The Ultimate Test

Before attempting to land on an actual carrier, French Navy pilots must first pass through the Simulated Carrier Landings on Runway, known as ASSP (Appontage Simulé Sur Piste in French), in front of the landing signal officers (LSO). Bruno Etchenic travelled to Brittany to witness the action

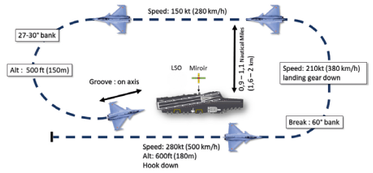
Late afternoon in the 12F briefing room. Eight young pilots, aged 23 to 29, wait for the arrival of the carrier landing officers in near-religious silence. Freed from their impressive flight suits that give them the characteristic air of modern-day knights, they once again appear simply human in our eyes as observers. Stripped of their bravado, we see eight students nervously awaiting the results of the exercise, trembling in a reverent hush.
The day before, when I asked Thibault, one of the young pilots, whether the thought of a real carrier landing at sea made him apprehensive, he replied that it was merely the culmination of hard work done beforehand. In this case, they must succeed in the ASSP, and the final boss is the 'LSO' – landing signal officer.

The final boss

This expression was used by three pilots I interviewed during various conversations and this shared language is a sign of the strong common culture within the squadron. The 'final boss' is a term borrowed from geek video game culture. It represents the ultimate adversary, the most respected and difficult to defeat–the one who, once overcome, will bestow the final reward, the greatest possible honour. But it is also the one whose defeat signifies nothing but death. This symbolism comes into full play as soon as the first words are uttered by corvette Captain Justin, the "boss among bosses" within the community of carrier LSOs, assisted that day by Lieutenant Adrien (full names withheld). Harsh words were expected. Though young, these pilots already know their craft; they are well aware of their own limits and do not wait for the verdict before engaging in self-criticism. In the aviator's profession, mistakes are part of daily life. One must know how to recognise, control and correct them. When handling such machines in a combat environment, sweeping errors under the rug would sooner or later lead to death – for oneself or others.
The "final boss", because regardless of the rank of the pilot at the controls, the LSO always has the final word, and that impresses the young student pilots greatly. Nevertheless, Capt Justin doesn't like the term. To him, the boss is the performance level of each student pilot. He must bring them to an adequate level if they want to board, and he is there to guide them. Applying pressure is part of the game because they will have to learn to manage it throughout their careers, but failures are very rare and are seen as a collective failure.

Guardians of the ramp

Carrier landing is not, as the overused expression goes, a mass sport, and for good reason! The pilot must arrive with a perfect glide slope, most often controlled using the landing mirror, where the angular precision between each 'ball' is only 0.13°. While maintaining the slope, the pilot must also aim for the centreline with extremely narrow room for error, given the approach speed, which is close to 140knots, or 260km/h. If the tailhook catches the arresting wire more than 1.5 to three metres off the centreline, the hydraulic presses under either side of the deck, which act as brakes, are not engaged evenly, leading to additional wear or even breaking the wire. Beyond three metres, the wire is considered lost. Beyond six metres, the aircraft will hit the deck in an unreinforced area, potentially causing structural damage to the aircraft carrier.
If the glide slope is too low, pilots put themselves in danger and could strike the stern ramp of the deck, named "arrondi" in French. This should not be confused with the other meaning of arrondi, with the flare performed by land-based pilots before touching down, where the nose is lifted to





Before taking off, every pilot respectfully salutes the LSOs Alexandre Hartmann

Below Right: ***Observe the shape of the Rafale and the landing gear. Activity on the base was massive; in addition to ASSP, regular training was ongoing***

This picture shows how close we were to the runway





The French navy has started to upgrade all its Rafale fleet to the latest F4 variant
All images Bruno Etchenic unless stated otherwise



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The pilot focused on the 'meatball' up to the last moment *Alexandre Hartmann*



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LSO at night, with only a tiny red light to not obliterate its night vision



The parking is still wet, and the sun manages to find a path through the clouds. Perfect time to jump into the cockpit!
Alexandre Hartmann



After each pass, a few notes are written into the famous landing logbook. It wasn't hot this night. But I was told: "Imagine in January in the cold rain..."
French Navy

reduce descent rate and gently touch the ground. Carrier pilots are not fans of the "kiss landing" favoured by land-based aviators. Instead, it's more appropriate to speak of the "impact" rather than the "touchdown" of the wheels. I think this explanation is necessary to highlight the delicacy of another name given to LSOs, and what could also be considered a subtle play on words: the "Guardians of the Ramp" or "gardiens de l'arrondi".

If the glide slope is too high, the aircraft could hit the deck with excessive vertical speed, causing severe damage and very likely fatalities, given the masses and speeds involved. Ensuring that both the airframe and the pilot return in one piece, without damaging the aeroplane or the ship while maintaining the safety of the crew on board is the heavy responsibility of the LSOs, which explains the rigour of training.

Failing to defeat 'the boss' means death. 'Death' for a navy pilot means being deemed unfit to land on the carrier. The LSO noted in his introduction that while a margin of error is accepted, after several ASSP sessions, they should be performing at a higher level. The ship won't wait, and those who don't pass the test won't remain navy aviators, as their reason for being is to operate from the sea. It's a hard truth to hear and even harder to accept... While many individuals might be crushed under the weight of such judgment, the debriefing continued. We were then able to witness the resilience of these students. Each received feedback on their actions, and the discussions were very constructive. The exchanges between the two LSOs and the students reflected a form of mutual respect. The pilots' responses to the LSOs' precise questions did not lead to any dispute. If doubt remained, they offered to review the recording, which would be the ultimate witness.

Carrier quals

This debriefing confirmed my profound ignorance of the French Navy's world, after the few interviews I had with trainee pilots the day before. The ASSP is not just 'simple' training before the real carrier landing. Simulated runway landings reproduce the entire approach phase from the initial break over the carrier, followed by the approach circuit, the various turns, the descent to the glide slope and the centreline alignment. The carrier landing is, in some ways, merely the crowning achievement of difficult training.

This year, eight pilots are undergoing initial carrier landing training, a higher-than-average number. But it's also more experienced pilots who need to qualify for night landings to obtain the famous 'owl' designation. Some pilots, if they haven't performed a night landing in a while, must redo the night ASSP; this is referred to as getting "pumpkined", a reference to Cinderella losing her carriage after midnight. The life of a navy pilot is certainly no easy ride...

Many other qualifications depend on the LSOs. Generally speaking, they are the guardians of the safety of landing operations within the GAé (Groupe Aéronaval, or carrier battle group), far beyond the direct supervision of the landings they witness. They explained to me, for example, that they are working on creating a new standard to extend the maximum flight hours allowed for night landings on a Hawkeye. They collaborate with experienced crews, taking many factors into account, including human sciences such as stress management, concentration and fatigue, to extend possibilities while staying within safe operational limits.

The image of 'the boss' also carries another meaning: that of the figure who has mastered their craft to perfection. After observing several ASSP sessions, listening to the debriefings and hearing the pilots speak, there is no doubt that the LSOs are, for all pilots, the ultimate figure – beyond even the paternal figure – divine might be a more accurate description, to which they cling.

In God we trust...

Under normal conditions, aircraft carrier approach procedures allow the recovery of a large flight deck of 15 aircraft in total radio silence. But when weather conditions worsen, visibility deteriorates, the wind rages and the sun is absent (a typical day in Brittany, one might say), the LSO's voice becomes the absolute guide. A few words to announce the start of the approach, and the pilot is reassured: they can let themselves be guided; they have blind trust in the LSO. The LSO is trained, qualified and knows the pilot's strengths and weaknesses, knowing exactly how to speak to them.

This trust is built from the very first ASSP sessions, in the harshness of the early debriefings. The LSO speaks the truth, without sugarcoating; it's a truth that's not always easy to hear, but necessary. No false encouragement or unnecessary niceties; what must be said, is said. If the LSO says they are satisfied, it means they truly are – end of story.

This trust is built in both directions, to everyone's benefit. Thus, the LSOs need to know if the trainee will respond to all their commands, no matter what, even – and especially – if they seem counterintuitive.

I witnessed a near-perfect approach when the LSO activated the wave-off signal and called for an immediate go-around. In the pilot's mind, there's no question of analysing why a go-around was requested or whether they did something right or wrong. The LSO commands and the pilot executes without hesitation. This is one of the most sought-after qualities: blind, instant obedience. It's also about conditioning the brain to a near-reflex level – from the ear to the throttle, without passing through consciousness.



Rafale M, 7, on its way to take off. This special delivery for the Nato Tiger Meet is still there and good for us! It's nice among all this grey all day long
Alexandre Hartmann

In real conditions, situations can degrade quickly. The LSO knows the situation on the deck, and there are a thousand and one reasons to ask a pilot to interrupt the final approach, up to the last moment. The pilot responded promptly to the order from the LSO, and this will be emphasised during the debriefing. Knowing that the pilot will obey against all odds establishes an important channel of trust between the LSO and the pilot, in both directions.

Night ops

As the ultimate guarantors of operational safety on board, they are also the beacon in the night guiding the sailors returning aboard. They are few but essential. Without them, and despite all the automation and safety systems on board the aircraft and the ship, aerial operations would simply be unthinkable.

For night approaches in long final, the controller guides the pilot via radar down to 350ft, then the pilot makes their mirror call, and the LSO takes over to guide them if necessary, sometimes as early as 600ft altitude if they judge that the deviation is too great for the pilot to correct themself. But if everything goes well, the LSO does not intervene and lets the pilot manage their approach.

Returning at night, without moonlight and visibility, when the sea is black and sea and land blend together, pilots are guided by controllers until the point where they are supposed to see the ship, sometimes only a few nautical miles away. In very degraded conditions, the ship is still not visible, and the lights from the mirror are absent. At 140knots, at only 600ft, it is the voice of the LSO that will help them maintain their course and guide them down to the impact.

Add to this already relatively uncommon exercise the possibility of an engine failure, or certain on-board equipment malfunctions that further complicate the manoeuvre, and you will understand why the bonds that unite pilots and their LSOs are both strong and complex, evolving rapidly once the trainee faces the ultimate qualification challenge: landing on the ship. Indeed, LSOs continually monitor the performance of pilots over time, particularly by consulting the landing logs.

At sea, I am told the bond is heightened in the community of pilots who experience extraordinary events that others cannot envision – the pilots have expressed their frustration at not being able to convey this to their families. **afm**



The light, the rain and the very particular shapes of this aircraft... I'm in love!



Flames of the afterburner provide a very special spectacle for us to enjoy. Even at night, we witnessed scramble-like take-off of up to 12 aircraft in minutes, or about 30% of the total Rafale M fleet in the French Navy



Intense activity on the Landivisiau Naval Air Base. For each session, two blocks of four aircraft and one of two followed each other, realising six passes each, twice a day, sometimes during the night, for weeks. The navy tries to manage neighbours' complaints