

The WW II Saint-Pabu German Radar Camp and the *Stützpunkte Re 03, Re 04*

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Abstract

In previous articles different German radar bases have been considered. The preservation states of their components and their organization have been analyzed. This article further deepens the theme of the German radar surveillance during the WW II on the Atlantic Wall by taking into consideration the German radar camp of Saint-Pabu (Finistère-FR) and its defence *Stützpunkte Re 03, Re 04*. Its history, the preservation state of its components, its organization and how said components have been integrated in a modern urban context are described.

Keywords

Saint-Pabu, German, Radar, Surveillance, Atlantic Wall, Finistère, France

1. Introduction

In previous articles the German radar bases *Mandrill* at Monterfil near Rennes (Ille et Vilaine-FR) (Dupont et al. 2007), *Made* at Les Mees (Sarthe-FR) (Tomezzoli & Pottier 2015), at Keringar Vihan, Kervingam-Kerdené and Vougo-Kerizoc (Finistère-FR) (Tomezzoli 2017), provided with radars *Freya* and *Würzburg*, have been considered. The preservation states of their components and their organization have been analyzed. The Saint-Pabu radar camp (Finistère-FR), because of its leading radar surveillance role, should now be considered.

2. History of the Saint-Pabu German Radar Camp

Soon after the invasion of France on June 1940, after the departure of the German invasion forces, the 251. *Infanterie-Division* of the *Heer* (Army) occupied the district of Saint-Pabu. It remained quartered on the district up to April 1941. After it, the 10. *Kompanie* of the 471. *Infanterie-Regiment* (*Feldpost* 32334C–Field Post nr. 32334C) quartered in the Saint-Pabu village. However, soon both

Kriegsmarine and *Luftwaffe* realized the strategic importance as surveillance position of the plateau, 50 m high, near the village and in front of the sea. Therefore, a camp was erected there for hosting a *Kriegsmarine* radar station equipped with two radars operated by a detachment of the 1. *Kompanie* of the 3. *Marine-Funk-Meß-Abteilung* (3rd Navy Radio Measurement Unit) (*Feldpost* 01512F) and a *Luftwaffe* radar station equipped with two radars operated by a detachment of the 25. *Kompanie* of the 112. *Luftgau-Nachrichten-Regiment* (112th Air Sector Transmission Regiment) (*Feldpost* L42432). The *Luftwaffe* radar station received identification code *Stützpunkt Re 510* (support point Renan 510) and cover name *Pinguin*. In April 1943 the 112. *Regiment* was re-organized by changing its name and preserving its Field Post number. The 10. *Flugmelde-Leit-Kompanie* 54 (Air Reconnaissance Command Company 54 of the 10th Regiment) was then in charge of the operation at the *Re 510*. The camp air defense was ensured by the 4. *Kompanie* of the 3. *Batterie* (3rd Battery) of the *Leichte Flak Abteilung* 752 (Light Flak Unit 752) (*Feldpost* L32999) and after by the *V. Abteilung 5./497 Flak Batterie*. A section of the *Landeschützen Kompanie* 13/XIII (13th Territorial Surveillance Company of the 13th Regiment) (*Feldpost* L00421) formed by 35 soldiers and the *Kompanie* 369/VI (*Feldpost* L39026) were charged of the security of the camp. The security of the camp was ensured from June 1942 to Mai 1943 by the *Landshützen-Zug* 47/III. Five *Stützpunkte* (support points) coded respectively *Re 01–Re 05* defended the camp, the entrance of the Aber-Benoit and the Kervigorn beach (Floch 2012).

At the beginning the camp was provided with 2 × *FuSE 65 Würzburg Riese*, 1 × *FMG 41 G (fB) Freiburg I* and 2 × *FuSE 80 Freya* and after with 1 × *FuMG 401 Freya MZ*, 1 × *FuMG 450 Freya*, 1 × *FuSE 62D* (Lippmann 2016).

The camp extended East–West for about 1 km and North–South for about 700 m. It comprised four radars, four observation places, eight bunkers, a relevant numbers of anti-aircraft guns, three tobrucks for 40 C.A., twelve barracks, a kitchen, light cisterns, one motor-pump, lavabos and one pool. Foreseen for 1200 soldiers, it actually hosted at maximum about 500–600 ones (Pinczon de Sel 1947-1948).

The *Oberfeldwebel* (Sargent 1st Class) Fritz W., the *Obergefreiter* (Corporal Major) Weber H. and the *Obergefreiter* Behrendt G. dead on 8th August 1944 in Saint-Pabu during the Liberation combats. The last 287 soldiers of the camp garrison surrendered on 12th August 1944 at 21:00 (Floch 2012).

The US Army instituted a camp for German prisoners of war (*POW*) near the camp. Probably, it was this camp that received, after the war, French suspected as collaborationists, black market operators, clandestine slaughters, before their transfer to the camps of Saint Charles near Quimper and Pont-le-Buis (Floch 2012).

3. The Saint-Pabu Radar Camp

The camp components (Figure 1) were spread on the municipality of Saint-Pabu, on the two adjacent localities of Le Bous and Teven ar Reut. The visits



Figure 1. Saint-Pabu radar camp components: (1) 1st *V2a* and *L410A*, (2) 1st *Freya* radar emplacement, (3) 1st *Würzburg-Riese* radar emplacement, (4) *L479 Anton*, (5) bunker *Vf* integrated in a modern house, (6) area hosting camp components, (7) 2nd *Freya* radar emplacement, (8) *Vf* bunker covered with terrain and tobruck, (9) 2nd *V2a*, (10) East camp entrance, (12) 2nd *Würzburg-Riese* radar emplacement, A rue Avel Vor, C rue Corn ar Gazel, S rue du stade [Geoportail].

took place on 05/01/2017 and on 11/05/2017.

The identified camp components were the followings (**Figure 1**).

A 1st *V2a* (48°33'59.01"N, 4°37'19.07"W) (**Figure 2**, **Figure 3**) about 8 × 8 m, emerging about 1.5 m from the ground. Its emerging concrete structure was in a good preservation state without damages due to combats. The presence on the coverage of a chimney conduit for a *Festungsofen WT80* (fortress gas-secured oven), covered by a stone, suggested that it was heated if necessary and therefore intended for hosting one or two groups of soldiers. The proprietor explained that, an inclined trace on the external concrete structure, near the entrance indicated a disappeared stair. It was in connection with an entrance stair, now clumsy, for permitting to the soldiers exiting the *V2a* interior a rapid access to the coverage which probably hosted a single or double 2cm *Flak* gun. A protection wall on one side flanked the entrance stair which gave access to an interior corridor provided, on one side, with the entrance to a single room. The room preserved a wall and ceiling white painting and was cluttered by materials. On the walls, no traces of a thermal insulation system. A wall preserved the emergency exit and another adjacent one hole indicating a connection with the chimney conduit on the coverage. All the original room furniture and electrical



Figure 2. On the left the 1st V2a, on the right the I410A



(a)



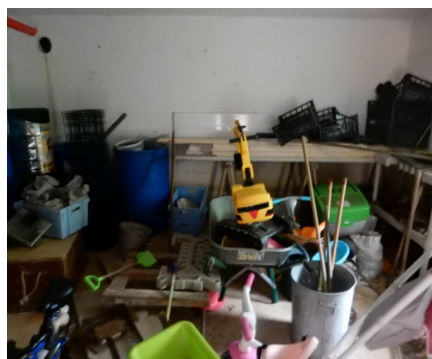
(b)



(c)



(d)



(e)



(f)

Figure 3. 1st V2a (a) coverage, near one side a chimney conduit covered by a stone (b) entrance with protection wall, on the left, trace of the stair to access the coverage; (c) entrance stair; (d) internal room; (e) internal room, cluttered by materials, on the upper left of the wall a chimney hole (f) side wall with emergency exit.

connections and devices disappeared.

A *L410A* ($48^{\circ}33'59.16''\text{N}$, $4^{\circ}37'18.32''\text{W}$) (**Figure 2, Figures 4-6**), about 5 m far from the 1st *V2a*, partially buried in the ground. Its emerging concrete structure was in a good preservation state without damages due to combats. A stairs descending under the terrain level gave access to two entrances defended by a close combat room. The proprietor explained that the rectangular slabs at the base of the entrances covered the still operating bunker drainage system and that a 40×50 cm niche on one side of one of the entrances hosted a radio post. An original, rusted, armored door was at its place at the entrance of each respective gasloch. Another original, rusted, armored door was at its place at the exit of the each respective gasloch. Each gasloch gave access to a crew room preserving on the walls the traces of the supports for tilting beds. A single door allowed communication between the two crew rooms. One crew room gave access to the non-commissioned officer room and the ventilation room which preserved conduits of the original ventilation system. An original, rusted, armored door was at its place at the entrance of the close combat room. All the rooms were empty, deprived of all their original furniture and electrical connections and devices. The rooms preserved their rusted metallic ceiling and on the walls, no traces of a thermal insulation system and electrical connections. The octagonal gun emplacement on the *L410A* coverage, hosted an entrance on one side and ammunitions niches on each other internal sides. At its centre, well preserved, a circular, concrete base for the *Flak* gun. The kind of *Flak* gun placed on the base is unknown, but probably it was a single or double, 2 or 3 cm *Flak* gun. The pebbles of the Ero Vili (**Tomezzoli & Marzin 2015**) were clearly visible on the base. The proprietor explained that the niche provided with a 30 cm high wall, functioned as water cistern for cooling the barrel of the gun. He also declared that during the bunker restoration many *Flak* gun ammunitions were found near the entrances.

A 1st *Freya* radar emplacement ($48^{\circ}33'56.31''\text{N}$, $4^{\circ}37'19.72''\text{W}$) (**Figure 6**) about $10 \times 10 \times 3$ m, identified thanks to the indications of the proprietor. It was unrecognizably integrated in a modern house, of which it formed the lower portion, under the roof. Its concrete structure was in a good preservation state without damages due to combats. The external walls presented a slight inclination of few degrees towards the interior and a thickness of about 1 m. The emplacement appeared to conform to a Type 5 square splitter wall for radar *Freya*, lacking labyrinth entrances. It was built with local stone bricks covered by a concrete layer. The proprietor declared that, at the interior, nothing remained of the original emplacement. A small shed on one side was built with the same brick stones as the emplacement and its interior penetrated in the corresponding emplacement side without entering the emplacement. After the war, a shed was added on one other adjacent emplacement side.

A 1st pool ($48^{\circ}33'55.74''\text{N}$, $4^{\circ}37'20.74''\text{W}$) (**Figure 6(h)**) about 9×15 m, in the garden, near the 1st *Freya* radar emplacement. Its sides were formed by concrete and its interior was invaded by the vegetation. At a side of the pool, about 6 m



(a)



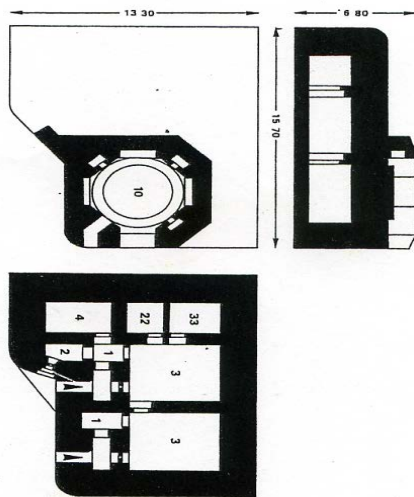
(b)



(c)



(d)



(e)



(f)



(g)



(h)



Figure 4. *L410A* (a) vision from the 1st *VZa*; (b) access stair to the entrances; (c) entrances with circular, armored air intakes and rectangular slabs covering the drainage system, on the left metallic coverage of the close combat room; (d) metallic coverage of the close combat room, details; (e) *L410A* plan: 1. gasloch, 2. close combat room, 3. crew room, 4. ammunition room, 10. *Flak* gun emplacement, 22. ventilation room, 33. non-commissioned officer room (Rudi, 1998); (f) gun embrasure of the close combat room; (g) drainage system at the interior; (h) gas loch entrance armored door; (i) other gas loch entrance armored door; (j) other gas loch exit armored door, crew room and single communication door between the crew rooms; (k) crew room, on the upper side of the wall hole for a *Festungssofen WT80* conduit; (l) on the left ventilation room, on the right non-commissioned officer room; (m) armored door of the close combat room; (n)-(o) ventilation room with portions of the original ventilation system conduits.



(a)



(b)



(c)



(d)



(e)

Figure 5. L410A gun emplacement (a) circular, concrete base for the *Flak* gun; (b) emplacement entrance and ammunition niches; (c) ammunition niches; (d)-(e) dog footprints on the circular, concrete base.

far, a difference in the grass betrayed an area on which a barrack laid.

A bunker ($48^{\circ}33'55.58''\text{N}$, $4^{\circ}37'21.64''\text{W}$) (**Figure 6(g)**) about 7×4 m, in a garden adjacent to the 1st *Freya* radar emplacement garden, about 10 m away from the 1st pool. It emerged about 30 cm from the terrain and was provided with an about 5×1.5 m concrete, access ramp with protecting walls in stone bricks, extending in the direction of the 1st pool.

An *L479 Anton* ($48^{\circ}33'58.48''\text{N}$, $4^{\circ}37'15.97''\text{W}$) (**Figure 7**) for day and night fighter control buried in the terrain, of which only the concrete coverage



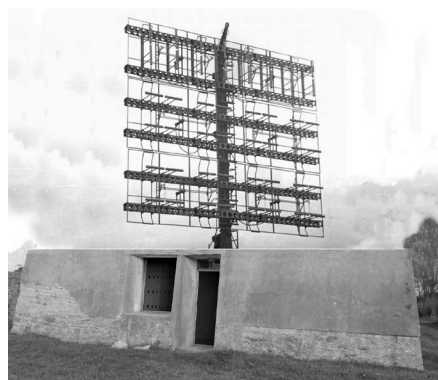
(a)



(b)



(c)



(d)



(e)



(f)



(g)

Figure 6. 1st Freya radar emplacement (a) emplacement integrated in a modern house, on the left possible barrack area, on the right the 1st pool; (b) after war shed on a side of the emplacement; (c) small shed on the adjacent side; (d) emplacement reconstruction - Freya radar starting image (von Kroge 1998); (e) possible barrack area; (f) 1st pool invaded by the vegetation; (g) bunker near the 1st pool, concrete access ramp.



(a)



(b)



(c)



(d)



(e)



(f)



(g)

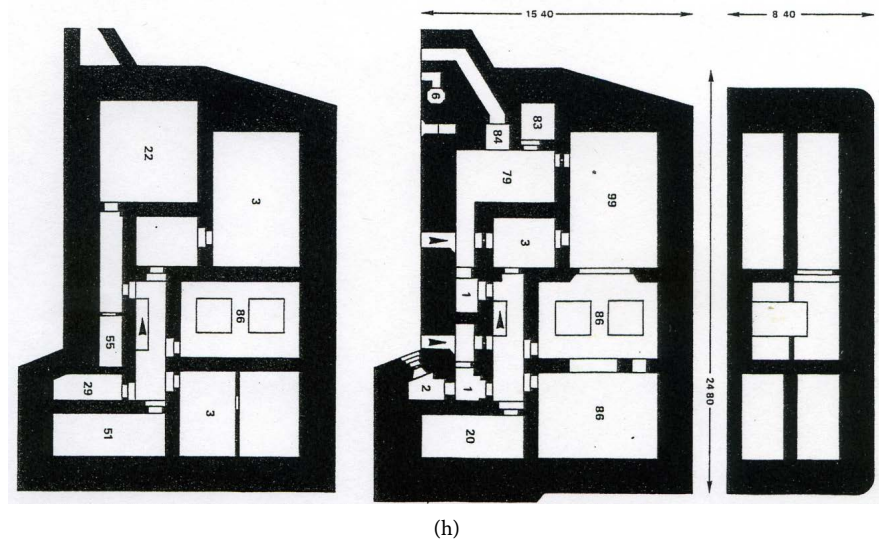


Figure 7. *L479 Anton* (a) general view; (b) view to the East; (c) view to the West; (d) concrete structural damage on one side; (e)-(f) external observation post cluttered by materials; (g) periscope conduit; (h) *L479* plan: 1. gasloch, 2. close combat room, 3. crew room, 6. observation post, 20. radio room, 22. ventilation room, 29. store room, 51. telephone room, 55. store room, 79. emergency generator room, 83. transformer room, 84. recooling room, 86. command post, 99. fuzes room (Rudi, 1998).

emerged. The coverage was in a good preservation state with a minor concrete structural damage on one side, not due to combats or bombardments. It hosted an external observation post cluttered by materials and a periscope conduit. The entrances were buried in the terrain, so that an inspection of the interior was not possible.

The position of a disappeared 1st *Würzburg-Riese* radar emplacement ($48^{\circ}33'58.25''\text{N}$, $4^{\circ}37'23.69''\text{W}$) (Figures 8(a), 18) about 100 m North - West from the 1st *Freya* radar emplacement, on a private terrain. It was demolished after the war and only a difference in the grass betrayed its past presence.

A 14×6 m *Vf* surmounted by a modern house ($48^{\circ}34'1.07''\text{N}$, $4^{\circ}37'0.3''\text{W}$) (Figure 8(b)). It was similar to the 1st *Vf2a* and provided with a stair for rapid access to the coverage, now for accessing the house entrance, on which was probably placed a single or double, 2 or 3 cm *Flak* gun.

An area ($48^{\circ}34'2.06''\text{N}$, $4^{\circ}37'2.55''\text{W}$) (Figure 9) about 26×30 m which hosted several camp components. An inclined access ramp ($48^{\circ}34'2.06''\text{N}$, $4^{\circ}37'2.55''\text{W}$) about 6×2 m, provided with protection walls in bricks possible access to a tunnel or to one or more underground rooms. It was cluttered by materials and inaccessible. A possible 2nd pool ($48^{\circ}34'1.52''\text{N}$, $4^{\circ}37'2.06''\text{W}$) about 3×5 m, partially covered by the terrain and invaded by water. A possible small bunker or tobruck ($48^{\circ}34'2.55''\text{N}$, $4^{\circ}37'1.97''\text{W}$) completely buried in the terrain.

A *Vf* ($48^{\circ}34'4.49''\text{N}$, $4^{\circ}36'58.44''\text{W}$) (Figure 10(a)) covered by terrain. Its type and purpose are unknown. It is possible that on its coverage too was placed a single or double, 2 or 3 cm *Flak* gun.



Figure 8. (a) position of the 1st Würzburg-Riese radar emplacement on a private terrain; (b) *Vfi* integrated in a modern house.

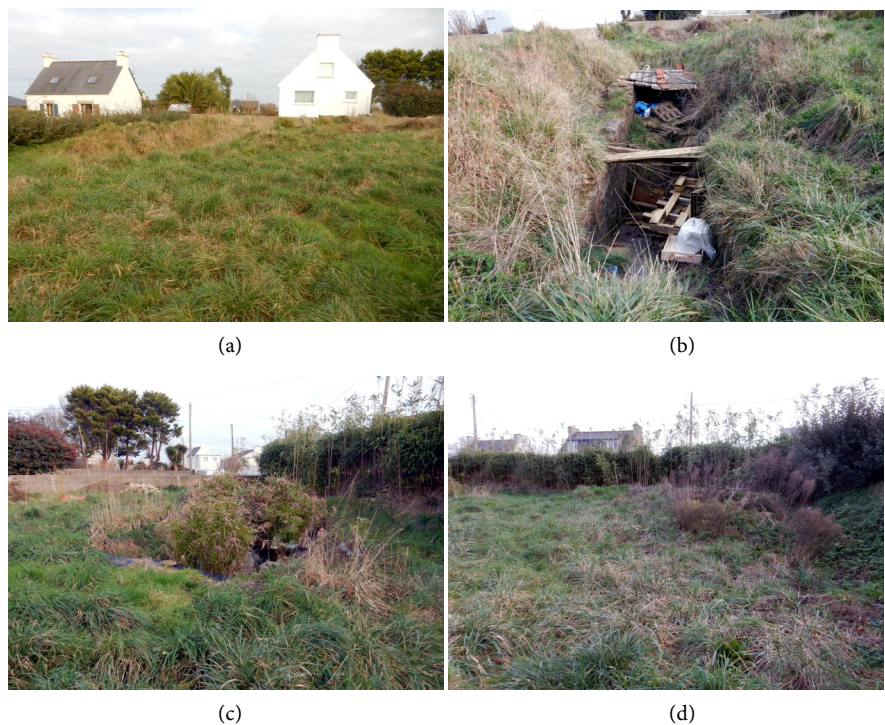


Figure 9. Area with camp components (a) North side vision; (b) inclined access ramp; (c) possible 2nd pool covered by terrain and invaded by water; (d) South side vision with a possible small bunker or tobruck covered by the terrain.

A tobruck ($48^{\circ}34'4.7''\text{N}$, $4^{\circ}36'57.43''\text{W}$) (**Figure 10(b)**) near the *Vfi*. It was partially buried in the ground. The aperture of its combat room and its entrance were obstructed by terrain, so that the inspection of its entrance room and combat room was not possible.

A 2nd *VZa* ($48^{\circ}34'2.25''\text{N}$, $4^{\circ}36'56.37''\text{W}$) (**Figure 11**) about 8×8 m, buried in the terrain, having a square gun emplacement on its coverage, partially invaded by vegetation. Its entrances were buried in the terrain, so that an inspection of the interior was not possible. The gun emplacement, hosted a labyrinth entrance on one side and ammunitions niches on each other internal sides. At the centre, well preserved, a triangular, concrete base with a circular niche on two adjacent



Figure 10. (a) Vf covered by terrain, (b) tobruck near the Vf, partially covered by terrain.



(a)



(b)



(c)

Figure 11. 2nd *Vf2a* (a) *Vf2a* general vision, on the right the rue Avel Vor; (b) square *Flak* gun emplacement with concrete triangular base and ammunition niches; (c) concrete triangular base with two niches for *Flak* gun support legs.

vertexes for a single or double, 2 or 3 cm *Flak* gun support legs.

The position of the 2nd *Freya* radar emplacement (48°34'2.15"N, 4°36'58.98"W) (**Figure 12(a)**), on the rue Avel Vor. It was occupied by a modern house. Nothing of the original 2nd *Freya* emplacement remained visible.

The 2nd *Würzburg-Riese* radar emplacement (48°34'2.15"N, 4°36'58.98"W) (**Figure 12(b)**), on the rue du stade. It was completely covered by vegetation and slightly visible.

The search on the terrain for possible remains of *Flak* reflectors emplacements, barracks and a metallic barrier that encircled the camp provided no result.

4. The *Stp Re 03* and *Stp Re 04*

The components of the *Stützpunkte* (support points) *Re 03* and *Re 04* (**Figure 13**) were spread on the Corn ar Gazel beach (*Re 03*) and the Corn ar Gazel point (*Re 04*). The visit took place on 11/05/2017.

The *Re 03* components identified on the Corn ar Gazel beach were the followings (**Figure 13**).

A *V2d* ($48^{\circ}34'32.13''\text{N}$, $4^{\circ}37'37.46''\text{W}$) (**Figure 14**) about 8×10 m, the only *Re 03* component identified on the Corn ar Gazel beach. It was partially covered by the terrain and its emerging concrete structure was in a good preservation state without damages due to combats. It is possible that a stair, buried in the terrain, allowed a rapid access to the coverage on which was probably placed a single or double, 2 or 3 cm *Flak* gun. The entrances were buried in the terrain, so that an inspection of the interior was not possible.

One of the thousand concrete tetrahedrons positioned, during the war, on the beach for counteracting allied landings, placed near the *V2d* during rehashing works of the beach.



Figure 12. (a) 2nd Freya radar emplacement occupied by a modern house; (b) 2nd Würzburg-Riese radar emplacement.



Figure 13. *Re 03* and *Re 04*: AB. Ar Gazel beach (*Re 03*), AP. Ar Gazel point (*Re 04*), 1. *V2d*, 2. 1st tobruck, 3. 2nd tobruck, 4. 3rd tobruck, 5. position of the demolished *V2d*.



Figure 14. *V2d* at Corn ar Gazel beach (a) connection trench; (b) front vision; (c) side vision; (d) side vision, on the left concrete tetrahedron.

The *Re 04* components identified on the Corn ar Gazel pointe were the following.

A 1st tobruck ($48^{\circ}34'42.38''\text{N}$, $4^{\circ}37'33.37''\text{W}$) (**Figure 15**), probably for a mortar, partially emerging from the sandy ground. The circular aperture of its combat room was closed by wooden boards covered by a concrete layer. Its emerging concrete structure was in a good preservation state without damages due to combats. The unobstructed entrance allowed ascertaining that entrance room and combat room were in a good preservation state, although the first was partially invaded by sand and debris arrived through the entrance.

A 2nd tobruck ($48^{\circ}34'41.50''\text{N}$, $4^{\circ}37'33.78''\text{W}$) (**Figure 16**) partially emerging from the sandy ground. The circular aperture of its combat room was closed by wooden boards covered by a concrete layer. Its emerging concrete structure was in a good preservation state without damages due to combats. The unobstructed entrance allowed ascertaining that entrance room and combat room were in a good preservation state, although the first was partially invaded by sand and debris arrived through the entrance. In the combat room two steps protruded from the wall.

A 3rd tobruck ($48^{\circ}34'42.26''\text{N}$, $4^{\circ}37'34.79''\text{W}$) (**Figure 17**) partially emerging from the sandy ground. The circular aperture of its combat room was closed by wooden boards covered by a concrete layer. Its emerging concrete structure was in a good preservation state without damages due to combats. The unobstructed entrance allowed ascertaining that entrance room and combat room were in a good preservation state, although the first was partially invaded by sand and debris arrived through the entrance. In the combat room two steps protruded from the wall.



(a)



(b)

(c)

Figure 15. 1st tobruck (a) entrance and aperture of the combat room covered by a concrete layer; (b) entrance room partially invaded by sand and debris; (c) combat room, on the upper side aperture closed by wooden boards.

The place of a disappeared *V2d* ($48^{\circ}34'32.13''\text{N}$, $4^{\circ}37'37.46''\text{W}$) near the 3rd tobruck. Nothing remained visible of this bunker.

5. The Radar Camp and the *Stp Re 03, Re 04*

The components were largely distributed on the camp for reducing the probability to be hit in case of attacks or bombardments. The distance between the 1st *Freya* radar emplacement and the 1st *Würzburg-Riese* radar emplacement was about 100 m and the distance between the 2nd *Freya* radar emplacement and the 2nd *Würzburg-Riese* radar emplacement about 450 m. The 1st *V2a* and *L410A* were at about 85 m from the 1st *Freya* radar emplacement. The 2nd *V2a*, the *Vf* covered by terrain and the *Vf* surmounted by a modern house, probably all provided with a small Flak gun on their coverage, encircled the 2nd *Freya* radar emplacement. The reason of the close location of the 1st *V2a* and *L410A* is unknown.

The locations of the 1st *Freya* radar and the 1st *Würzburg-Riese* radar emplacements on the camp East side and the 2nd *Freya* radar and the 2nd *Würzburg-Riese* radar emplacements on the camp West side of the camp indicated the actual subdivision between the *Luftwaffe* and the *Kriegsmarine* radar stations. The *L410a* and *L479*, both *Luftwaffe* bunkers, close to the 1st *Freya* and the



(a)



(b)



(c)

Figure 16. 2nd tobruck (a) entrance and aperture of the combat room covered by a concrete layer; (b) entrance room partially invaded by sand and debris; (c) combat room, on the right steps protruding from the wall, on the upper side aperture closed by wooden boards.

1st *Würzburg-Riese* emplacements suggested that all these components, including the 1st *Vf2a* were components of the *Luftwaffe* radar station which occupied the West side of the camp. Consequently, the 2nd *Freya* radar and the 2nd *Würzburg-Riese* radar emplacements were components of the *Kriegsmarine* radar station which occupied the East side of the camp. The fact that only one commandment bunker *I479* was constructed, suggested that the information coming from all these radars were centrally managed by its personnel. The radar *Freya* from firm GEMA provided information about the distance of foe aircrafts up to about 160 km, whereas the radar *Würzburg-Riese* from firm *Telefunken* provided information about distance and height up to about 80 Km. The *I479*, certainly provided with a *Seeburg* table, coordinated day and night air fighters, elaborating not only radar information coming from the radars of the camp but also from the above mentioned Finistère radar bases which all were not provided with a commandment bunker. Therefore, it is evident that the camp of Saint-Pabu, during the WW II, played leading radar surveillance and operation role.

The *I410A* hosted the commandment place of the *Flak* defense of the camp. The fire of the single or double, 2 or 3 cm *Flak* guns was coordinated through its radio post.

The small shed on a side of the 1st *Freya* emplacement was probably a latrine



Figure 17. 3rd tobruck (a) entrance and aperture of the combat room covered by a concrete layer; (b) entrance room partially invaded by sand and debris; (c) combat room, on the right step protruding from the wall, on the upper side aperture closed by wooden boards.

for the personnel in service at the emplacement and nearby 1st *Vla* and *LA10A*. The 1st and the possible 2nd pools provided water for the staff entertainment and for extinguishing possible fires in the camp. Similar pools or cisterns were at the German base at Mûrs Éigné (Maine et Loire-FR) (Tomezzoli 2015) and the headquarter of the German 343. *Infanterie Division* at Kerlezerien (Tomezzoli 2013) near Landerneau (Finistère-FR). The small bunker near the 1st pool probably protected a water pump. Another similar small bunker on the North side of the camp protected a water motor-pump.

The number of radars in service at the camp is uncertain, they were either four (Pinczon du Sel 1947-1948) or 2 × *FuSE 65 Würzburg-Riese*, 1 × *FG 41 G (fB) Freiburg I* and 2 × *FuSE 80 Freya* and after 1 × *FuMG 401 Freya LZ*, 1 × *FuMG 450 Freya* and 1 × *FuSE 62D* (Lippmann 2016). The location of the radar *FG 41 G (fB) Freiburg I* emplacement is unknown. It is possible that the two initial radar *Freya* and *Freiburg I* were after replaced by the ameliorated versions of them.

German radar camps similar to that of Saint-Pabu were the above mentioned *Mandrill* at Monterfil (Dupont et al., 2007) comprising two radar *Freya* and two radar *Würzburg-Riese* and *Made* (Sarthe-FR) (Tomezzoli & Pottier 2015) com-

prising one radar *Freya* and two radars *Würzburg-Riese* both operative at same time of the camp of Saint Pabu and both not provided with a commandment bunker.

Works for camp improvement were in progress towards the end of the Occupation period as witnessed by a terminated 1st square excavation (48°33'58.57"N, 4°37'12.34"W) about 18 × 13 m, provided with a further central, rectangular excavation about 2 × 5 m, an elongated 2nd excavation (48°33'58.17"N, 4°37'14.30"W) about 26 × 14 m, in advanced state of completion and a 3rd excavation (48°33'57.35"N, 4°37'15.45"W) about 7 × 5 m provided with access ramp, all near the *L479* on the opposed side of the actual rue Arvel Vor (**Figure 18**). The dimensions of the 1st excavation did not fit with the dimensions 18.20 × 20.50 m of a bunker *V143* for *Mammut* radar (**Figure 19(a)**), which ruled out the hypothesis of the foreseen construction of such a bunker. The 2nd excavation, because of its shape and dimensions, appeared to conform well to a *L486* bunker (**Figure 19(b)**) for a permanent radar station, which confirmed the hypothesis of the foreseen construction of such a bunker. Said *L486* was probably foreseen for undertaking part of the operations performed at the *L479*. The 3rd excavation would be suitable for the construction of a small bunker of unknown type or for hosting a partially buried barrack. The excavations were still visible in the years 70th before to be filled by material and their area let free for modern houses construction.

A hospital and a fuel depot were on the camp but their location is unknown.

An *Ortskommandantur* for the lodgement and administrative services to German soldiers and in particular for the personnel of the camp existed in Saint-Pabu in the house at present rue de Beniguet 17.

The Stp Re 03 and *Re 04*, about 1 km from the camp, ensured the surveillance of a stretch of coast near Saint-Pabu and the defence of the camp in case of attacks coming from the sea. Their *Vf2d* lodged the personnel in service at said

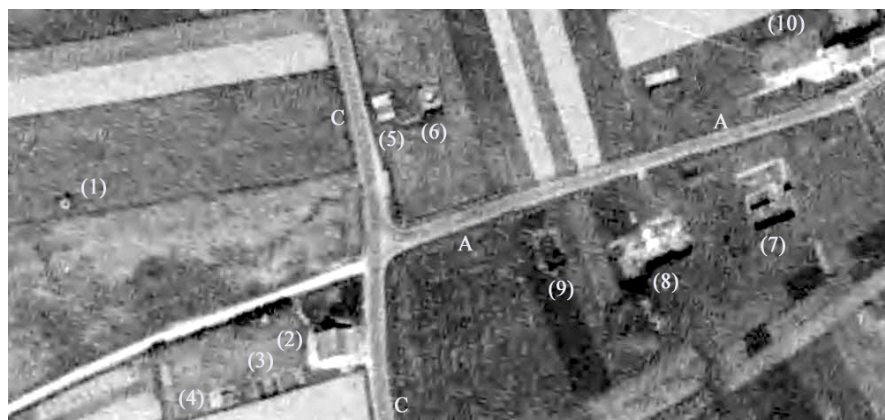


Figure 18. Area of the excavations: (1) 1st *Würzburg-Riese* radar emplacement, (2) 1st *Freya* radar emplacement, (3) 1st pool, (4) small bunker near the 1st pool, (5) 1st *Vf2a*, (6) *L410A*, (7) 1st excavation, (8) 2nd excavation, (9) 3rd excavation, (10) *L479*, A rue Arvel Vor, C rue Corn ar Gazel [Geoportail] C0416-0181_1962_CDP1916_8220, cliché n°8220, 01/09/1962.

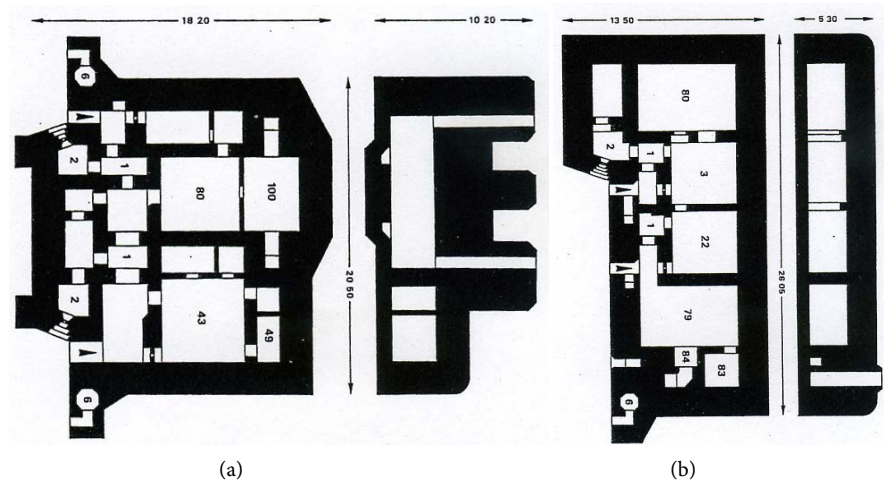


Figure 19. (a) Bunker V143 plan: 1. gasloch, 2. close combat room, 6. observation post, 43. engine room, 49. cooling water room, 80. operation room, 100. compensator room (Rudi, 1998); (b) bunker L486 plan: 1. gasloch, 2. close combat room, 3. crew room, 6. observation post, 22. ventilation room, 79. emergency generator room, 80. operation room, 83. transformer room, 84. re-cooling room (Rudi, 1998).

Stp. Such *Stp* were common components of the Atlantic Wall. A similar *Stp* was located at the Dunes de Ker Emma/Kéréma (Tomezzoli 2006).

The good preservation state of the bunkers of the camp and the *Stp* suggested that they were neither object of partisans and *FFI* (*Forces Françaises de l'Interieur*—French Home Forces) heavy attacks nor allied bombardments although their positions and activities were known to the allied.

6. Conclusion

The visits of the sites of the Saint-Pabu radar camp and of *Re 03* and *Re 04* have clarified many questions concerning their components and organization. However, as usual in this type of researches, some issues remain still open: the actual number of radars in service at the camp, the timing of their deployment and substitution, the purpose of the camp improvement. However, the information in this article may form the basis for further studies.

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