams. But even if an officer fails this type of exam, his career is not finished. There are several other career possibilities, especially for engineers.

The *service* offers a lot of positions at different levels: surveyors, crew chiefs, project managers, and district and division commanders. It has no Soldiers, only NCOs and officers,⁹ and they all come from combat units. The *service* is also open to officers coming from other branches, with the only condition being that they pass the exam.

The *certificat technique* (CT) or technical certificate is for captains. This 1-year course, which is taught in Angers, provides infrastructure officers for the regiments.¹⁰ At a higher level is the *diplôme technique* (DT) or technical diploma, which is reserved for captains or majors with a good background in sciences (a university degree, for example). In 2 years, they can earn a master's degree in vertical construction. If an officer already has a master's degree, he can obtain this master's in only 1 year. After these courses, officers join the *service* to work in staff positions or as project managers. The best officers can expect to command a district.

If an officer fails, he still can drop one level below his current level—for example, from BT to DT or from DT to CT. All of these courses are taught at the Engineer School in Angers. This system provides the *service du génie* with the highly professional workforce it needs. For officers who were rejected or not attracted to command positions in their branch, this system offers new opportunities to continue a career in a very different but essential domain. If for any reason the engineer officers decide to leave, they will have little problem finding a job in the construction industry with their technical training.

Conclusion

Since the end of World War II, the French Army has built a complex but complete system of professional training for officers. It is still evolving¹¹ to adapt to changes in the Army and in society. The main disadvantage is the length of time that the average officer spends in schools.¹² Although it is a heavy load, it is the only way (especially in the Engineer Corps) to have experienced and qualified officers who are flexible enough to adapt to any position. This lengthy training is possible because officers stay on duty longer—they can receive a minimum pension only after 25 years of duty.¹³ The unemployment rate is still high in France, and it is not easy for the average officer to leave the

Army and find a job. Consequently, most of them choose to stay in the Army family. This system is a good investment for the Army. Although the courses take a lot of time, the officers remain in these specialized positions long enough to make the system viable and durable.



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Endnotes

¹In France, reserve forces are small: one company for each regiment, for about 1,000 sappers total.

²The infrastructure component is called "*service du génie*" or "*service*"; *génie* is the French word for engineer.

³For more details, contact the author at Fort Leonard Wood : LTC Potin, (573) 563-4027 by telephone, or by e-mail at <philippe.potin@us.army.mil>.

⁴This is an approximate translation of the original: « *tout soldat a dans sa giberne son bâton de Maréchal* ».

⁵For a lieutenant colonel, it is age 57.

⁶About 70 lieutenants every year: 20 from Saint Cyr, 25 from the officer academy for NCOs, 10 from the NCO corps, 5 from diverse origins, and 10 international students.

⁷In 2007, improvised explosive device (IED) defeat was integrated in the program.

⁸The Staff College lasts 2 years: 6 months in the Army Superior Staff School, 6 months in overseas operation as a staff officer, and 1 year in the Joint Staff College in Paris.

⁹In 2007, there were 500 officers.

¹⁰There is 1 position for each regiment, or 100 total. He is responsible for maintaining the infrastructures in a regiment and conducting minor construction projects in liaison with the local engineer district.

¹¹The last reform, which was in 2007, is too recent to observe the consequences on the Engineer Corps.

¹²I spent 8 years in courses, for 21 years on active duty.

¹³To receive the maximum pension an officer needs to serve more than 30 years, especially if he has no bonus from operations or specific assignments.