

(U) Aerial Surveillance Along the Border

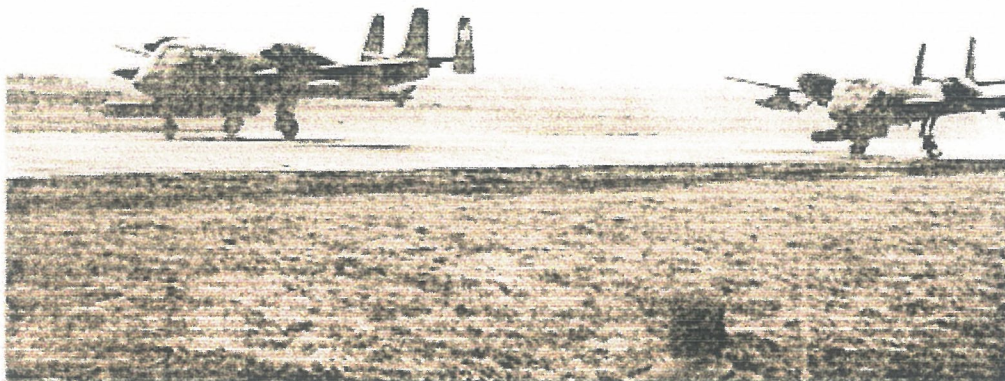
Although there had been aerial surveillance along the eastern borders the early days of the occupation, there was a large scale upgrade of both the command's reconnaissance aircraft and surveillance equipment during the 1960s. USAREUR had received its first three operational AN/APS-85 Side-Looking Airborne Radar (SLAR) systems in the latter part of 1959 for use by V Corps, VII Corps, and US Army Southern European Task Force (USASETAF). One system had been previously tested by the US Army Surveillance Unit, Europe, and stationed at Lenggries in the Federal Republic. The equipment produced photographic records of radar pictures of the ground and had a maximum range of 40 miles on either side of the aircraft. The SLAR was installed on the L-23, and by 1962 on the specialized RL-23D (one reference said it was on the RU-8D also).<sup>35</sup> Initially, USAREUR was not overly impressed with the new system and rated it marginally effective: "The device showed little promise of producing information of value that could not be produced by other means."<sup>36</sup>

(U) The initial skepticism about SLAR's usefulness gave way as the system was upgraded in subsequent years. Actually, there were several significant improvements in USAREUR's aerial surveillance capabilities during this period. The new OV-1 Mohawk all-weather, long-range surveillance aircraft arrived within the command on 12 September 1961, when 12 were assigned to the Seventh Army. In 1962 three types of serial surveillance configurations on Mohawk aircraft were being tested in the command: the OV-1A model, which was equipped with the KS-61 photographic, system; the OV-1B model, which was equipped with the new AN/APS-94 SLAR; and the OV-1C model, which was equipped with an AN/UAS-4 infrared sensor. The test results of the three configurations were successful with those of the SLAR-configured OV-1B indicating that the new ANIAPS-94 SLAB was a great improvement over the previous radars (both the AN/APS-85 and the subsequent system, AN/APS-86). The command had initially wanted to mount all three surveillance systems in one aircraft, thus reducing the number of aircraft required, as well as requirements for maintenance and technical personnel, while increasing the operational flexibility of the multipurpose aircraft. However, by 1965 it had settled on two aircraft configurations that merged two of the surveillance systems: the OV-1B model was equipped with the AN/APS-94 SLAR and the KS-61 camera system; and the OV-1C was equipped with the AN/UAS-4 infrared sensor and the KS-61 camera system.<sup>37</sup>

(U) There had been problems with the OV-1 Mohawk aircraft during the 1962 test period which indicated that several modifications were

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needed in the airframe and the engine. This became so serious during 1964 that the aircraft had only a 46 percent availability rate -- not all of which could be blamed on the aircraft -- which severely limited its performance of the aerial surveillance missions. In order to improve the performance of the OV-1 Mohawk, the Department of the Army in 1965 directed modifications for all Mohawks employed in aerial surveillance missions. For the OV-1B, modifications included installing new, more powerful, engines and increasing the wingspan to provide greater lift. Both the OV-1B and OV-1C types received improved navigational systems, to include the Marconi Self-Contained Navigational Doppler System -- a commercially produced item of equipment that simplified navigational functions and reduced the possibility of errors. USAREUR began returning the Mohawks to the United States in early 1966, with some of the refitted Mohawks returning in mid-1966 and the modernization program being completed in 1967.<sup>48</sup>

In 1967 the SLAR capability was further upgraded with the fielding of data link equipment, which made possible the transmission of SLAR imagery from the aircraft while in flight to a ground receiver. The system consisted of airborne video encoders and transceivers that transmitted the radar images directly to a ground station that was mounted on a 3/4-ton truck and included a Ground Sensor Terminal, AN TKQ-2, which was a transceiver, video decoder, and recorder-processor-viewer. The latter piece of equipment converted the video image to a hard-copy printout in three seconds after

receipt and projected the hard copy onto a viewing screen for virtually instantaneous viewing by the imagery interpreter. The advantages of such a system over making the aircraft return to its base, having the films processed, and only then submitting them for analysis, were significant. The first set was issued to the 122d Aviation Company, which immediately began using it in exercises and as part of its border surveillance operations. USAREUR received two additional data link equipment sets in early 1969, keeping one for the 122d Aviation Company and issuing the other to the 14th ACR headquarters in August. The 14th ACR began using it with its operational border surveillance missions on a trial basis, and the results were so satisfying that it went into normal operational status in September 1969. Information derived from the imagery enabled the 14th ACR to locate convoy or rail movement, determine the direction of movement, and probable convoy speed, as well as indicating the degree of activity at the East German Eisenach Training Area. Two imagery interpreters were attached to the 14th ACR, which permitted the plotting of moving target indicators and correlation of current order of battle information to the SLAR sightings. Although the SLAR had a coverage of approximately 50 kilometers

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into East Germany, it was unusual during this early period for it to provide significant 'peacetime surveillance information. During 1969, for example, only one SLAR mission in the V Corps area recorded significant activity in East Germany, and it turned out to be nonmilitary traffic in conjunction with an East German holiday. Its potential during wartime operations, however, was considered to be significant since natural terrain masking would make any ground-based observation limited. Only aerial observation could overcome terrain masking, and SLAR promised to be a great aid in this area.<sup>39</sup>

(U) There was a great deal of discussion about what would be the optimal level to distribute these new aerial surveillance assets -armored cavalry regiments., divisions, corps, or theater level. Originally, it had been thought there would be enough Mohawks to issue four to each armored cavalry regiment and division, as well as provide some for the corps and theater support units, but by the end of 1962 only 30 of the 62 authorized Mohawks had arrived in the theater. By 1963 USAREUR headquarters was recommending that the Mohawks be concentrated at the corps level, especially the OV-1A which would help solve the corps' surveillance and drone capability deficiency; and, after reviewing the final results of the OV-1B test report, reiterated once again that they should be assigned at the corps level -- citing the range and speed of the aircraft as a major reason for justifying its deployment at that level. However, pending activation of corps surveillance companies programmed for FY 1966, the logical unit for assignment of the aircraft -- which were to be withdrawn from the divisions and armored cavalry regiments -- would be the corps aviation companies. The picture became somewhat

muddled during 1963 and 1964, but there were strong indications that the majority of the Mohawks were being employed by the divisions and armored cavalry regiments.<sup>40</sup>

(U) The picture clarified when the 122d Aviation Company (Aerial Surveillance) was activated on 10 May 1965 and assigned to Seventh Army. The table of organization and equipment authorized the company 18 Mohawk aircraft (9 OV-1Bs and 9 OV-1Cs). According to the 1965 USAREUR history, the command also activated two corps artillery aviation batteries, assigned them to V and VII Corps Artillery, and authorized each of them 6 Mohawks (3 OV-1Bs and 3 OV-1Cs). Actually, Battery D, 25th Artillery -- assigned to VII Corps -- had been activated on 25 June 1964 and Battery F, 26th Artillery -- assigned to V Corps -- had been activated on 25 September 1964, but apparently they were not transferred to the two corps until May 1965. USAREUR organized these units by redistributing available personnel and equipment assets; however, due to an aircraft shortage, the units had less than

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50 percent of their authorized Mohawks. The divisions retained at least part of their Mohawks, but the armored cavalry regiments had to give theirs to the three new units. At the beginning of 1966, Mohawks were being flown by Aerial Surveillance and Target Acquisition (ASTA) Platoons attached to each division in USAREUR and to the Corps Artillery of V and VII Corps, as well as by the 122d Aviation Company.<sup>41</sup>

(U) On 31 January 1966 Seventh Army suspended all SLAR surveillance missions along the border in order to begin implementation of the "Aviation Requirements for the Combat Structure of the Army" (ARCSA) - I Study requirement that USAREUR SLAR aircraft be reorganized into two surveillance companies. Although the study had called for two aviation companies, each consisting of eight OV-1B Mohawk aircraft that would provide SLAR and conventional photography support to each corps, the existing number of qualified personnel and the shortage of aircraft and equipment would not permit the formation of two units. Instead, USAREUR resources would be used to equip the 122d Aviation Company, located at Fliegerhorst Kaserne in Hanau, which would support both corps. On 24 August 1966 the 122d Aviation Company resumed border surveillance operations under the new Seventh Army Intelligence Operations Directive 1-66, which delineated its responsibilities to the two corps and its overall responsibility to provide support to USAREUR headquarters. By June 1967 the Mohawk consolidation portion of the ARCSA-I Study had been completed, with 16 of the command's Mohawks pooled in the 122d Aviation Company. The aviation batteries in the two corps artillery (D of the 25th and F of the 26th) were inactivated on 5 June 1967. References in subsequent histories refer to OV-1s other than those of the 122d Aviation Company -- the most likely place being the divisions -- but it is unlikely they had a border mission.<sup>42</sup>

In addition to problems with establishing the most functional configuration of surveillance equipment on the aircraft and at what organizational level to deploy the Mohawks, there were serious concerns about controlling the aerial surveillance missions along the border and with protecting the aircraft from Warsaw Pact aircraft responding to these -missions. The first grounding of operational, SLAR aircraft occurred on 5 February 1962, when USAFE's 86th Air Division curtailed ground radar control pending review of the requirements and control procedures for SLAB flights along the border. A meeting with USAFE personnel on 12 March led to an agreement to resume ground control of SLAB flights, but under the more stringent controls of 86th Air Division's Operations Order (OPORD) 191-62 (SLAB), 13 August 1962, which set forth procedures for US Air Force ground radar control of

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SLAB flights. The Seventh Army commander authorized resumption of SLAR flights along the border on 25 August, but only after personnel operating SLAB systems -- pilots, radar operators, imagery interpreters, and USAFE ground controllers -- had qualified on a proficiency check course established at Grafenwoehr and Hohenfels training areas. Qualified personnel resumed flights on the border in the VII Corps area on 11 September 1962 and in the V Corps area on 26 October, with all remaining personnel being checked-out by the end of 1962.<sup>43</sup>

These efforts at increasing control were followed up on 22 March 1963 when Seventh Army published a -letter of instruction (LOI) that standardized SLAR processing and imagery procedures; required that orientation and training be increased for personnel flying border missions (e.g., one-sixth of the flights would be flown over known parts of West Germany not on the border); established new border flight routes -- generally to the rear of existing routes -- that would lessen the possibility of border overflights; developed traffic and density patterns based on tests; and established uniform SLAR reporting procedures. These new procedures, although useful in solving the border overflight problem, did not completely resolve another serious problem. Many times in the past, Warsaw Pact aircraft had responded to SLAR flights along the border by shadowing the flight on their side of the border. When, on 18 August 1963, a SLAR aircraft flying a mission between Kassel and Fulda drifted toward the border, a Warsaw Pact aircraft flew over the border to a depth of about eight miles and made two passes at the SLAR aircraft, coming within a half mile at its closest point. This was the first incident involving an actual border overflight in response to a SLAR mission.<sup>44</sup>

(U) All SLAR operations along the border were suspended for three weeks in March 1964 in response to the second incident during the preceding period in which a US Air Force aircraft was shot down-after inadvertently crossing the interzonal boundary. The result of this grounding was tighter control of resumed SLAR flights in a revised LOI.<sup>45</sup>

Control problems were highlighted again in 1965 when a SLAR flight from the 4th Armored Division was inadvertently vectored by US Air Force ground control across the Austrian border near Passau on 8 November. Because of the sensitive political nature of the incident, the pilot was suspended from flight status, SLAB missions in this area were restricted to visual daylight flight conditions only and one SLAR checkpoint was moved further from the Austrian border.<sup>46</sup>

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Subsequent investigation of the incident revealed this was not an isolated event, and that there had been seven unreported incidents during the prior eight months due to faulty ground control. As a consequence, on 31 January 1966 USAREUR again suspended all SLAB missions in the border area until positive control over the flights could be assured. The basic cause was found to be the incorrect plotting of one of the USAFE radar antenna sites, which resulted in a 2-degree compass heading error and a displacement of the flight path checkpoints. To provide the required assurance, USAFE recalibrated all of its ground control radars along the border and USAREUR moved its flight paths further from the border. Although this resulted in some loss in depth of penetration of the intelligence gathering capability of the SLAR, USAREUR thought the increased positive measures to insure aircraft did not inadvertently cross international boundaries were more important than the additional intelligence information that might have been gathered from flying closer to the border. With the greatly improved ground radar control and realignment of the flight routes, it was hoped that border violations would be virtually impossible, and the command resumed SLAB flights on 17 August 1966 (the 122d Aviation Company did not resume its flights until 22 August).<sup>\*</sup> As a final precaution, USAREUR directed that upon detecting any conflict between navigational aids and the vectoring instructions of ground radar control operations, pilots were to abort their missions immediately.<sup>47</sup>

On 2 November 1966, however, the flights were suspended again when it was discovered that a Polish radio station was interfering with the frequency of the Schweinfurt nondirectional radio beacon. Federal Republic aviation safety authorities changed the frequency for the beacon, and SLAB flights were resumed on 10 January 1967.<sup>48</sup>

It would seem that it would have been impossible to still inadvertently fly over the border, but it happened again on 23 February 1967 when a Mohawk violated the interzonal boundary while on a maintenance test flight under visual flight rules (VFR) to check the reliability of its SLAB equipment. The pilot had been flying what he

<sup>\*</sup> (U) It is interesting to note that this down period due to the border overflight incidents coincided with the consolidation of SLAB assets into the 122d Aviation Company, and that other histories alleged the extensive

suspension of SLAR flights during this period was due to the reorganization. Probably both the reorganization and the ground control problems caused this lengthy curtailment rather than one or the other.

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thought was a routine maintenance check, well outside of the Air Defense Identification Zone (ADIZ) that had been established along the border to preclude this type of incident. However, when he flew over some clouds, he became disoriented and was blown across the border by strong winds. The 86th Air Division's ground controllers picked him up on radar as he strayed into the ADIZ and tried to recall him, but he was operating on a local Army radio frequency rather than a border frequency. Unfortunately, the ground controllers did not notify the US Army Flight Coordination Center at Fulda, which would have tried to recall him on all Army frequencies. The 86th Air Division's ground radar control installations again picked up the flight as it was returning to the Federal Republic side of the boundary and scrambled USAFE fighters to intercept the violator, thus demonstrating that at least the border defense system worked, if not the ground radar control procedures.

As a result of this incident, a complete review of all local flying regulations was conducted to insure they were in concert with USAREUR regulations. The practice of filing local flight plans by radio was prohibited -- even if it was only for a short flight -- and henceforth written flight plans and weather briefings would be required before all flights. In addition, joint procedures were developed with the 86th Air Division to insure that future recall actions would be broadcast on all available Army radio frequencies. These changes were institutionalized in USAREUR Regulation 95-1 on 25 October 1967. The 86th Air Division also instituted procedures for processing the flight plans for "LARD CAN" patrols (nickname for SLAR flights) that insured everyone understood their mission and mode of operations.<sup>49</sup>

(U) The Flight Coordination Center (FCC) at Fulda was just part of an extensive network Seventh Army had implemented to monitor Army aircraft in the Federal Republic, especially aircraft performing observation and surveillance missions in the ADIZ. In the latter part of the 1960s, the 14th Air Traffic Control Company, a subordinate unit of the 15th Aviation Group, operated FCCs at Fulda, Bayreuth, and Regensburg that monitored, flights within the ADIZ, and three other FCCs west of the ADIZ to monitor Army aircraft operating within the southern half of the Federal Republic.<sup>50</sup>

After North Korean forces shot down a US EC-121 reconnaissance aircraft over the Sea of Japan in 1969, the Joint Chiefs of Staff and USEUCOM examined the security of surveillance aircraft in Europe. USAFE did not have any specific plans for protecting recon-

naissance missions and, in fact, because of the nature and frequency of the SLAR flights, did not consider it desirable or feasible to provide fighter escorts for them. It reasoned that flights of armed fighters near political borders could disturb sensitive political relationships with host and other friendly countries, that there would be an increased possibility of border violations by the high-performance aircraft, and that fighter escorts could not provide full protection since they could not defend against surface-to-air missiles or an overwhelming fighter force. USAFE thought its current procedures of immediately scrambling fighters in the event of hostile interference was adequate.

USAREUR decided to upgrade the early-warning capability of its surveillance aircraft and, late in 1969, requested AN/APR-25 and -26 radar homing and warning systems for the OV-1B aircraft. The requested electronic warfare equipment was capable of detecting and identifying radar signals from both ground-based and airborne emitters and warning the pilot of the type of threat, thus alerting him to take appropriate defensive action. The equipment began arriving in January 1970 and by July all of the aircraft in the 122d Aviation Company committed to the SLAR surveillance mission had warning devices installed, with the entire USAREUR OV-1 fleet similarly equipped by the end of August. Still another defensive improvement was USCINCEUR OPLAN 4320 - Protection and Support of US Reconnaissance Operations (S), published 30 December 1970, the primary benefit to USAREUR being that it rationalized the procedures under which it could expeditiously request assistance from NATO air defense control agencies if one of its surveillance aircraft was attacked or in trouble.<sup>51</sup>