

Microwave Early Warning (MEW) Radar and the 8th Fighter Control Center

The MEW radars were mounted on a truck: the antenna with a control cabin behind it. The complete MEW system weighed about 60 tons. Over 100 men and three days were required to erect the whole system. A large number of telephone lines connected the radar with other commands, airfields and emergency services. Power was supplied by 5 diesel-electric generators. The delivered MEW's did not have height finding radar. To correct this deficiency, the RAF provided AMES type 13 Mk III Radars. As no other personnel were readily available to operate the newly created Fighter Direction Center, Section A, 1076th Signal Company, was moved from Fowlmere to Dunwich as a "housekeeping unit." Then it was merged with the 401st Signal Company. Other highly technical individuals from various fighter groups were recruited into Detachment A, 331st Service Group, the only new organization that could be activated. Controllers were chosen from three fighter squadrons. As required, some operations and maintenance personnel were selected for training at Start Point, where the 9th Air Force conducted MEW and a Fighter Director Center training.

Greyfriars was selected as the home of the 8th Air Force MEW Fighter Direction Center. On 1 May 1944, the first personnel moved to Greyfriars. Later, the 401st Signal Company became the host organization and Lt. Col. Edward P. Weatherby Jr., the Commander. The unit was declared operational 13 June 1944, with call sign "Dwarfbean."

Once in operation, it was soon realized that the MEW Fighter Direction Radar was superior to any other radar in the UK. The method of reporting and controlling from one place, rather than the early wing method of collecting and merging reports from various sources was a major improvement. The MEW equipment used new, improved 10 inch Plane Position Indicators (PPI) displays with 360 degree displays and B scopes that supplemented the PPI's with grid scan displays. The combination enabled the Controllers to follow and direct air activities on a broader PPI display, and then closely track identified aircraft and groups with the B scans.

MEW, originally developed for air defense purposes, soon took on added importance as a means to control strategic air strikes of the fighters and bombers over both friendly and hostile territory. The MEW unit had a range of 220 miles. With it, the 8th Air Force fighters were directed to the formatting points with the escorted bombers, and then during the mission provided detection and warning of enemy aircraft. In this instance, selected fighters were also vectored toward the approaching German fighters to intercept and engage them. In addition, during this period, V-1 Buzz bombs launched by the Germans toward England were detected and land defenses were informed so they could be shot down. MEW was also employed infrequently as a method to direct the bomber forces to a target when cloud cover prevented visual drops.

(As a side note, the British devised magnetron also enabled the development of the H2S radar, nick-named "Mickey," that eventually was installed in some B-17's and B-24's, and led to radar in later aircraft such as the B-29, and also, in much later radars. Much of my time in B-47s was spent using a K-System for bombing and navigation.)

After a few months of the MEW's superior operational service, even the most skeptical were convinced that one central control center was more effective than multiple control squadrons. No longer was it necessary to merge many reports from many sources. The multiple fighter control squadrons were relegated to a secondary role. This agreement between the 401st and 8th Air Force Headquarters established the 401st Fighter MEW Direction Center as the primary control center. In the invasions in Normandy, Italy and France, MEW radar gave important support. Little known is the fact that for the bombing in preparation for Operation Market-Garden on 17 September 1944, the air defense over The Netherlands was arranged by MEW radar from Greyfriars, Suffolk, England. From October 1944, the

Microwave Early Warning (MEW) Radar and the 8th Fighter Control Center

control of all the missions of the 8th Air Force over Germany was governed by the MEW radar at Eys in the Dutch province of Limburg, near the borders of Germany and Belgium.

In October 1944, rumors began to circulate that the 401st MEW would be moved to the Continent. A short survey of possible sites, resulted in the selection of a point twelve miles east of Maastricht, Holland, near the villages of Wittem and Eys. It fulfilled the two primary requirements. It had acceptable height so that nearby hills would not affect the beam's sweep with blocking or ghost images and it provided a 200 mile range, thereby covering all of Germany. Before the move could be started, several technical issues needed resolution; the first, making all of the equipment transportable which included the 40 foot antenna mount. To resolve this, the antenna was simply mounted on a flatbed trailer. The operations building was disassembled and loaded on flatbed trailers as well. Planning ahead for operations on the Continent, the number of controllers was increased to 18. Communications VHF lines had to be increased from the 4 at Greyfriars to 18 lines that would be manned on the Continent. Personnel were increased for this requirement. No other increases in other personnel were required.

In November, the entire organization was busy completing the final details. Two convoys consisting of 65 vehicles were organized, and began the trek to the embarkage port at Southampton on November 3rd. Once loaded on two Liberty ships the transit across took 12 hours. However, it was not until seven days later that they finally docked at Rouen and began to unload; finally reaching their destination on November 18th. In the next seven days the MEW and other radar related equipment was re-assembled, the operations building was erected, VHF and other communication lines laid, and the mobile VHF radio site readied so that the operational site was finally completed. The personnel were barely settled in, when they went "operational" on November 23, call sign "Nuthouse." The speedy transition to "operational" status was recognized by a personal commendation from General Doolittle. Over the next six months, "Nuthouse" continued to guide fighters to their rendezvous with the bomber formations and secondarily to vector fighters to seek and engage hostile aircraft. From time of initial operational duty as "Dwarfbean" to "Nuthouse," the tasks facing the MEW radar site and Fighter Detection Center had doubled. As an example, during the reaming week in November they handled four missions involving 38 Groups, the busiest day was November 26th when they handled 11 Groups. On November 27, another busy day, 10 Groups were sent on strafing missions and the resultant encounter with the Luftwaffe resulted in the downing of 98 German aircraft. "Nuthouse" was now in the business of tactical control as well as control and direction of strategic forces. The opportunities continued to increase as the European War was beginning to reach closure. Over the next remaining months, "Nuthouse" added assistance to 9th Air Force fighters, relaying of all plots of hostile aircraft to 9th Air Force, as well as the control of night fighters for 9th Air Force. In January 1945, the control of 8th Air Force Photo Reconnaissance missions was added to their workload. At this point, a decision was made by 8th Air Force Headquarters to bring the 57th Fighter Control Squadron to the Continent to share the ever increasing workload using the MEW radar at "Nuthouse". A plan to coordinate the tasks was agreed to, and "Nuthouse" was tasked with handling its normal fighter control, plotting of enemy aircraft, informing 9th Air Force of enemy traffic, and participating in various technical experiments.

By January 1945, the Radiation Laboratory had recently developed an early Identification Friend and Foe (IFF) system code named "Rosebud." A "Rosebud" receiver-transmitter beacon was installed in selected fighters, and a "Rosebud" antenna was added to the MEW antenna. When a fighter group leader turned on his beacon, at the request of the MEW controller, the group leader's radar return pattern on the MEW radar scope blossomed, thereby allowing positive identification of the friendly group.

Microwave Early Warning (MEW) Radar and the 8th Fighter Control Center

The fighter direction requirements continued to increase as the War raged on. In February 22 missions were directed. In March, there were 24 missions including a busy day on March 24th when 8000 planes were airborne, the majority involved in airborne operations. As the front lines extended deeper into Germany at extreme ranges, the ability to track aircraft deep into Germany became more difficult and some consideration was being given to moving the MEW deeper into Germany.

From January to early May 1945, "Nuthouse" had handled over 100 missions including 1,000 Fighter Groups and over 1200 hostile aircraft had been destroyed by aircraft under "Nuthouse" control from Army Air Force Station 185, the Maastricht, Holland site. The last days of May 1945 were the definitive end for "Nuthouse" and Station 185. The 401st Signal Company received a Meritorious Unit Award. In June 1945, the equipment was turned over to A Company of the USSAF 555th Signal Air Warning Battalion in Germany.
