Was Capa able to photograph a German soldier giving orders from where he stayed on the beach?

Robert Capa is said to have seen, from his position on Omaha Beach, a German soldier (supposedly a general) standing on the cliff above the beach, standing with his hands on his hips and barking orders at the soldiers behind him. He even managed to photograph the scene with a telephoto lens. Unfortunately, the cliché would have been lost in the famous laboratory accident. This anecdote was related by filmmaker Sam Fuller, to whom Capa reportedly recounted the scene while living in Hollywood and working on his memoir.

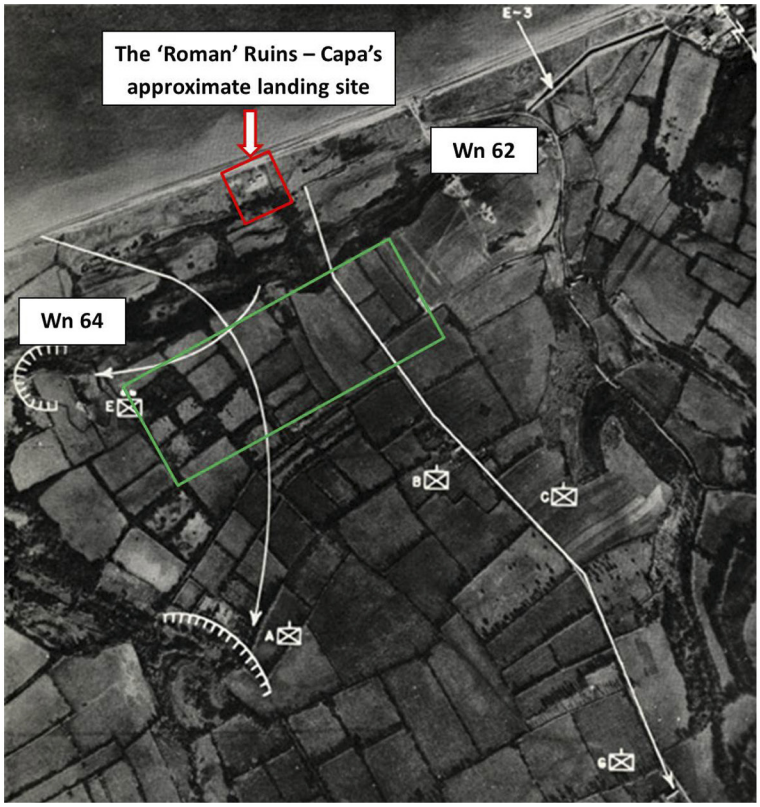
Allan Coleman asked me to take the opportunity to have a Contax II, to determine if it would have been reasonable to be able to capture the scene successfully with a telephoto.

In fact, it is not easy to give it a try, due to many unknowns that make the outcome uncertain.
It is a risk to take, but nothing prevents us from trying!

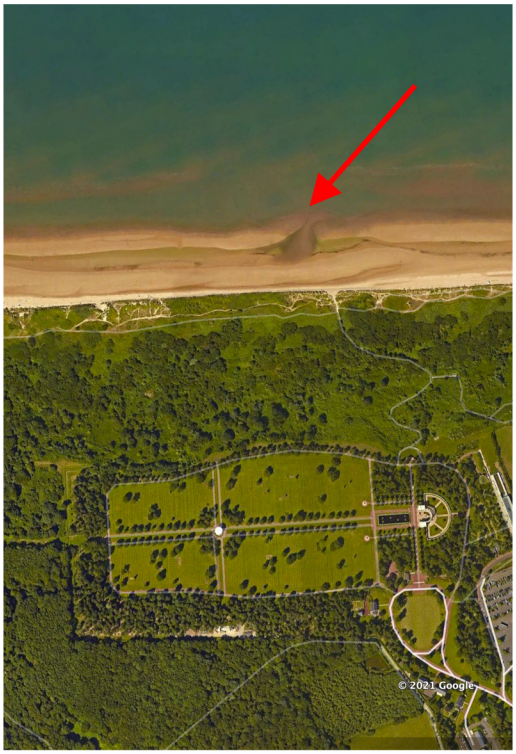
As a starting point, we need to answer two basic questions:
- How far could the German soldier be from Capa?
- What focal length could Capa have used?

Distance between Robert Capa and the German soldier :

To determine this data, I based myself on Charles Herrick's analysis, which locates Capa's position almost opposite the current American cemetery of Colleville-sur-Mer.

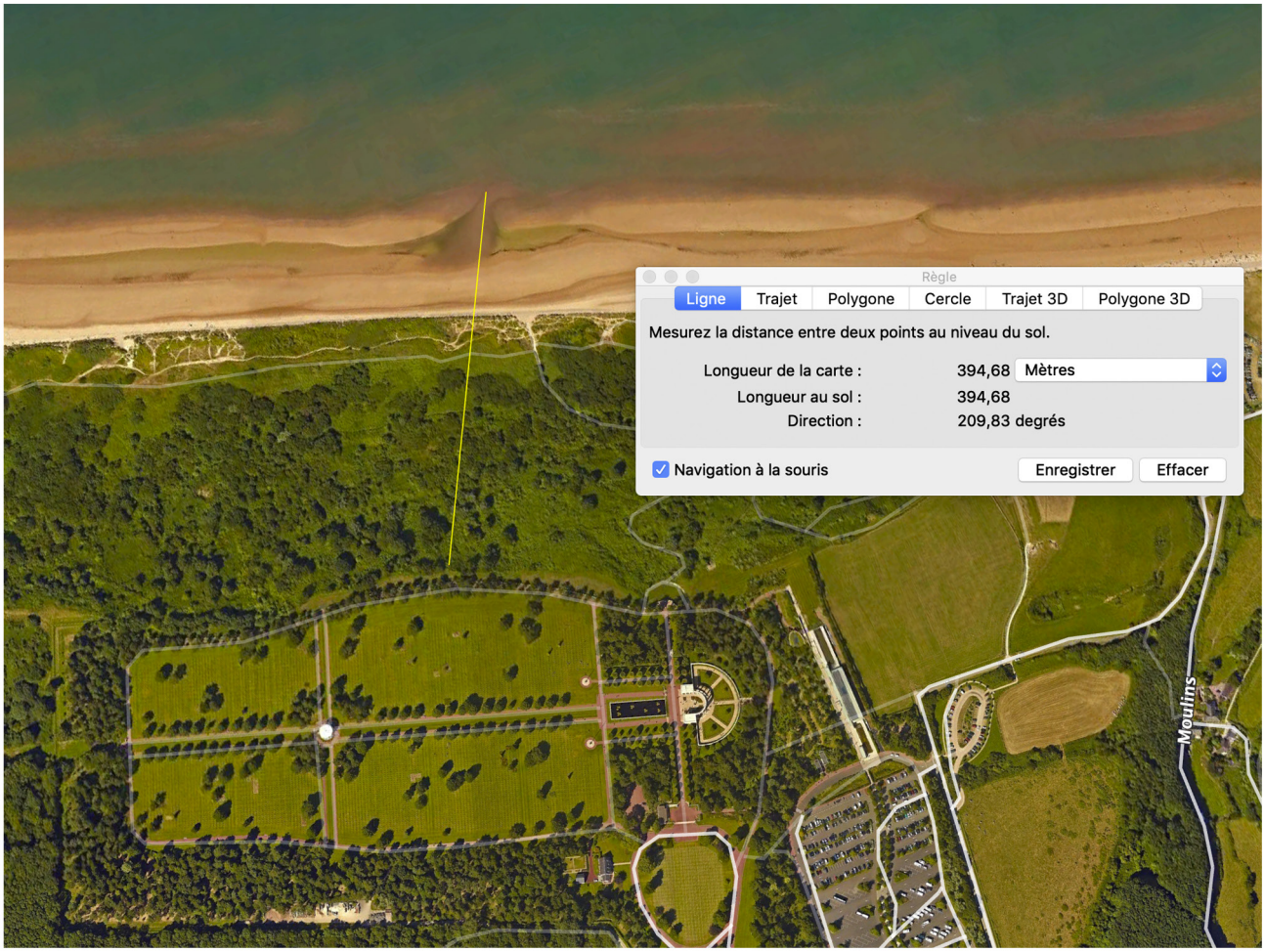


Robert Capa's supposed location, just in front of the "Roman Ruins".



Google Earth image showing the current location where Capa is said to have parked, in front of the Colleville cemetery, knowing that he docked at high tide, around 8:30 am. High tide at 8:20 a.m., coefficient of 82.

We can now determine, thanks to data from Google Earth, the distance between the top of the cliff and Robert Capa. The cemetery being located on the plateau, one can take as a landmark its enclosure to locate the position of the soldier. We get a distance of 400 meters / 1312 feet.



Google Earth indications showing a distance of 400 m/1312 ft between Capa's position and the top of the plateau.

It is obvious that all of this reasoning is completely hypothetical. The distance could just as easily have been 650 or 985 feet, or even 1640 feet! Moreover, the soldier was not necessarily directly in front of Capa, but a little to the right or to the left, which makes the figure of 1312 feet even more uncertain.

That's why I arbitrarily chose two distances: 985 and 1312 feet. I rejected the greater distances, which were too improbable because they were too far away.

What focal length did Capa use? :

To answer that question, we have to study the equipment that Robert Capa brought with him.
He had two Contax II bodies in his bag. One was certainly equipped with a 50mm (this is the one that brought back the images we know).

The second, we do not know anything about its configuration. Did he have another focal length installed on it? Did Capa have a telephoto lens? Suppose yes, because otherwise, no need to launch into the demonstration ...

The Contax II :

The Contax II is a German camera manufactured by Zeiss from 1936. An important feature for us is a rangefinder camera. That is, the framing is done via a viewfinder separate from the lens (unlike a reflex camera, which is aimed through the lens). This viewfinder is coupled with a rangefinder, which is used to achieve precise focusing. The focus is made by superimposing a small piece of the field framed on the whole scene.

What you see through the built-in viewfinder.
In the center, the rectangle for focusing.

The integrated viewfinder has the same angle of view as the standard 50mm. This means that as soon as you install a focal length other than 50mm, it no longer has the same vision as the lens. This makes it necessary to install a specific viewfinder, which takes place on the hot shoe.

It is therefore understandable that using any lens other than a 50 mm is difficult: you have to frame with the auxiliary viewfinder, then return to the main viewfinder in order to focus. Then, return to the annex viewfinder to finalize the framing.

Added to this drawback is an additional difficulty with a telephoto lens: some ancillary, so-called universal viewfinders are content to show the field framed with increasingly smaller frames as the focal length is lengthened. In short, the image is not magnified, it is just cropped. But there have also been magnifying viewfinders, giving a large, uncropped image. It is not known which Capa used.

The last important point : focusing becomes more and more difficult as you lengthen the focal length. Not because the range finder itself becomes imprecise, but because the area where the superposition is to be done is tiny, and proportionately covers a large part of the telephoto field.

Configuration of the Contax II with 145 mm Berthiot telephoto lens at F4.5, and its attached universal viewfinder.

What is seen in the annex viewfinder. Left, sight for 50 mm, right sight for 135 mm

As a result, it is generally accepted that the longest focal length that can be used is around 135mm. Moreover, the Contax that was entrusted to me had a 145mm opening at F4.5. With the non-magnifying annex viewfinder, I can attest that this lens is very difficult to use. The framing is extremely imprecise, and the focusing unreliable. Infinitely usable however.

The test :

This test was conducted with the help of my colleague Antoine, who kindly put himself in the shoes of the soldier. It is important to note that it is tall (almost 2 meters / 6,56 ft), which favors the conditions.

Unfortunately, the shots could not be taken with the Contax, and even less with the film Super XX. On the one hand, because the camera shutter did not operate at speeds compatible with handheld use; on the other hand, because the Super XX film used had lost so much speed that it would have taken tens of seconds to obtain a readable image.

So I used a more contemporary film camera, namely an Olympus OM-1, fitted with a Zuiko 135mm F2.8. For the test, the lens were used at F11, and I placed a polarizing filter in front of the lens in order to contain the speed to values compatible with the camera shutter.
The film is a Tmax 3200, used at 1600 ISO. At this value, the rendering is close to Super XX, although a little more grainy. Perhaps a Tri-X film would have been more appropriate.

In addition, the sights were dubbed in digital, with a Nikon D850 (46 Mpx) and a Nikkor AF-S 70-200mm F2.8 E FL-VR, set to the focal length of 135mm, at F5.6. The camera is set at nominal speed (ISO 64). The goal here is to compare with what is best in our time.

The test was carried out in full sun, at two different distances, 300 m / 985 ft and 400 m /1312 ft.

We agreed to position ourselves by locating the appropriate places in advance with Google Earth and the distance measurement mode, which is very useful here.

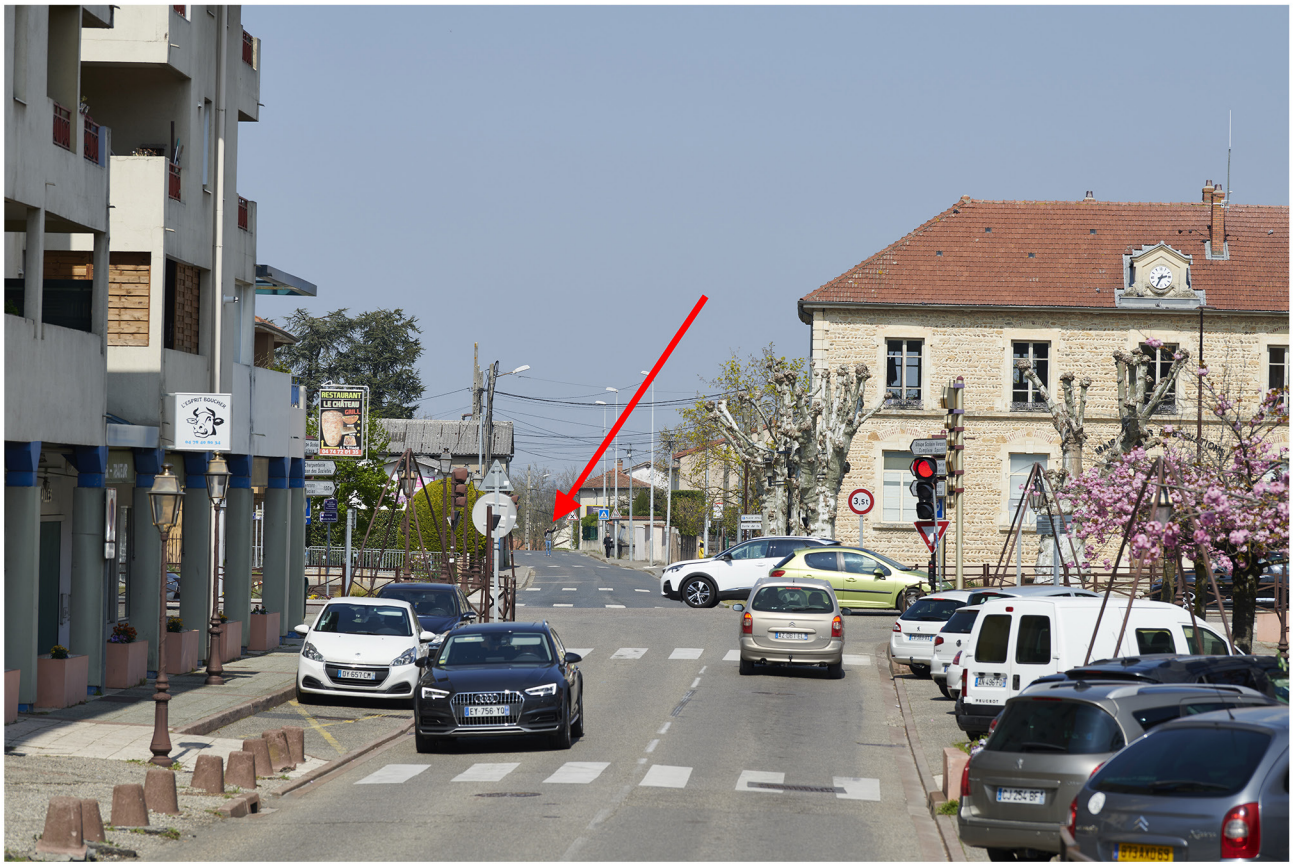
Distance 300 m / 985 ft :

The image below gives an idea of what I was seeing through the viewfinder of the D850. To be honest, it was almost impossible for me to see where my «German soldier» was, despite the 135mm focal length. It was only because I was conversing with Antoine by phone that I could see where he was positioned.

The weather was fine at the time of the test, a very favorable situation for the legibility of fine details, thanks to an increase in contrasts. On June 6, 1944, the situation was much worse.

Photo taken with the Nikon D850 with the 70-200mm F2.8 zoom at the focal length of 135mm.

Google Earth image showing the distance of 985 ft at the shooting location.

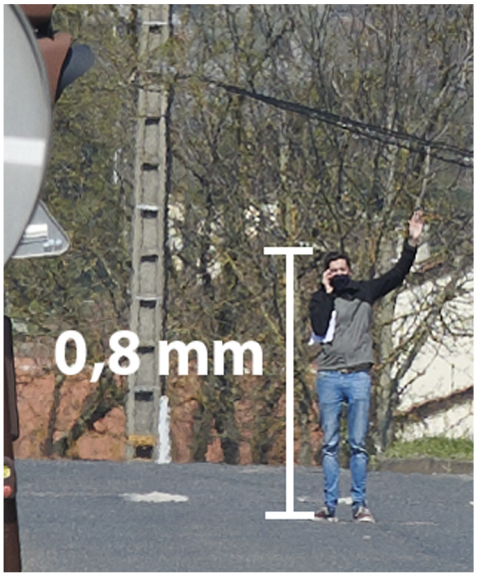


Nikon D850 and 135 mm, distance 985 ft.

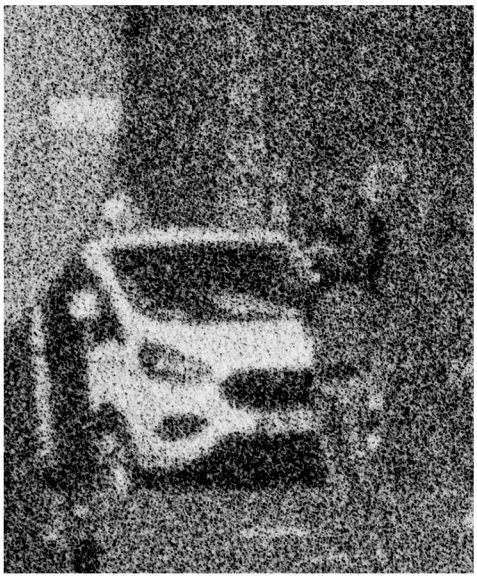
Above is the entire file obtained with the D850 and the 70-200 F-2.8 FL zoom lens at 135mm focal length and F-5.6.

Below, the same scene, with the same focal length, taken with the OM-1 and the fixed Zuiko OM 135 mm F-2.8 at F11 and polarizing filter (to maintain the speed in a range compatible with the camera) , on Tmax 3200 film (exposed to 1600 ISO, XTol developer).
In both images, at this size, the character is completely invisible. You probably wouldn't have noticed it without the arrow!

Olympus OM-1 and 135 mm, distance 985 ft.



Nikon D850 and 135 mm, distance 985 ft, detail.



Olympus OM-1 and 135 mm, distance 985 ft, detail.

Above, a strong enlargement of the same images. You have to magnify the files considerably to distinguish the character. For information, our guinea pig is 0.8 mm (0,031 inches) high on the 24X36 mm sensor. We therefore have the same size on the film negative.

We immediately see that the resolution of the film image is very insufficient to clearly record a human presence, let alone to understand what he is doing. The phenomenon is amplified by the lack of color information, which causes everything to be drowned in a medium gray. The figure does not stand out at all against the background of foliage, and it is fortunate that a vehicle was passing behind him when the picture was taken, otherwise he would have been indistinguishable.

We are moreover in a situation quite similar to the German soldier in olive green combat gear, against a backdrop of Norman foliage.

Note that the detail of the negative presented here was produced by photographing the document with a microscope lens mounted on a digital camera, allowing the image to be magnified until it penetrates the heart of the grains of silver. This gives an idea of the ridiculous size of the character on the negative!

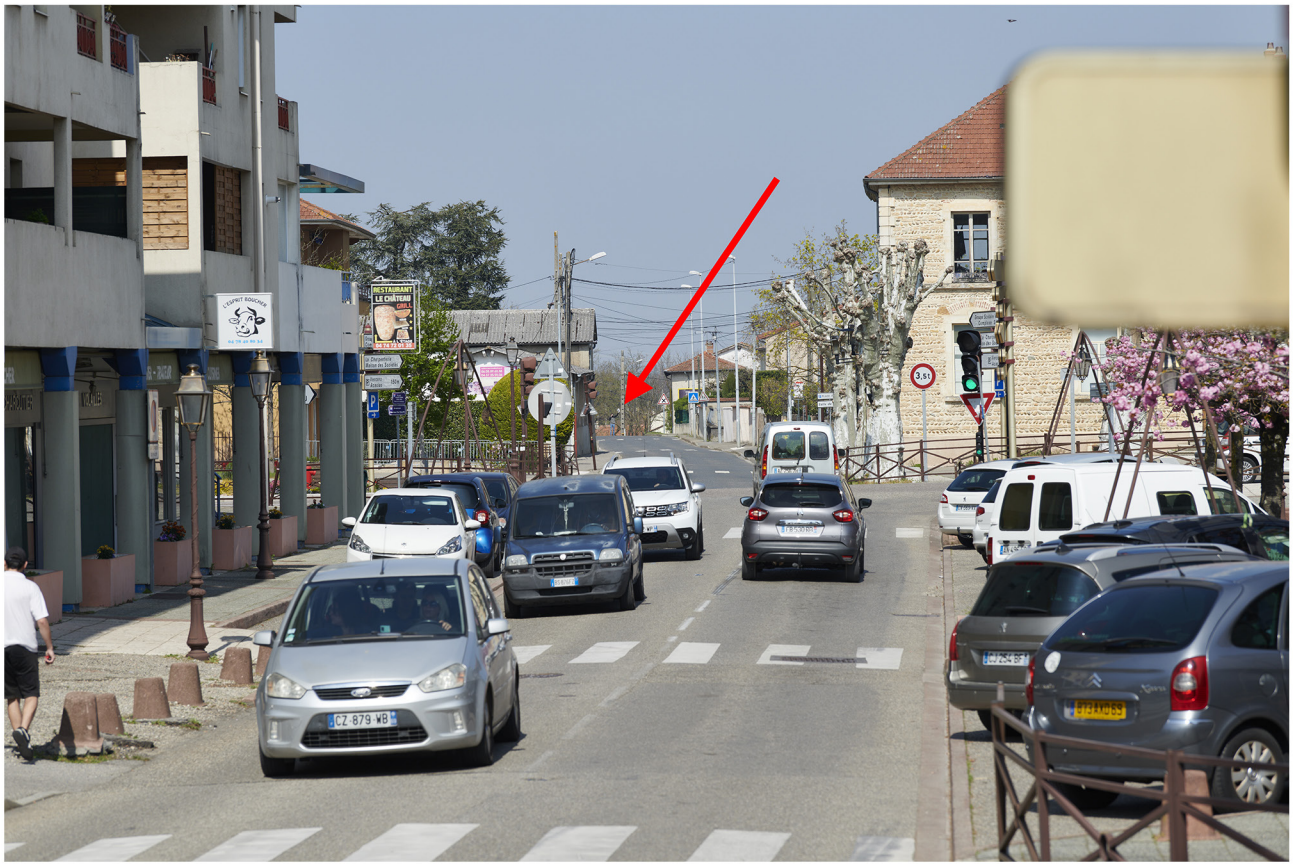
By the way, let us note the considerable progress of digital photography in recent years. The resolution of the image from the D850 and its zoom is exceptional.

Distance 400 m/1312 ft :

The test is repeated under the same conditions, this time at a distance of 1312 ft.

Photo taken with Nikon D850 and 70-200mm F2.8 at the focal length of 135mm.

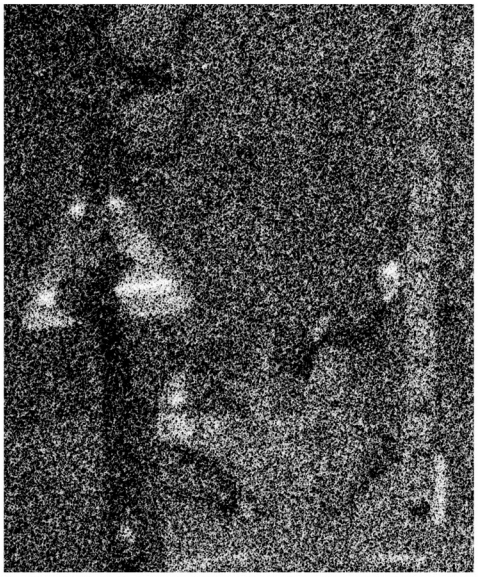
Google Earth image showing the distance of 1312 ft at the shooting location.



Nikon D850 and 135 mm, distance 1312 ft.

Olympus OM-1 and135 mm, distance 1312 ft.

Nikon D850 and 135 mm, distance 1312 ft, detail.



Olympus OM-1 and 135 mm, distance 1312 ft, detail.

We find ourselves in the same situation, made even worse by the increased distance. So much so that even looking very carefully at the detail of the negative above, it's almost impossible to make out anything.

The phenomenon is accentuated by the absence of a bright element in the background which would have made it possible to create a more favorable silhouette effect.

To conclude … temporarily!

These images clearly show that Robert Capa could not have successfully photographed a German soldier at a distance of 300 m / 985 ft, let alone at a greater distance.

So, would he have lied?

It remains difficult to say, because it is impossible to determine with certainty the real distance between the photographer and his supposed subject. Maybe the soldier was much closer than 300 m / 985 ft?

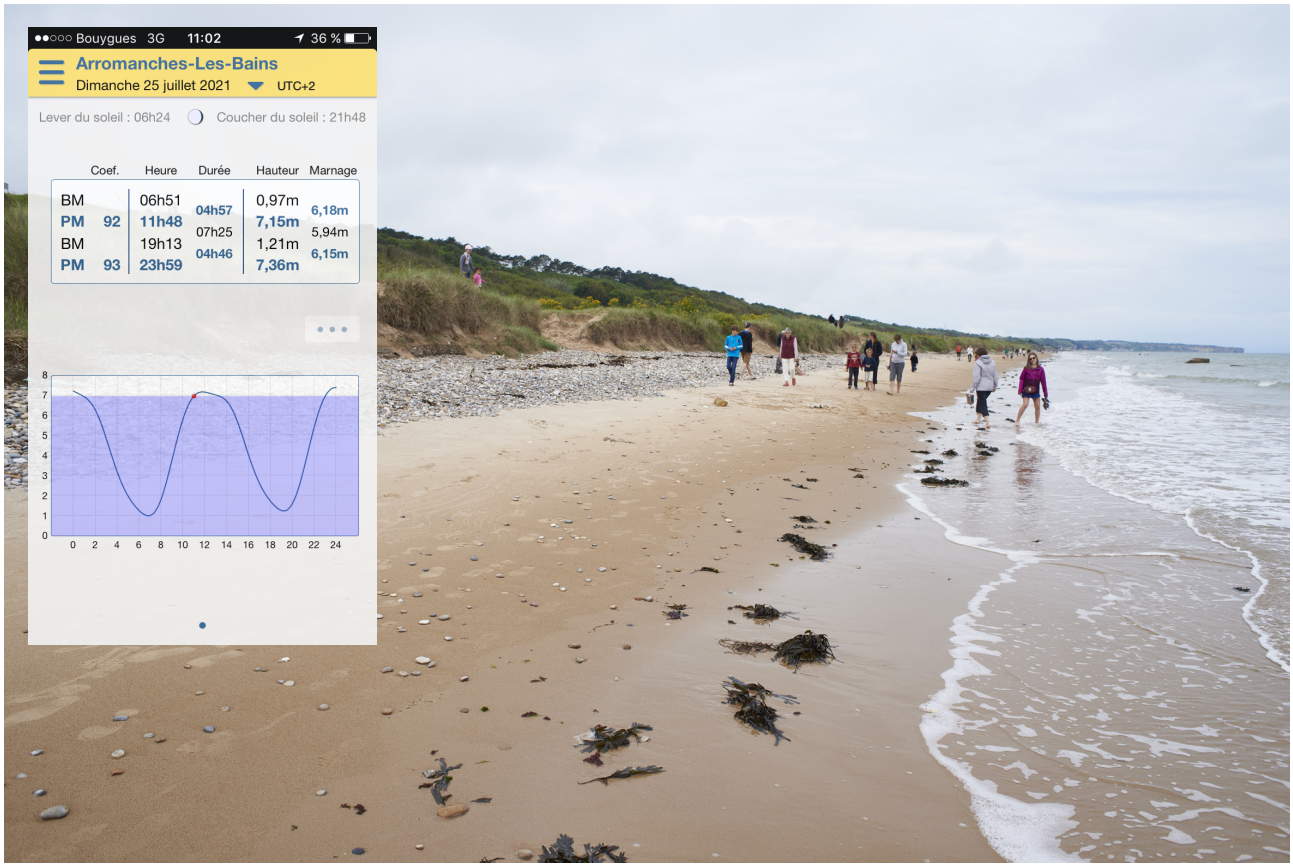
In addition, we must not overlook a secondary aspect, but one which is important here: the contrast between the subject and the background. If the soldier were positioned at the top of the landscape, his dark figure would have stood out clearly against the white sky background. In this case, despite its extremely small size, it could have been better distinguished.

In addition, the use for this test of the Kodak Tmax 3200 film turns out to be too grainy compared to what the Kodak Super XX can give, which looks more, by its grain and its resolution, to Tri-X or HP- film. 5 current.

The next step will therefore be to verify all these hypotheses in situ, either directly on Omaha Beach.

Omaha Beach checks.

When I got there, I immediately made the following observation : At high tide, the sea almost reaches the grass, as can be seen in this image taken on July 25, 2021 at 10:58 a.m. Basically there is hardly any sand left.



Sunday 25 July 2021, 10:58 a.m. High tide, coef 92.

I started out on the assumption that Capa had arrived at completely high tide, with a coefficient of 82, certainly lower than the 92 recorded on July 25, 2021, but all the same ... However, his photos clearly show a great distance of sand between the hill and its location.

The hill seen on June 6, 1944 in the morning, focal length 50 mm, distance unknown, but obviously large.

The hill seen on July 25 at high tide, standing at the edge of the shore, focal length 50 mm, distance ... a few meters.

In fact, my assumption was wrong, Capa did not arrive at high tide, but rather at mid-tide.
On this subject, I did not go into it further, but it would be interesting to wonder about his arrival time in the light of these tide stories ...

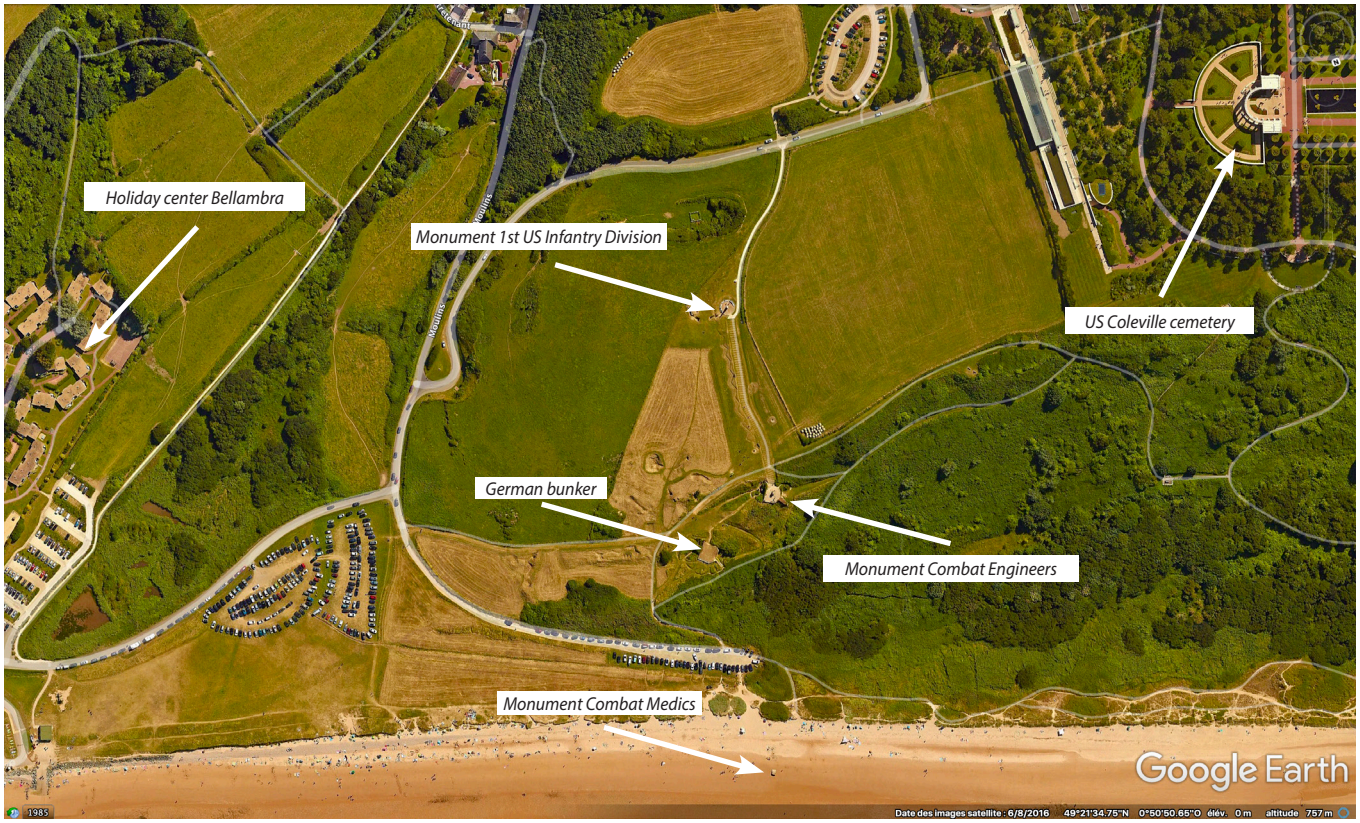
So, how do we know where he was? As the shoreline has changed completely since 1944, it is not possible to use a particular landmark. However, the hill itself, especially its height, shouldn't have moved too much.
So, I used his photos as a basis. I noticed the bulkiness of the hill compared to the frame.

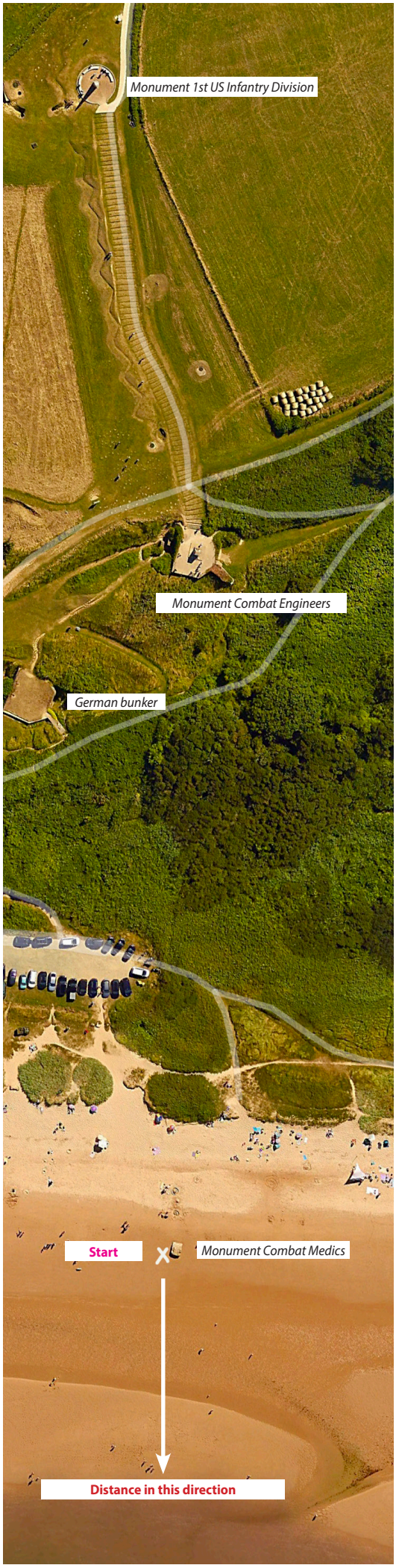
In red, congestion of the hill in the image of Capa (frame 32)

Then, I went to the beach at low tide so that I could have a large expanse of sand.

I voluntarily chose to position myself a little more to the left than the supposed place of the landing of Capa, simply because there is too much vegetation in front of this area, while on the left are many elements which will facilitate the task.

Here is a multi-image panorama (be careful, do not rely on the misleading perspective) indicating the location of the shot (200 m / 656 ft from the foot of the hill):





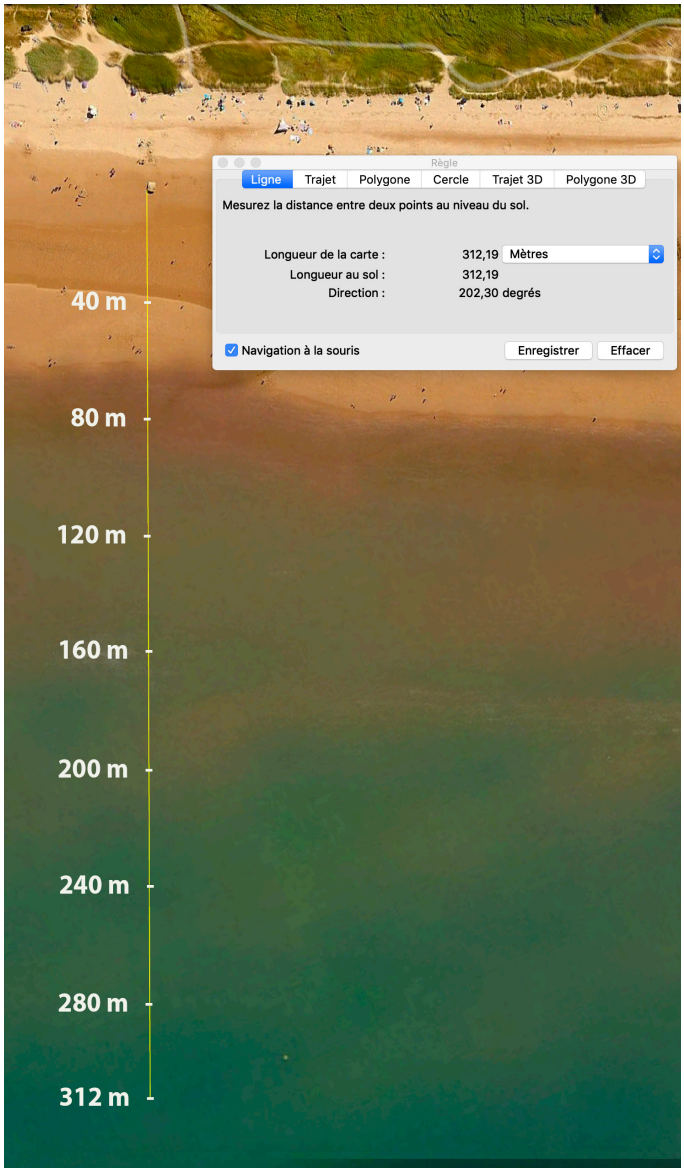
I stood in line with the monument on the beach, named Combat Medics (CM), and from there I headed straight for the sea.

Monument 1st US Infantry Division

Monument Combat Engineers

German bunker

Monument Combat Medics (CM)

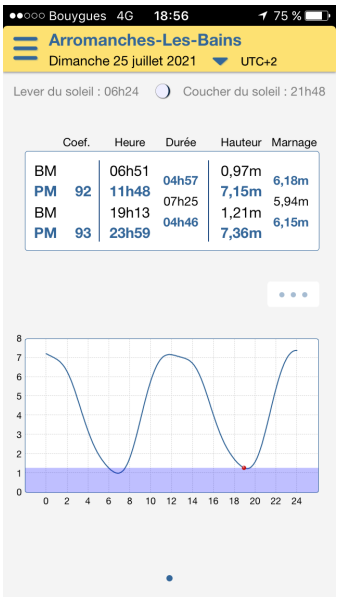


Then, every 40 m / 131 ft (i.e. 50 steps), I turned around and took a photo of the hill with a Nikon D750 equipped with a full-frame sensor and its fixed 50 mm, so the same field of view as the Contax of 1944. This, until arriving in the water.

The images were taken on July 25, 2021, at 6:50 p.m. Low tide, coef 93.

Then, when I got back to base, I compared my hill strip with the one seen in Capa's footage.

I was able to deduce the distance between Capa and the foot of the hill, all other things being equal.




Distance monument CM : 40 m / 131 ft


Distance monument CM : 80 m / 262 ft

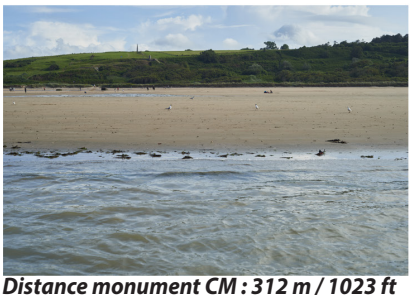

Distance monument CM : 120 m / 393 ft


Distance monument CM : 160 m / 525 ft

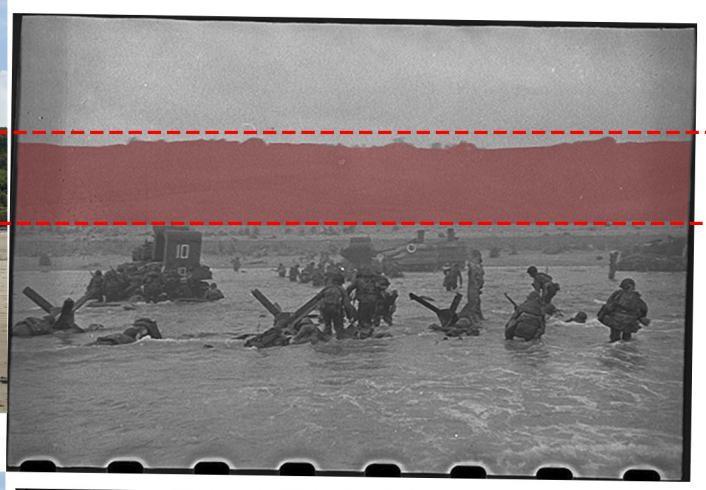

Distance monument CM : 200 m / 656 ft


Distance monument CM : 240 m / 787 ft


Distance monument CM : 280 m / 918 ft


Distance monument CM : 312 m / 1023 ft

Distance monument CM : 40 m / 131 ft



Distance monument CM : 80 m / 262 ft

Distance monument CM : 120 m / 393 ft

Distance monument CM : 160 m / 525 ft

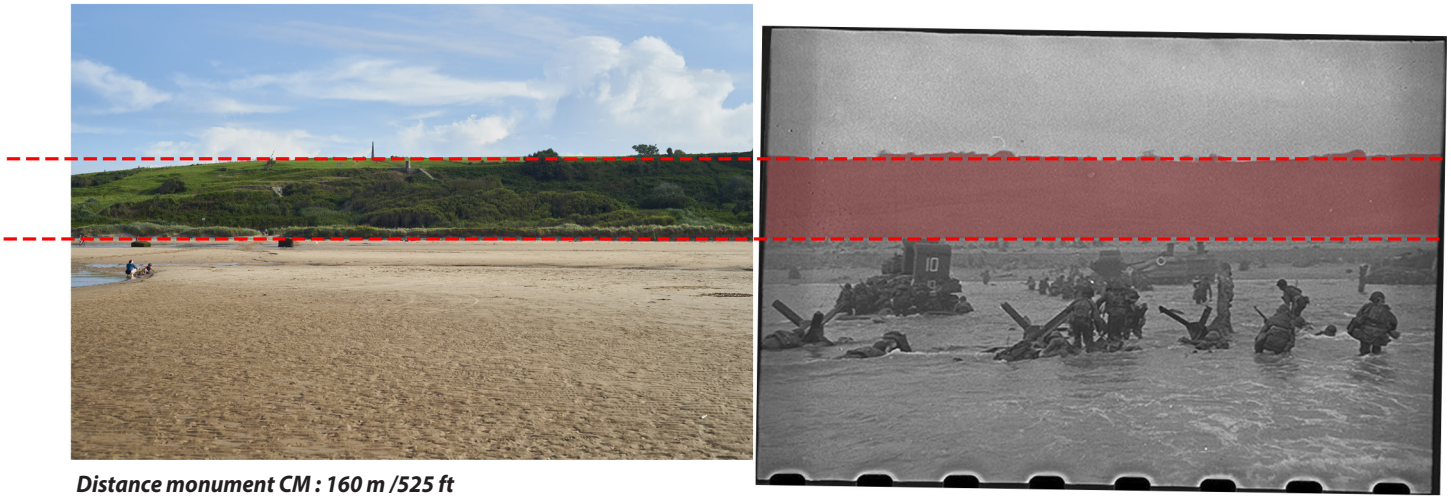
Distance monument CM : 200 m / 656 ft

Distance monument CM : 240 m / 787 ft

Distance monument CM : 280 m / 918 ft

Distance monument CM : 312 m / 1023 ft

Two photos seem compatible with the period image, taking into account the imprecision of the method:
- The one taken 160 m / 525 ft from the Combat Medics monument.
- The one taken 200 m / 656 ft from the Combat Medics monument.



Distance monument CM : 160 m /525 ft

Distance monument CM : 200 m / 656 ft

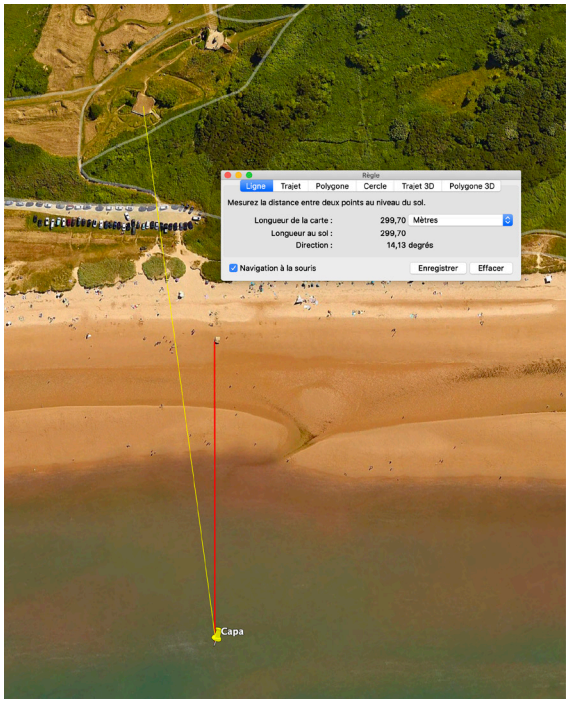
I decided to keep only the shortest distance (160 m/525 ft), in order to leave the advantage to Capa, but above all to take into account the fact that in his last images, he advanced to the tank n ° 10, about fifty meters (165 ft) closer.

On the hill, in front of this point of view, there are several interesting places where to locate our German soldier:
- The bunker.
- The 1st US Infantry Division monument.
- The Combat Engineers monument.

The location of the Combat Engineers monument will be rejected, as it is too close to the bunker.

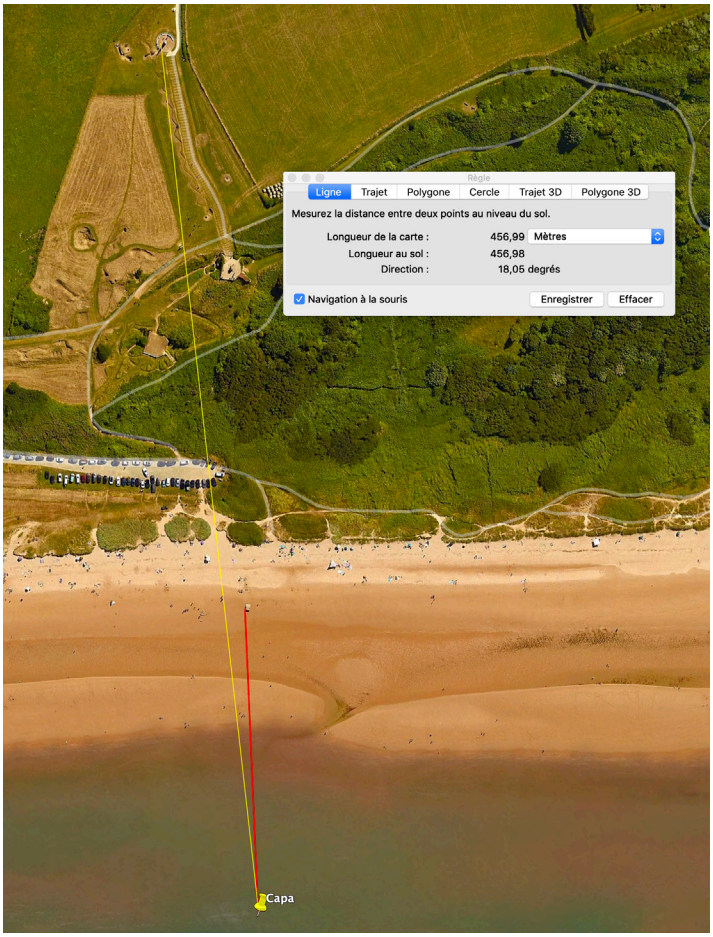
Our «German soldier» will therefore be placed in two different places:
- The bunker.
- The 1st US Infantry Division monument.

Now that we know where Capa was located on the beach, it's easy to use Google Earth to calculate the distance of each of these locations from the photographer.



Distance Capa-german bunker : 300 m / 984 ft

Which gives us two distances: 300 m / 984 ft and 457 m / 1500 ft.
These measurements are finally almost identical to those of the first test carried out with Antoine.



Distance Capa-monument 1st US Infantry Division : 457 m / 1500 ft

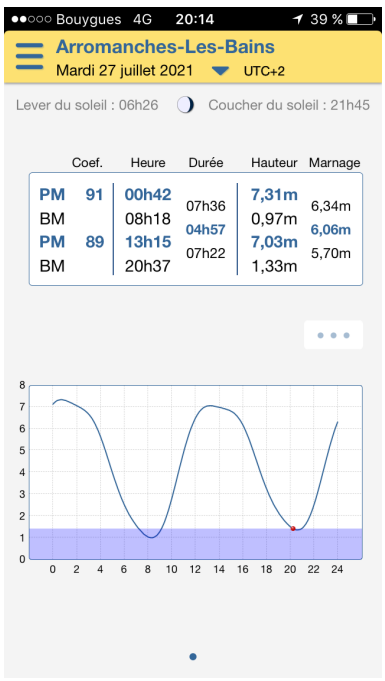
I could put it down to exceptional insight on my part, but I have to admit, it was more of a happy coincidence! Nevertheless, this validates the validity of my first deductions. We reassure ourselves as best we can.

We can therefore start the test on silver film.

It will be conducted as before, with an Olympus OM-1, fitted with its Zuiko 135mm F-2.8, closed at F11 (to be compatible with the maximum shutter speed-1 / 1000th). The film will be an ISO 400 Ilford HP-5 Plus, developed at 1 + 1 in the ID-11. This film has the advantage of having a rendering quite close to Super XX.

The shots were taken on July 27, 2021 around 8:00 p.m. Low tide, coef 89.

I had initially planned to do them in bad weather, in order to stick to the original parameters. Unfortunately, when the conditions were right to start the photos (low tide, «German soldier» available), and despite an ideal weather forecast (rain was on the program), the sky suddenly cleared, so good that a radiant sun reigned during the whole session! I was a victim of the changeable weather typical of this region.



The sun will therefore improve the readability of details by increasing the contrast, which does not suit me, but I did not have the opportunity to postpone my test.

Back to the scene. 50 mm focal length, 160 m / 525 ft from the CM monument.

Distance 300 m / 985 ft :

Nikon D750, 70-200mm ,135mm. Distance 300 m / 985 ft.

The color photos were taken with a Nikon D750, less resolute than the D850 used the first time (24 mpx instead of 46 mpx).

Surprisingly, our soldier stationed in the German bunker is clearly visible even though he is tiny in the image. Including in black and white, despite the background of vegetation.

Olympus OM-1, 135mm. HP-5 Plus film. Distance 300 m / 985 ft.

Nikon D750 and 135 mm, distance 300 m / 985 ft, detail.

Olympus OM-1 and 135 mm, distance 300 m / 985 ft, detail.

Above, a considerably enlarged detail of the previous images.

In the color photo, the red contrasts very well with the surroundings, of course, but in black and white, this characteristic disappears.
The character is still well discernible. We can clearly see that he is raising his arm, and that his other hand remains in the pocket.

Given this perfect readability, I wondered if I hadn't made a distance error during my tests. The one conducted the first time in St-Bonnet-de-Mure with Antoine had he really been driven 300 m / 985 ft away?
To verify this, after artificially enlarging the D750's file compared to the D850's (to bring it down to the same number of pixels), I compared the height of the two characters. And that's consistent, knowing that Antoine (1.98m) is much taller than Arthur (1.72m):

Distance 457 m / 1500 ft :

Nikon D750, 70-200mm , 135mm. Distance 457 m / 1500 ft.

This time, our soldier is 457 m / 1500 ft away, which is further than during the first test.
But with a significant change, as he now sits on top of the hill, his dark figure standing out sharply against the sky background.

We see that despite this distance, the character, yet really tiny, continues to remain legible.
Because the absence of parasitic elements and the contrast with the sky considerably improve things.

Olympus OM-1, 135mm. HP-5 Plus film. Distance 457 m / 1500 ft.

Nikon D750 and 135 mm, distance 457 m / 1500 ft, detail.

Olympus OM-1 and 135 mm, distance 457 m / 1500 ft, detail.

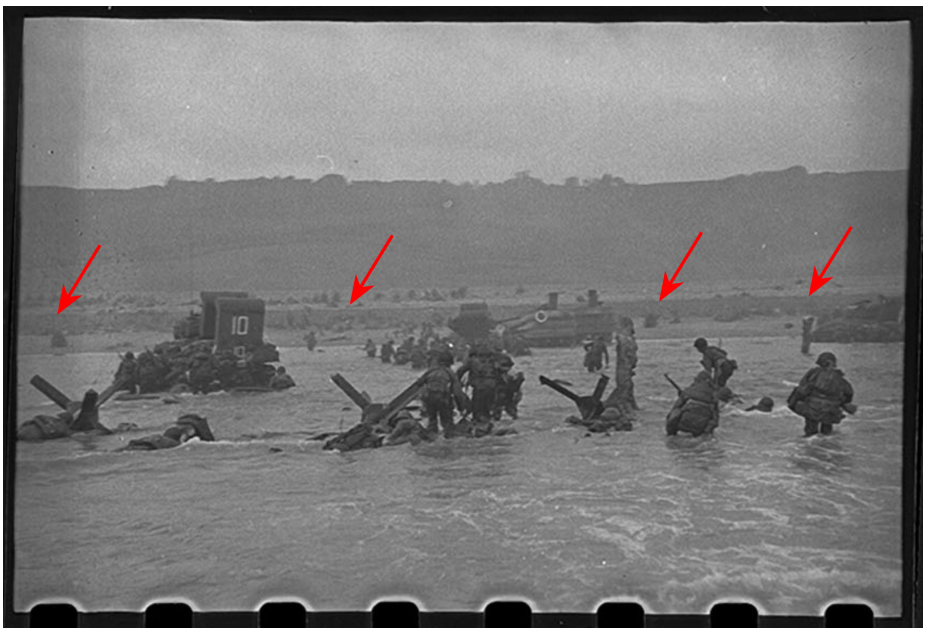
The enlarged detail confirms this. Despite the enormous distance, the character continues to be readable. You can clearly see that he has his arm raised and one hand in his pocket.

It's almost the end...

These experiences on site allowed me to revise my first judgment, adding nuances.
Yes, Capa was able to distinguish a German soldier from where he was ... provided we assume that all of my estimates are correct (Capa's location on the beach, distance, etc.). And in fact, when the pictures were taken, I could clearly see the presence of my «soldier» in his bunker, even with the naked eye.

My tests are quite favorable: I have never enjoyed the same gloomy weather I encountered on June 6, 1944, and it is a game-changer by improving the reading of fine details.

Add to that an Olympus Zuiko telephoto lens of much better quality than its WWII equivalent, with a shutter speed that guarantees the absence of motion blur, and moreover used at its best diaphragm (F11, while Capa, for lack of light early in the morning and in bad weather, was surely forced to use the full opening, certainly almost blurry). These last two points are crucial and can change everything.



However, we cannot ignore the fact that Sam Fuller also mentioned the possibility that Capa could have taken the image from the pebbles (whose barrier they formed began about fifty meters -164 ft- after tank No. 10, according to historian Charles Herrick. This barrier no longer exists today).

These pebbles form a band that can be seen in Capa's photos (see arrows above). If so, that does not change much in our analysis, as it favors the test of only 50 meters (164 ft).

To conclude

We can now answer the question:

At the distance that separates the pebble barrier to the top of the hill (at best), could Capa have seen a German officer directing the fire and recognizing it as such, and moreover, made an image of that scene clear and defined enough to be publishable, using the most likely telephoto lens he might have had?

Technically, yes, it is. Capa could have photographed a silhouette at this distance with a 135mm telephoto lens. But to say that it would have been publishable is to be very optimistic!

In truth, it is reasonable to think that there are:
- Very unlikely that he brought a telephoto lens (we do not know of any images taken by him at telephoto in this period).
- Very unlikely that he could have pulled off a sufficiently sharp image.
- Very little chance that this image could have been published. Just remember the size of the character in the photos.

And there is even less chance that all of those images are gone, now that it is known that it is almost impossible that any images could have been destroyed by heat in the laboratory or by seawater.

Tristan da Cunha, november 2021.

Thanks to Rob McElroy, Charles Herrick and Allan Coleman for providing essential clarifications and correcting some errors in this study.

Thanks to my wife Stéphanie.

Thanks to my son Arthur and my friend Antoine for playing the role of the German soldier so well!

Thanks to the St Bonnet-de-Mure Photo Museum for giving me their copy of the Contax II with its accessories.