

~~SECRET~~

German Sigint Success in World War II

German exploitation, capture, and subsequent use of Allied IFF, Meddo, etc.—

Near the end of 1940 the German radar intercept stations of the Post Office Department (Reichspost) on the Channel Coast picked up a signal from an unknown apparatus. The first knowledge of the mode of the operation of the "pipsqueak," or IFF set, came from radio-telephone traffic, for the IFF served the fighter controls for controlling day and night fighters before the development of more complex procedures. The function and purpose of this apparatus was soon revealed to the Germans from messages and prisoner-of-war statements, but it was quite some time after the initial appearance that one was captured intact. The set was equipped with such a delicate explosive charge that it was set off oftentimes by jolts from a rough landing. Finally, a British fighter plane landed at a German airfield in Normandy, thinking it was his home base. In this way the first IFF set came into German hands intact. Soon after, they got a second IFF set from a Spitfire which made an emergency landing in France.

At first, the Germans located the IFF by a radar intercept direction-finding set, using the bearings to give their own fighter aircraft advance warnings. They attempted to build a VHF transmitter which could trigger the IFF and serve in route-tracking, but the results were negligible.

The Germans developed a radar in the general frequency range of the Allied radar sets, due to the fact that the Allies were jamming German radar installations both from the air and the ground to an extent that the greater part of German radar sets needed for operations were rendered inoperable. This new set was called the "Freya-D" or "Dora Insel." The first ones were used in Germany and France. The recognition blip which the IFF registered on the scope of the Dora Insel was called the "Flamme," and at first the Germans paid no attention to this odd appearance. After some time it was noticed that every time an Allied mission was flown within range, the Dora Insel was jammed. Upon examination of the picture drawn of the jamming pattern on the scope, the Germans assumed that the only possible cause was the IFF device. The frequencies of the Dora Insel and the IFF matched, quite by accident. With the aid of captured IFFs, Dora Insel crews were instructed in "Flamme" coverage. They numbered the different identification patterns (studs)

which gave them an effective means of differentiation in route-tracking in separating the units that flew in apart from each other. Since the IFF and Dora Insel were both transmitters, the effective range of measurement was almost doubled. Each time an Allied mission was on the way, the Dora Insel stations were immediately notified and they immediately reported their findings to the proper authorities. As a result of this close cooperation and also the "Flamme," the 205th Royal Air Force Bomber Group in Italy could be separated from the 38th Royal Air Force Transport Group (the Group which dropped supplies to Partisans in occupied territories). Both of these units heretofore had been difficult to identify because of their excellent radio discipline. Afterwards, the 205th was not only recognized while still in the assembly area, but the strength of the raid and course of flight could also be predicted in good time, because some "Flammen" always appeared when the aircraft were on their way to the target area. By applying the same practise to aircraft of the 38th Transport Group, the Germans were able to tell the strength, course, drop zone, and concentration areas of Partisan forces.

The triggering of the "Flamme" by Dora Insel made it possible to locate the IFF with radar intercept direction-finding sets. These, called "Sagebocke" by the Germans, gave them valuable bearings and fixes for route-tracking.

When, in the latter days of the war, Meddo devices were installed in aircraft of the 15th United States Air Force in Italy, (these Lightnings were used for weather-reconnaissance), the Germans were able to predict the next day's target for this Air Force, by following the Meddo device. The reconnaissance planes would turn on a special function of the Meddo when over the target area; probably to take photographs, thereby producing a rapid rate of impulses which could be heard on the earphones of the German Naxburg set. As the positions of the reconnaissance planes were always known by direction-finding, it was easy to determine what prospective target they were working on. In the last period of the war, every raid by the 15th Air Force confirmed German advanced warnings obtained from this source.

(From a post-war U.S. Army report.)

20 ~~SECRET~~~~HANDLE VIA COMINT CHANNELS ONLY~~

Declassified and approved for
release by NSA on 09-08-2009
pursuant to E.O. 12958, as
amended