



Volume 14, Number 2

# TAC MISSILEERS

## NEWSLETTER

“Serving the mace and matador missile crews and all support personnel who fought and won the cold war”



Spring/Summer 2012

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### In this issue of Your Tac Missileers Newsletter

Several years ago Mgst (Ret) Ray Clark of the 11th Tac Missile Squadron Flight B, sent in the tongue-in-cheek article “*The Present Watch on the Rhine*” by an unknown author, circa 1957, we are finally getting around to using it in this issue.

We continue *Only 15 Minutes to Atomic Strike* by Germany military history buffs, Stefan Büttner and Klaus Stark. The article appeared in the Germany Aviation magazine *Flieger Revue Extra* edition 32. It covers the cruise missiles deployed by both sides during the cold war in Germany. Much of the content about the Mace and Matador in West Germany was derived from the book U.S. Air Force Tactical Missiles 1949—1969 The Pioneers by Tac Missileers George Mindling and Robert Bolton. However, Büttner and Stark populated and expanded their extensive article with data and graphics uncovered in files of the former East Germany archives and on trips to the former missile sites. They describe the missiles and other weapons that were facing West during the Cold War period. *Bob Bolton*

**NOW NAMED** “Miss L”, the Mace B we moved from FL to IN had been completely refurbished, mounted and is now proudly displayed at the Indiana Military Museum with a show bird finish see the last page for picture and a few more details.

The **2013 TAC Missileers Reunion** will be held in San Antonio, Texas ...a really fun place to visit, with LOTS of things to see and do. The reunion dates and hotel have not yet been chosen, but we are targeting either the Spring or Fall, when the temps are most comfortable, AND we plan to stay at a Riverwalk / downtown hotel that is close to all the “action.”

#### TACMISSILEER CORP.

(FINANCIAL REPORT) 10/25/11-6/10/12

BALANCE 10/25/11	—\$27,454.67
DUE'S TAKEN IN	—\$2,790.00
SALES of JACKETS, HATS,PATCHES ETC.	—\$842.20
TOTAL	-----\$31,086.67
EXPENSES	-----\$1,676.40
BALANCE	-----\$29,410.27

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### \* THE PRESENT "WATCH" ON THE RHINE

Turn off the highway north of Trier onto an unmarked cow-dung spattered path worn through a farmer's turnip patch. You halt at some scrub brush and a US Air Force guard says a friendly "Hello". An unloaded 45 caliber pistol is slung from his shoulder holster and a couple of sentry dogs romp happily in the sun. Further on are airmen wearing dirty combat fatigues with whatever stripes they have left sewn on, their helmets and carbines lay in the mud behind a missile, where they'll be out of the way. It looks like one helluva mess. This is the free world's front line today. One of the many missile launch sites carelessly scattered through the mountain country west of the Rhine.

High on a hill across a river stands a Gasthaus, with the historic legend mounted over its door, "Distelhauser Farzen". The door faces west, along the traditional route of thirsty airmen stopping off for a quick one. For today, it is US Air Force men who provide "comrade" with all his profits.

Look along the base of the Eifel Mountains and you see here and there patches of eternal ground. A radar antenna stands rusty and unused atop a ramshackle unpainted van. A dusty road winds past a secluded couple making love in the back of a 6X6 and a missile's dusty dull nose points directly at a tree. It is the nose of American Matador, zeroed in on a target 10 feet away, on the other side of the hardstand.

For years, our Matadors, capable of driving the most experienced technicians to exasperation, have been gathering rust here in Germany. At well run down launch sites under the noses of all who care to see, American missile crews wait beside the firing button, hoping it will work in case of enemy aggression. Their roles: to consume the entire output of the nearby Distelhauser brewery. How much do the Germans like these missilemen? Well why do you think they lock their daughters and cows in the house at night?

The Matador is in effect a launch in miserable weather pm; missile. It is supposedly mobile, operating from a launching platform mounted on flat tires, the world's shortest runway. Each flatbed trailer has its own supply of cognac. Should the enemy pinpoint a Matador location; the missile can be quickly moved to a new site, a farmer's wheat field, where the government will have to pay damages, or even a stretch of open highway, where it will block traffic for miles.

If an attack ever comes, CQ's will immediately start calling all the Gasthauses in an attempt to locate the airmen. Simultaneously, last minute launching and guidance information will be bogged down somewhere in the communication system that connects the various detachments that stretch all over West Germany. Even before the echoes of the alarm die down, the air will be blue with curses of airmen wondering who stole their blankety blank field gear. While the first wave of missiles drop harmlessly in field a couple of miles from the launch site, truck convoys will be fighting bumper to bumper traffic through village streets, transporting a

second wave of Matadors, and a third wave to the dispersal area located near Gasthauses known to be well supplied. This is a mobile striking force that an enemy can never hope to out drink.

The matador crews on round the clock alert exist right beside their missiles. The ready room is a makeshift pit built out of old beer cases and heated in the winter by a little sterno stove that cannot quite offset the icy winds blowing through the many cracks. A loudspeaker occasionally interrupts an all day poker game to announce the latest ball scores and race results. Without warning a lieutenant stumbles in to announce a practice countdown, a thorn in the side of those who must participate in them.

At the launch pad the trailers hydraulic system is already giving maintenance men a hard time. The Matador with its tiny bent back wings and a fuselage only four feet in diameter, it looks like a model fighter plane that junior screwed up when he assembled it. It has a dummy nose cone, everyone is afraid to attach the real warhead. In the control shack 50 feet away the launch officer tries to call over his mike and then screams for a communications man. The crewmen make their final checks; They climb on top of the trailer and holler for medics to treat the sprained ankles and broken legs as they realize the damn thing was higher than they thought. Finally, with everyone in the shelter of the sandbag bunkers, the launch officer hits his starter button. There is a whine that builds up to a steady scream; then a burst of flame from the Matador's tailpipe. A visitor runs forward to light his cigar from it because he forgot to bring matches. The jet exhaust cuts in with an ear shattering roar, kicking up sandbags, troops, old beer cans, sentry dogs, and a farmer who didn't move out of the way in time.

Now comes an even louder roar as a T-33 Sim-missile streaks over the launch site and crashes into the forest beyond. In peacetime practice missions like this one, a plane substitute for the Matador after all, the accent is on realism. Meanwhile, a crow flying by is picked up on the radar scope at a guidance detachment and is mistaken for the Matador. If this were the real thing the controller would attempt to guide the Matador throughout its whole flight to its destination, and go ape wondering why the crow did not respond to commands.

Once a year the crews get an opportunity to paint helmets and to blast off real missiles. This is during the annual war games, when the squadrons are toasted in the sun baked deserts of Tripoli, to bargain with the Arabs for souvenirs. It is there, at last, the crews get to see their Matador take to the air and disappear into the sandstorms, to detonate with deadly accuracy on small Arab villages somewhere in the desert. Though the men sleep in field tents, eat C rations and swelter in the blistering African heat, they don't complain. They're crazy.

Day and night in Germany the show goes on at the launch sites, and at isolated control detachments which are the nerve systems of the entire Matador operation. These miserable units are located far from population

centers, but near Gasthauses. The crews spend their tour of duty on bleak windswept hilltops, out of contact with other Americans, cussing their fate, and swearing never to reenlist. In winter the roads may be blocked for weeks and officers may have resort to pack in their supplies of cognac on the enlisted men's backs.

Our wheels churned in deep snowdrifts, late in March, as we struggled uphill to a detachment of the 585th Communications and Guidance Squadron. Here too, everything was screwed up. At site A12 the radar and electronic equipment was out of commission, four truck trailers were parked back to back, in the form of a cross, with a deep hole in the center filled almost to the top with empty beer cans. The radar crews were thawing out cans of beer with RF from the antenna, and the controller's breath make a 90 proof vapor cloud as he watched the blip on his scope, wondering what that blankty—blank crow was going to do next. "We got everything here except women", he said with a grimace.

Most isolated of all are the radio relay stations perched on a lonely mountain peaks. With the inevitable gasthaus nearby. A radio relay is manned by a team of eight airmen, who live in the Gasthaus of a nearby village and shack up with every frauline who's willing. They commute up and down the mountain in shifts, providing their vehicle is running. There are no service clubs, movies or newspaper, nothing but endless drinking. Morale couldn't be higher. "I like it here", one of them said. "Days we sit around playing word games with MCC" (Missile Operations Center), "nights we sit around the Gasthaus making out with the women" and for this we get PRO-PAY! The German based missilemen have built a forward wall against Communist aggression. They are also building things even more lasting like brick Gasthauses, snow fences, mailrooms, etc. The isolation of the Matador operation, in rural areas, drive the crews to drink. There are many friendly brawls. A German family bakes a cake for a young airmen based in the village, and laces ground glass on it. A former B-17 crew chief gets the hell beat out of him by some-one who was in a bombing raid on Frankfurt, the crewman at a radio relay sets up a trust fund to make sure they never run out of beer money.

Slowly the scars of the time are healing. Last Christmas the missilemen gave a party for all the children in nearby villages. Early this year the mayor invited them to attend a shotgun wedding perhaps the first time that a missileman was ever caught with his pants down. Today these former enemies face a common enemy, the dwindling supply of beer. The sergeant from Arkansas and the burglar from Aachen stand side by side, sharing a brew and wondering "vas ist loss?"

.....

***Only 15 Minutes to Atomic Strike***

***Continues***

### **Soviet Fighters on the Lookout**

The MSQ guidance and control system had an additional task as well; it was used for controlling conventional manned aircraft: The 701st Tactical Missile Wing had a fleet of ten two-place Lockheed T-33, whose special task was to mimic being a guided missile, a so called simulated missile or Sim-missile. To accomplish this the T-33s had the APW-11 transponder installed, the same as in the Matador. During a sim-missile mission the T-33 pilot roared in low over a Matador missile launch pad and then headed away directly toward the Iron Curtain. The crews of the Guidance and Communications Squadron at the various ground stations would then see on their radar scopes what appeared to be a real missile launch and then they could practice controlling the sim-missile up to at least the eastern border.

A former USAF Pilot, Lieutenant Colonel Fred Horky, recalls: "I flew regularly with these guys on days when I had no service directly with the missiles. We flew very accurately and all this happened very close to a hostile border, on the other hand, the Soviet fighter pilots were just waiting to be able to paint a T-33 shoot down marker on their aircraft. Sembach and hardly anyone else knew that it was we were up to!"

This didn't apply at all to the alleged enemy. "The routine training of personnel of the communications and Control squadrons is performed with training aids," it was tersely noted. "Manual control site staff needed to get more skills to acquire and to control the missiles through the electronic devices from the Matador equipped T-33 training aircraft. The crews of the radar units have the machines to watch on predetermined routes to determine their track changes and with the help of the special electronic equipped T-33s were able to carry out their training." Thus, the caution of the T-33 pilots towards the Soviet interceptors well founded.

All in all, the quality of East Berlin's knowledge was surprising when the excerpts were published for the first time, given the extremely restricted reconnaissance opportunities. The Ministry for national defense, based in Strausberg, in the then East Germany was well informed of all significant transactions related to the Matador. Information, page by page of the names and ranks of American officers are documented, the launch positions that were supposed to operate in secrecy, with photos and lists of the exact geographical coordi-

nates. Information like the renaming of the 1st Tactical Missile Squadron, to the 71st Tactical Missile Squadron is there, the 405th Tactical Missile Squadron is there as well as the 69<sup>th</sup>, and the 11<sup>th</sup> changing to the 822nd Tactical Missile Squadron in June 1958, all meticulously monitored." At that time the units were being renumbered in associated with the withdrawal of the 38th Tactical Bombardment Wing in Laon, French which had previously contributed its part to nuclear deterrence with the Martin B-57 Canberra. In addition, about the size of the threat made, the East German Military made no mistake, "the Matador and Mace missiles were viewed by the U.S. Air Force as their most powerful tactical weapon. They can be used against point targets and can at any time of day and night be brought to use." [4] and further: "the readiness of the wing is worthwhile regardless of unconfirmed reports to the contrary. The missiles are ready to launch within about 30 to 40 minutes during day and in about an hour at night without lighting. From assembly to the firing of a missile, 40 minutes are required."

### **Without Competition in the East**

At least in the early years the Matador had no competition in the eastern side. They carried a nuclear warhead, type W-5, with an explosive power equivalent to 50 kilotons - one of the first warheads, with such a low weight, that it could be delivered by a tactical aircraft. Together with the U.S. Army's 280-mm atomic gun and tactical nuclear bombs, the Matador was among the first American nuclear weapons in the Federal Republic. In the mid-1950s the Soviet Union had nothing to oppose these weapons. According to rumors there were IL-28 jet bombers stationed in Brand and Finow Werneuchen that were nuclear capable, possibly by 1957. Reliable sources say more likely by 1961.

What were the targets of Matadors? A guided missile in contrast to the fighter bomber is not adaptable to a fluid battle picture. It relies on previously known, measured, examined, stationary targets. In an internal study by the German Air Force in this context, "airports, concentrations of all kinds, assembly areas, stores, deployment areas" as infrastructure links between industrial production and the fighting troops of the enemy in question. "Cities and other population clusters" are not specifically excluded. Multiple sources stress the gaining of air superiority as a primary objective.

Simultaneously, in the first hour, put the guided missiles weapons to use. Despite their mobility, they were themselves too vulnerable to an air attack from the other side if they are not launched as early as possible in a conflict. "They should therefore be used from the first moment of the war on the offensive" said the study. And at the beginning of a conflict what poses the most danger to the infrastructure? In particular, it would have to be the enemy airfields. "The main strikes will be conducted according to our view on missile launch sites and facilities of the air forces of all Socialist states, "the report stated a few years later in East Berlin." In the mid-1950s no missile sites existed in East Germany.

Indeed, the Soviet Union in the first half of the 1950s had a massive upgrade step taken. On Josef Stalin's orders large numbers of Ilyushin IL-28 medium bomber, with a bomb load of three tons were moved forward. In the event of war, obviously the conventional mass use of these bombers accompanied by MiG-15 and MiG-17 fighters was planned by the East. The IL-28 was the only offensive weapon available with sufficient range that the Soviet Union had in the central European theater - of which, however, there were plenty. Since the machine could not fly from unprepared fields there where a number of East German airports that needed to be expanded, with great effort. About 40 IL-28 per air field could be accommodated.

It is easy to figure out that the deployment of the Matador missile in the Hunsrück, Eifel and Palatinate were meant as a response to this threat. With their help the airfields in East Germany could possibly have been destroyed before that the IL-28s could take off. Drastic arguments that seemed to work on the other side of the Iron Curtain: The mass deployment of the IL-28 was canceled, the expansion of most airports stopped, a handful, the Army took over, but not in the bomber role. IL-28 regiments remained only in Brand, Finow and Werneuchen. It was understood from this lesson that without nuclear weapons little could be done against U.S. cruise missiles.

### **A New Guidance System**

Meanwhile, time did not stand still for the Americans: The Matador, with a new guidance system called SHANICLE and the designation TM-61C appeared. The SHANICLE guidance system was based on the LORAN navigation system, which

had been developed by the Americans during the Second World War; with it ships and aircraft could determine their position by cross linking with a van-based main and several secondary transmitter stations. From the time differences measured in microseconds between the respective transmission signals one could determine their position. SHANICLE was considered highly accurate, but suffered development problems, such as with the receiving antenna. Also, the LO-RAN transmitter network was not always left on and was not available everywhere.



Likely Matador Targets: Mass deployment against the Il-28 airfields along the Oder river

By 1957 the TM-61C had replaced all TM-61As. According to the available sources, the TM-61C after 1960 reverted back to the old MSQ system, because the SHANICLE ground stations were over loaded. In the Matador, with SHANICLE, their potential range of 1,100 kilometers (683 miles) would have been fully exploited. Externally, the TM-61C differed from the older A model only by increasing the rear of the fuselage above the jet exhaust nozzle outlet ("Dog house"). "It is rumored" that electronics originally associated with the SHANICLE were housed there.

For years, the Matador launch crews served in their grinding, often boring service in the middle of nowhere. A Matador launch crew consisted of eleven men: a launch-officer, a crew chief sergeant, two warhead technicians, two technicians for the flight control systems, two control technicians, two fuselage and mechanical technicians and a technician for the launch booster. A typical launch position was called a pad with a missile in immediate readiness to launch. According to

American sources - and in contrast to the information that came to East Berlin - in case of alarm no longer than 15 minutes were needed to launch, some teams might have done it faster also. The site had a second launch position with a second missile that could be ready to launch by a crew in 20 to 30 minutes. According to the regulations there were to be a minimum of 24 Matador in the air within eight hours from each of the three squadron.

The key word was mobility. While the primary targets of the missiles were covered during Victor Alert, these targets would be transferred to other units in case of an alarm, and the original units started on their way to other pre-planned positions. The East German opponents suspected that long ago: "The current basing of the Guided Missile Wing is in our view only applicable until the initial period of war because of the relatively easy detectability of their launch sites puts them at risk and can be quickly destroyed, the mobility of the launchers allows for a fast relocation of the squadron to other, already-prepared positions. The possibility of using the missiles on roads and highways is our view in the foreground. "

Actually mobility was another thing. The Matador was movable but, in the truest sense of the word, not mobile. Each launch unit required at least 25 vehicles, which wound like a serpent through the Hunsrück, the Eifel and the Palatine forest. Once at the launch pad the unloading of the missile from the transport trailer and positioning it on the Zero-Length Launcher required a separate dedicated crane. That took time; also the repeated grueling trips more than once damaged the sensitive electronics of the missile system. Then came the muddy, narrow and in winter, the frequently icy and snowy roads of the highlands which the missile convoy could not easily cope with. It was time for a new, truly mobile system with new missile - the Mace.

### Anything but an Emergency Solution

By the end of the 1950s cruise missiles were not longer considered stopgap when compared to manned combat aircraft. It was not so long earlier that a distinction was made between day and night fighting. The American F86F Sabre and F100 Super Sabre in Bitburg and elsewhere were not operational in all weather conditions. The cruise missile were. Once they were on alert in their position, they could be launched in wind and rain, snow and ice, day and night. Thanks to their

flight altitude of some 13,000 meters (42,650 Feet) they were immune to most conventional anti-aircraft guns. Air defense missiles did not exist at that time. At best, fighters could be dangerous because of the missiles relatively straight approach, constant height and speed to their target. But, the Matador did have other advantages over manned aircraft: its construction did not have to sustain the stresses of complicated flight maneuvers and did not have to make a round trip. The cruise missiles were throwaway products - reliable, but cheap disposable aircraft. A Matador at the end of the 1950s - without a warhead cost \$70,000 U.S. dollars. A long-range B-52 bomber cost a hundred times as much, a more direct "competition" the F-100, which cost ten times that amount. The cruise missile was a highly cost effective weapon.

### Short Episode with the German Army

The Bonn Federal Ministry of Defense saw it the same way. Initially German Defense Minister Franz Josef Strauss had toyed with the idea of using the Thor intermediate-range missile, but this idea was rebuffed by NATO Supreme Commander Lauris Norstad. Germany got the TM-61C Matador instead. The first Luftwaffe Officer Missile Corps was formed on 2 September 1958. In February 1959, the 11th Guided Missile Group was established at Kaufbeuren Air Base, just recently abandoned by the Americans. Theoretically, it would also be possible to equip the German Matador with conventional warheads. Practically, however, accuracy, or circular error probability (CEP) of the Matador was relatively large, making use of non-nuclear warheads unrealistic. Therefore, the only effective use of the missile would be with nuclear warheads, according to an internal memorandum from the Joint Staff of the Air Force. In any case it should "be safely assumed that a future war is a nuclear war." [9] Thus the missile group 11 would be the first unit of the Bundeswehr, to be use nuclear warheads, of course under the supervision of the United States.

In light of the Matador already being obsolete, it was dropped in July 1959 however, the decision was made to keep and equip the group merely as a training unit and not for tactical use. The U.S. did provide the agreed to 24 missiles, however with only two launch trailers. Thus, the German Matador Group had no operational value. Ironically, the usually well-informed East Berliners got the accuracy of the detail all wrong and told this story in 1963. "Missile group 11 of the West German Air

Force in our view has a full battle and operational readiness and is included within the organization of the nuclear weapons commitment of NATO, and is especially in the area of the 4th Allied Tactical Air Force. Their objective is against fixed targets in depth, especially during the execution of the first blow in the initial period of a missile-nuclear war." If we believe the report of eyewitnesses, the missile group was not only doing their inevitable military drill and making visits to their training areas, but were primarily occupied with setting up a beer cellar on their air base.

The Defense Committee of the Bundestag had already decided in late October 1959 to order 96 Mace Bs as a successor to the obsolete Matador. Thus the wish of a long range presence by Air Force Inspector General Josef Kamhuber seemed at last to become a reality. Finally "we can with 2 -3 missile of this type, for example, atomize Moscow", he noted in June 1958. The first Mace squadron would be house in fortified positions in the southern Black Forrest, in the Frauenwald near Landsberg. For the storage of the missiles and warheads they planned to convert a massive, unfinished 1945 bunker called Vineyard II. After the election of John F. Kennedy as U.S. President in January 1961 his Secretary of Defense Robert McNamara, however, did everything to dissuade the Germans from acquiring the extremely politically controversial American weapon system. On 15 March 1961, Minister Struss suggested in a letter to the American embassy, to retract their Mace option. Instead, the Army would now get Pershing missiles with a much smaller range. Guided missile group 11 was disbanded in 1963 and converted to Pershing missile group 13.

### An almost forgotten weapon system

While the West German Army was still flirting with the Mace, the Soviet Union was busy deploying new weapons immediately along the inner German border. These new cruise missiles - were called Front-line cruise missiles (Frontowaja krylataja raketa), and they were there for almost the entire 1960s aimed at the west. But, where as the U.S. missiles in West Germany were somewhat public knowledge, in the Russian historical and military records, the Russian missile presents is as good as lost. Only when researching at the Federal Archives in Koblenz, the authors encountered unexpected and vague entries in records of the Federal Intelligence Service (BND). At the beginning, notes on an index card about an air base called Quedlinburg-Quarmbeck, which initially did

not seem particularly relevant: "Air Force motor vehicle traffic, on 12 and 25 June 1961, heard test runs of engines or the like." A few months later, the observations are even more precise. "Camouflage netting on item installation 20 meters wide. According to a rumor the object is a rocket launch pad. From the objects...

came noises that could be heard several miles away - even at night - it is a frequent swelling and easing, wavering, similar to the whistle of jet aircraft, however, of high volume, duration 3 to 5 minutes, no sirens." A French intelligence source summed up on 15 February 1962 as follows: "For years, Soviet armored units with T-54 tanks and a unit of the Air Force were stationed in these barracks, the people hear from the compound shrill sounds that are reminiscent of jet engines." In the same period, several Soviet Technical support vehicles were seen, including heavy transport trucks of the type MAS-200 and JaAS-214.

The following narrative aroused special interest: "On November 2, 1963 assignment changes in the facility at Quarmbeck was detected with the arrival of the troops by road. On 12 November came rations and supplies. 1162 men, members of the Air Force, now seem more strongly represented than Army forces. Excavations in the south end of the barracks square appear complete. On the site two concrete mixers are in use. The nature and purpose of the construction work gives no descriptive answer, suspected that therein an air defense base is being created. Listening device (radar?) in the middle of the place. Also stored in the northeastern corner of the square probably two Missiles the source described as 'MET' missile covered with camouflage netting to block the view from above." [12] The phrase "MET-missile" can for the first time give a concrete conclusion on the based weapons system: The Soviet side had missile wings called Front-line Missile System (FKR) or Front-line Cruise Missile with the proper name Meteor. That was the proof: Front-line cruise missiles of this type were deployed from approximately 1960/61 in East Germany.

Like the U.S., the Soviet Union had taken forceful efforts to recreate the German V1 after the Second World War. Unlike the other side of the Atlantic the Soviets would continue to concentrate primarily on air-launched cruise missiles, which were to be used primarily against surface shipping targets. The first practical result was the

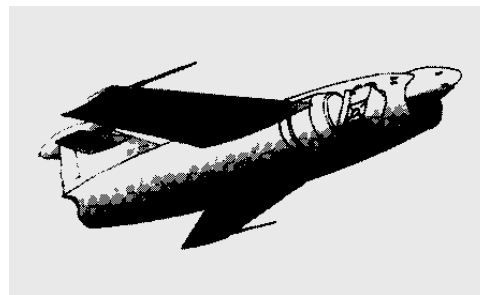
Raduga KS-1 Kometa, in principle, a modified MiG-15 without a cockpit. The Kometa had a range, initially 80, later of around 150 kilometers and was launched from a Tupolev Tu-4K(S) "Bull", (Russian copy of the U.S. Boeing B-29) or from a Tupolev Tu-16KS "Badger B". The 124<sup>th</sup> Mines and torpedo air regiment in Gwardejskoje was equipped with twelve Tu-4KS. By the end of the 1950s the Soviet Union possessed a Maritime Air Force of more than five regiments, each with twelve Tu-16KS rocket carriers.

#### Our Opponent the FKR-1 Missile System

The Soviet tactical KS-7 Meteor was developed from the basis of the airborne cruise missile KS-1 Kometa. Under the name of front wing (Tactical) missile system FKR-1 (4K87) they were officially introduced into service on the 3rd March 1957. An important feature was achieved with the help of a single axle trailer launcher.

The sustainer engine of the KS-7 Meteor was an RD-500K which provided a thrust of about 3400 lb. After starting the turbojet engine went immediately to full thrust and was not regulated. The fuel capacity was 88 gallons. The Meteor was initially boosted by two rockets of the SPRD-15M type with a four and a half seconds burning time, these solid rockets provided 41,000 lb thrust. The Circular Error Probability of the Meteor guidance was to have been 1640 feet - that limited the effectiveness of it if carrying a conventional warhead of 1100 lbs. The nuclear warhead it carried weighed 2,222 lbs with a yield of 12 Kiloton.

The only known organization to have these missiles available were the Soviet Air Force group, or the military district directly subordinate. Altogether, in 1959, seven regiments of the Soviet Union were equipped with this weapon system. Every complex included eight launch pads and 20 missiles. Tank cars, auto cranes, various inspection and maintenance stations and unidentified close radio measurement and control systems completed the weapon system.



To Be Continued:

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There she is, Miss L now on display at the Indiana Military Museum at Vincennes, IN. The official dedication of the missile will be held later this year. The CGM-13B Mace was formally on display in Florida before being moved and refurbished by members of the Tac Missileers Organization. See the Tac Missileers Organization and the Indiana Military Museum web sites for detailed pictures and the full story of the rescue and move from Florida and the refurbishment process in Indiana.