“Dangerously Straining the System: Soviet Nuclear Force Operations and Incidents after ABLE ARCHER 83, 1983-1987.” Concise Version published in Survival Vol.57 Issue 4, 2015.

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 In a 2005 interview, former Western Group of Forces commander, Colonel General Matvei Burlakov, explained that, in his view, the peak of the Cold War was in the 1980s. Soviet plans were to strike pre-emptively, he asserted, when tensions first started to rise in a crisis. All that remained was for the signal to be sent and they would be the first to do so. He also stated that they would be the first to employ nuclear weapons in such a scenario: “Gromyko may have said one thing, but the military had other ideas.”[[1]](#endnote--1)

 A quarter of a century after the collapse of the Berlin Wall Russian TU-95 BEAR nuclear bombers regularly probe the air defence systems of NATO countries, including Canada. With heightened tensions over the war in Ukraine and with increased conventional force signaling in the Baltic states and Poland, some of the more comfortable mechanisms by which the Cold War was fought are back in play. Although this threat may be a breath of fresh air after a decade and half of dealing with Al Qaeda and its allies, the West must guard against complacency. Assumptions about how and why the Cold War ended should be re-examined if NATO and its members are to contemplate a strategy and an end-game to address the current situation.

 The debate over the Cold War end game and its components is now well underway. Recently there has been substantial public attention directed at a possible nuclear crisis that emerged around the mounting of NATO command post exercise, ABLE ARCHER 83 that was held in November 1983 coincident with the deployment of the Pershing II (P II) missile system to West Germany. One view suggests that the ABLE ARCHER event, however we define it, was akin to or on par with the Cuban Missile Crisis. Another view downplays its gravity and places the event within the context of the influence campaign waged between the Soviets and NATO over the Theatre Nuclear Force (later Intermediate Nuclear Force) modernization issue that dominated public debate starting years earlier in 1977. Consequently, we have a lack of consensus even on identifying the species of situation we are looking at.[[2]](#endnote-0)

 Historiographically, we are interested in events that are on par with the Cuban Missile Crisis. It was dramatic. It was potentially lethal. It was part of the 1960s social zeitgeist and the living background to a generation of scholars. There is considerable interest in acquiring more and more discrete information to see, perhaps morbidly, ‘how close we came.’ The evidence of this lies in the continual excavation into the events of October 1962 even in the 2000’s. As a result, and with that seam now mined, the possibility that events in the 1980s were as potentially lethal is of potential interest and thus scholarly attention.

 The idea that the Soviet Union prepared to launch a so-called first strike against the United States in 1983 in response to the rhetoric and behaviour of the Reagan administration is not new. Indeed, a defector alerted Western intelligence agencies to this possibility in the 1980s and it became general public knowledge around 1991.[[3]](#endnote-1) Some bits and pieces emerged in the early 1990s but few specific details. To date there has been no evidence presented that Soviet forces achieved a force generation as well as a subsequent alert posture that would have permitted such a massive strike in November 1983, nor has their been any similar material released on the status of American and other NATO forces. Research efforts, however, continue and we cannot rule these possibilities out.

 It is conceivable that we may be looking in the wrong direction, at the wrong period, and at the wrong events. This article proposes a new and broader framework to contextualize ABLE ARCHER. Indeed, it was not the events of November 1983 that were necessarily an issue on the nuclear front. It was what happened afterwards over the course of the next two years that was potentially problematic for US-Soviet relations. The number of incidents and accidents incurred by Soviet nuclear forces were a possibly greater threat than the events surrounding ABLE ARCHER 83. And, up to now, there is no comprehensive examination of such incidents comparable to the vast amount of information available on their American equivalents.

What was the INF Campaign?

 In general terms, the accepted chronology of the Intermediate Nuclear Force issue starts in 1977 when European members of NATO, led by West Germany, expressed serious concern over the deployment of a new Soviet missile, the RSD-10 Pioneer (better known under its NATO reporting name SS-20 Saber). The deployment of this system triggered a series of action-reaction moves that neatly highlights the interaction between technology, strategy and diplomacy during the Cold War.

 The American intelligence apparatus, specifically the NRO, NSA and the CIA, tracked the SS-20 testing and deployment program as it progressed in the 1970s.[[4]](#endnote-2) They would have learned, for example, from the AN/FPS-17 radar sites located in Diyarbakir, Turkey that flight testing occurred from Kapustin Yar between September 1974 to January 1976. They might possibly, from the two TRACKSMAN intercept facilities at Behshar and Kabkan in Iran, have learned that the SS-20’s range was 5 000 km. NSA sites in both Turkey and Iran likely picked up the fact that the first SS-20 unit went on combat duty on 30 August 1976.[[5]](#endnote-3)

 This particular ballistic missile system destabilized an already precarious balance in nuclear force capabilities and thus had implications for the existing NATO and the American deterrent system as a whole. In particular, the technical specifications of the SS-20 generated concern within NATO countries: it was mounted on a large, multiwheeled transporter-erector launcher and was thus mobile; it was MIRV’d with three 150 kt warheads; and the missile’s range covered the entire Western European NATO Area.[[6]](#endnote-4) In effect, the SS-20 replaced the existing SS-3 Shyster, SS-4 Sandal, and SS-5 Skean intermediate range ballistic missile force established in the late 1950s and early 1960s. Those systems were much more vulnerable and less reliable: they were mounted in clusters of four fixed launchers throughout the western Soviet Union. More importantly, these systems took two hours to prepare for launch, which theoretically afforded NATO warning time in a crisis situation in order to respond diplomatically or to implement pre-emptive action. Indeed, NATO theatre-level nuclear capabilities were specifically designed to offset the SS-3, SS-4 and SS-5 missile force throughout the 1960s.[[7]](#endnote-5) That comparatively stable situation was threatened by the advent of the SS-20’s which could be fired from their mobile launchers in minutes. The Soviets now had what appeared to be a nearly invulnerable theatre nuclear force capability.

 At the same time, NATO’s theatre nuclear forces were aging and lacked overlapping capabilities. In the 1960s there were RAF Vulcan bombers, American and German Pershing I ballistic missile, US Air Force Mace cruise missiles, and part of the US Navy’s Polaris missile submarine force that was assigned to NATO nuclear planners. By the 1970s, the 144 or so Mace missiles were gone, the 100 Vulcan bombers were converted to a conventional role. This left the 108 Pershing I’s and the submarines. NATO’s increased dependency on submarine-launched missiles to counter the Soviet intermediate range missiles thus became a vulnerability overnight: there were 400 re-entry vehicles on Poseidon missiles assigned to SACEUR for his target planning and he had a NATO release process for them,[[8]](#endnote-6) but because of technological limitations the Poseidon was incapable of targeting Soviet mobile missiles. In addition, it was noted at the time that the increasing size and capability of the Soviet Navy’s Mediterranean Squadron was geared towards countering missile launching submarines assigned to NATO.[[9]](#endnote-7)

 Why exactly did this forces-based chess game matter? NATO strategy was embodied by the MC 14/3 document, better known as Flexible Response. This conceptual deterrence framework saw NATO responding to whatever level of coercion that the Soviets engaged in, and then dominating that level to prevent escalation to the next more destructive level. Escalation was assumed to eventually lead to all-out global strategic nuclear warfare between the United States and the Soviet Union and thus had to be forestalled at all costs whenever the opportunity presented itself during the process. The Soviet SS-20s prevented NATO from, in theory, threatening theatre nuclear weapons use to deter lower-level aggression. That in turn permitted the Soviets freedom of action at the conventional level and tactical nuclear levels of warfare once hostilities were initiated. NATO no longer could use tactical nuclear weapons to offset Soviet conventional superiority, fearing a massive theatre-level nuclear response against its tactical and theatre nuclear systems. As it was considered too expensive to maintain matching conventional forces in ‘peacetime’, the only feasible options were to modernize NATO’s theater nuclear forces; come up with a whole new strategic concept; or submit to Soviet coercion.

 One issue that has not received enough scrutiny in the historiography is why the Soviets decided to conceptualize, manufacture, and deploy the SS-20 system. Did they know how destabilizing the system was to NATO, or was that even relevant to them? Those decisions took place near a decade before their initial deployment in 1976. The only window we have thus far into SS-20 development is the work conducted by James Cant who interviewed a number of former Soviet leaders on the issue. Cant determined that the SS-20 emerged in the technological milieu of Soviet “nuclear euphoria” in the 1960s which generated a strategy akin to massive retaliation. However, as the situation evolved in the 1970s concepts of theatre-level nuclear war emerged in Soviet circles but there was no apparent consensus between the missile builders, doctrine specialists, strategists, or politicians as to where the weapon fit, nor apparently was their consensus at this time on where strategic nuclear war ended and theatre nuclear picked up. The SS-20 was, apparently, developed out of sheer momentum in the Soviet system. Then a doctrinal niche was created for it and fine-tuned once NATO expressed its displeasure.[[10]](#endnote-8)

 The NATO decision to confront the matter of the SS-20s occurred after the ‘Neutron Bomb’ debacle. The development of Enhanced Radiation Warheads (‘neutron bombs’ in popular parlance) for Lance rockets and 155mm artillery tactical nuclear systems assigned to NATO commanders leaked into the press in 1977. This tactical nuclear force upgrade, designed to replace 1950s and 1960s-era tactical nuclear weapons with less destructive warheads, was assailed by an integrated Soviet propaganda campaign that succeeded in convincing the Carter administration in 1977 to not deploy the warheads to Western Europe. That Soviet campaign generated serious concerns in some NATO capitals, particularly Bonn and London.[[11]](#endnote-9) If NATO forces lacked the ability to offset Soviet conventional superiority with tactical nuclear weapons, and also lacked the ability to escalate to theatre nuclear weapons use, the only option remaining was a return to uncredible Eisenhower-era Massive Retaliation strategies. The famous question, paraphrased in so many ways at the time, was this: would the United States trade New York for Paris? In other words, would the United States escalate to strategic nuclear warfare if Western Europe was attacked? The western Europeans craved linkage, and the theatre nuclear force served that purpose. The fight was on to convince a wavering Carter administration that this state of affairs was valid.

 Consequently, the “dual track” strategy evolved in NATO circles by 1979.

During the course of deliberations on what to do about the new threat, there were essentially two camps. The first was Denmark, Norway, and “especially the Netherlands” who wanted to reduce NATO reliance on nuclear weapons and use arms control as a tool to limit the number of SS-20s. The second consisted of West Germany and the United Kingdom, who argued that NATO’s theatre nuclear forces should be modernized to block the Soviet move. During these deliberations the Carter administration blundered again and unilaterally committed to the withdrawal of 1000 nuclear warheads starting in December 1979[[12]](#endnote-10) and discussed the possibility of reducing a further 54 nuclear-capable F-4 fighter-bombers, and 36 Pershing 1a missiles if the Soviets made substantial conventional force reductions. At this time “the Pershing component” was considered “especially important because a follow-on missile that would fit existing Pershing launchers is a prime candidate for NATO deployment.”[[13]](#endnote-11) Consequently, the idea that a Pershing upgrade could become part of these larger negotiations over limiting Soviet capabilities existed as early as 1980.

 As for the Pershing II itself, this system’s history did not parallel SS-20 development and herein lay grounds for concern on the Soviet’s part. The existing Pershing 1a system, in service since the 1960s, had a 400 mile range[[14]](#endnote-12) and relied on a W 50 nuclear warhead which had three possible yields: 60, 200, and 400 kt. The accuracy was not considered high enough for a hard target kill, thus the large yields. In 1973, an analysis of the Cuban Missile Crisis undertaken by the Advanced Research Projects Agency (ARPA) suggested that it would be better to have highly accurate, low yield weapons to reduce collateral damage in a similar situation or a European war to avoid escalation. This analysis was folded into discussions over a possible Pershing replacement or upgrade conducted during 1975. The initial design was for a missile that could be used against dispersed battlefield targets or hardened underground command bunkers. Two warheads were planned: the W 85 (adjustable yield between 5 and 80 kt) and the W 86 (a Earth Penetrating Warhead with a 1 kt yield).[[15]](#endnote-13)

 During this time and in parallel to these discussions, the United States had deployed Maneuvering Reentry Vehicle (MARV) technology on its ICBM and SLBM systems. Unlike the SS-20, which was a pure ballistic missile equipped with independently targeted warheads, the MARV system that was eventually built into the Pershing II permitted discrete course adjustment to the missile itself using externally-mounted control surfaces which came into play after the missile reached its apex. This in turn reduced vulnerability to Soviet anti-missile systems and dramatically increased accuracy which was now measured in feet. These developments existed independently from the SS-20 developments, tests, and deployments.[[16]](#endnote-14)

 However, once the SS-20 became an issue, more attention was directed towards Pershing II capabilities while it was under development in 1978. Re-examination undertaken by a joint interagency group (Defense Nuclear Agency, Department of Energy, State, Congress, and US Army) saw benefit in specific capabilities. First, the range of the Pershing II, 1150 miles, meant that it “could reach Moscow to hold the Soviet capital at risk. This would provide a deterrent to Soviet aggression and use of its SS-20 long range, mobile missiles.” Furthermore, if the Soviets embarked on a conventional campaign, the accuracy and low yield permitted Pershing II to be used against the finite number of logistical choke points and facilities in Poland, Czechoslovakia and western Russia that, if destroyed, would slow down the conventional juggernaught and give NATO conventional forces a chance.[[17]](#endnote-15)

 The State Department opposed the lower-yield Pershing II, arguing that it “might lower the nuclear threshold” and even opposed the 1150 mile range, expressing concern over possible future arms control negotiating issues. The Department of Energy needed to renew underground testing for the Earth Penetrating Warhead, and the Carter administration was not going to permit that. As a result, the W 86 warhead was cancelled but the Pershing II programme continued in modified form throughout 1978-1979.[[18]](#endnote-16) Indeed, the Americans had their own version of a “dual track” strategy and decided to develop and deploy the Ground Launched Cruise Missile, which was based on the US Navy’s Tomahawk system, alongside the Pershing II. The GLCM (“Glick’em”) was also exceptionally accurate, equipped with a W 84 warhead (alterable between .2 to 150 kt yield), but since it was an ‘air breather’ it was much slower and took hours to reach its targets instead of minutes.[[19]](#endnote-17)

Pershing-*angst*

 It is not exactly clear when the Soviet Union’s leadership first developed an obsession with Pershing II and its capabilities. The SS-20 deployment continued throughout 1979-83, eventually building up to 441 missiles with three re-entry vehicles each for a total of 1323 150 kt nuclear warheads targeted at NATO countries. NATO authorities debated over a response, with numbers like single-warheaded 108 Pershing II and 400 or so GLCM bandied about. At some point while the Pershing II design was finalized, the systems were under construction and while the crews were training, the Soviets became aware of the Pershing II’s incredible accuracy and its range characteristics. It is probable that this knowledge was acquired through espionage and other intelligence channels but the specifics are not available at this time. Suffice it to say, their alarm was palpable years before the Pershing II was built and fully tested.

 The level of Soviet anxiety vis-à-vis the Pershing II was in part confirmed by the creation of a GRU ‘troops for special purpose’ unit whose task was to track down and destroy Pershing II missiles and their personnel. This unit was formed long before the Pershing II even deployed and based in Hungary where it was equipped with its own dedicated helicopter force.[[20]](#endnote-18)

 In what appears to have been a controlled leak, a Germen edition of Reader’s Digest article written by journalist Dale Van Atta described how Soviet Spetsnaz would murder NATO civilian leaders in their homes to disrupt the nuclear authorization process, while their compatriots would hijack US Army buses and then gas Pershing II unit personnel with nerve agents in their bases before they could deploy. He also noted that “Strangely, a model of these Pershing II missiles already stood in [a] Soviet training camp before they were even stationed in the Federal Republic of Germany in 1983.”[[21]](#endnote-19)

 From 1979 to 1981 the INF situation remained stalled. The response conveyed through TASS to the NATO dual-track decision was final: no negotiation. As a result, American lawmakers refused to ratify SALT II in December 1979. The invasion of Afghanistan and the concurrent tensions over Poland in 1980-81 froze the situation in place. Within the new administration led by Ronald Reagan, however, there remained interest in re-assessing the situation. What forced the issue was how the Reagan administration would respond to the dual-track strategy in NATO ministerial circles. The strategy needed a start date for negotiations and for deployment so that momentum on the issue could be re-gained. This was dictated by domestic political considerations in West Germany and the United Kingdom. The National Security Council agreed in April to examine the issue in order to ensure that any INF negotiations were ‘de-linked’ from the Carter administration’s failed SALT II approach and re-approach the Soviets later in 1981.[[22]](#endnote-20)

 After seven months of work, the “Zero Option” emerged: the United States would not deploy Pershing II if the Soviets dismantled the SS-20’s and the older SS-4 and SS-5 IRBMs. Behind the scenes, the CIA analysis of the unstated NSC consensus was that “there is no conceivable INF agreement that is both negotiable with the Soviets and in the US national security interest.” As a result, the objectives of the INF negotiations were “to ensure political support among Allied governments in Europe for deployment of the GLCM and Pershing II” and “to convince the European and American publics that it is Soviet intransigence which renders impossible the conclusion of arms control agreements which genuinely enhance security.”[[23]](#endnote-21)

 In other words, INF negotiations were linked to larger objectives in the Reagan arms control strategy. This was explicitly stated in National Security Decision Directive No, 15. Pershing II and to a lesser extent GLCM, would be used as a lever to get the Soviets to the table and push for real cuts to strategic nuclear arsenals. The stakes in this game were greater than the Western Europeans even imagined.[[24]](#endnote-22) Ten days later, on 30 November 1981, the Soviets were back at the table and the INF talks started.

 Within six months, however, the talks failed after the 501st Tactical Missile Wing of the US Air Force stood up at RAF Greenham Common in the UK. Four months later, Leonid Brezhnev died which generated a level of confusion inside the Soviet leadership, including a heightened alert of some kind involving Soviet nuclear missile units in East Germany, for which details remain unavailable.[[25]](#endnote-23)

 In early 1983 the American policy making and intelligence apparatus was increasingly sensitized to the growing Soviet obsession with Pershing II. This obsession did not make sense to the Reagan NSC. In a January 1983 briefing, the President was informed that at this time there were 333 SS-20 missiles deployed (with three warheads each). Only 56 GLCMs with single warheads were in place. In this meeting Secretary of Defense Casper Weinberger noted that “The Soviets have a great fear of the Pershing (PII). It is the only leverage we have on them. It takes only 7 or 8 minutes, and it is mobile. The Soviets will do almost anything to get rid of it. Therefore we should push 0/0.” When pressed by Reagan for an explanation, DCI William Casey pointed out that “The Soviets do not want to see Pershings deployed. They will never agree to a deal which permits Pershings. They have been building a 20 minute launch-on-warning capability but the Pershing only provides 8 minutes.” This Soviet “preoccupation,” as George Shultz called it, needed to be exploited. Indeed, it was understood that cuts could be made to GLCM deployment, which was ongoing, but not Pershing II. That would politically undercut Helmut Kohl, who was now leading in the polls in West Germany. Reagan noted that “if there are 1046 warheads on SS-20s, could we say that the Soviets can destroy every town in Europe of a particular size? We could tell that to the placard carriers.” Finally, Reagan concluded: “Ok. We will deploy. We will start with zero.”[[26]](#endnote-24)

 The CIA was asked for an assessment of possible Soviet responses to the planned Pershing II deployment. The resulting document, “Soviet Strategy to Derail US INF Deployment,” was distributed in February 1983 and is a seminal, not to mention prophetic, discussion of the issues. The CIA asserted that the Soviet Union’s objectives overall were to “further its long-term objective of weakening NATO and dividing Western Europe from the United States.” The INF issue was part of this gestalt. Deploying Pershing II was not seen merely as “an effort to upset the theater balance” but to

change the linkage between theater and intercontinental war to the advantage of the United States. Without resorting to use of its central systems the United States would be able to threaten the Soviet homeland, including a portion of the USSR’s strategic forces and its command, control, and communications network….[the Soviets] may believe that the scale of NATO’s deployments would nullify the advantage in escalation control that they had planned to secure with [the SS-20] force….if confronted with a conventional attack by the Warsaw Pact, [NATO] would be tempted to use its new INF systems before they were destroyed. If the Soviets believed NATO would use these systems, they might feel even more compelled to launch a theater-wide preemptive strike.[[27]](#endnote-25)

 The Pershing II was considered a “particularly dangerous” threat by the Soviets “because its short flight time and accuracy would make it a threat to major elements of their command structure and strategic forces, which would not have adequate time to react.” The flight time factor, 7 or 8 minutes, was the compelling issue. The GLCM was seen as problematic because it “complicates Soviet air defense strategy” and they were dispersed in depth in five NATO countries.[[28]](#endnote-26)

 CIA analysts saw the emergent Soviet anti-Pershing II strategy as having both overt political and covert ‘active measures’ components. Among their public diplomacy pronouncements, the Soviet announced that they would adopt a launch-on-warning policy if Pershing II were deployed. Heavy-handed threats were made via media outlets (in one case a Brezhnev interview in *Der Spiegel*) that Soviet forces would apply “retaliatory strikes of great yield at the supposed areas of [Pershing II] deployment.”

 The covert campaign against Pershing II deployment was extensive. Over the course of the previous year, the Soviets had “conducted an ambitious campaign to infiltrate, manipulate, and exploit the European peace movement.” This was considered to be an adaptation of the successful anti-Enhanced Radiation Weapon campaign, using the same organizations and techniques. All Communist Party organizations in Western Europe were part of a coordinated campaign funded by Soviet and Warsaw Pact country elements. The World Peace Council was a key Soviet front organization. UNESCO was infiltrated to become “an unwitting front organization.” KGB officers used their media connections in the West to push the anti-Pershing line. Western ‘peace’ organizations received funding via Soviet cut-outs. *Der Spiegel* was seen as a particularly important mechanism. Forged documents purporting to be from US Secretary of State Alexander Haig to NATO Secretary General Luns were distributed to sympathetic media outlets. Outright sabotage against Pershing II units was not ruled out.[[29]](#endnote-27)

 An important Soviet covert mechanism was Generals for Peace, led by former Bundeswehr general Gert Bastian. Bastian was married to Petra Kelly, the leading West German anti-nuclear proponent. Generals for Peace, which included former British, American, Canadian, Dutch and West German generals, was covertly funded by the East German intelligence agency. The ‘cult status’ of these former generals in the peace movement was exploited to great effect in attempts to publicly discredit NATO strategy during the INF debates.[[30]](#endnote-28)

 Finally, the CIA predicted concrete Soviet responses by their nuclear forces. Their analysts noted that in late December 1982 that in his leadership address, Yuri Andropov asserted that “ the USSR was testing a long-range cruise missile and would deploy it if the United States proceeded with plans for cruise missile deployments.”[[31]](#endnote-29) The other possible military options were assessed to include an even larger SS-20 deployment; station submarines with sea-launched cruise missiles near US coasts; or, stunningly, “install nuclear capable offensive systems in Cuba, either overtly or covertly.” The prospect of a replay of the Cuban Missile Crisis appeared to be a real option to the analysts. That said, however, the CIA believed that “The Soviets recently have modified a Y-class submarine and a number of BEAR bombers, apparently to serve as platforms for a long-range cruise missile, which could be targeted against US territory.” This was considered a more likely course of action than another Cuban adventure.[[32]](#endnote-30)

 The accession of former KGB Chairman Yuri Andropov as Brezhnev’s replacement was cause for concern in Western circles. Andropov showed few signs of conciliation. The ones that were put on public display involved the ‘transfer’ of mobile systems to the Far East in return to limiting NATO intermediate-range forces to those already possessed by Britain and France. The SS-20s redeployability was an obvious flaw in this position and only served to harden Western European resolve, especially after the West German elections in March 1983 which delivered a staggering blow to the anti-Pershing left wing in the Bundestag. The Soviets continued to deploy even more SS-20s while they sowed fear over the undeployed, 108 Pershing II’s. Andropov ominously told his advisors that among various ‘countermeasures’ in Europe, he would push for “undefined steps affecting the security of the United States.” The American intelligence community concluded that “in the absence of further evidence, we believe that any Soviet action directed at US territory will not be intended to create a crisis, although we cannot rule out the latter possibility.”[[33]](#endnote-31)

 Resumption of INF negotiations went nowhere by late 1983. The Reagan administration approved an interim negotiating position whereby the US would limit its INF deployment if the Soviets reduced their INF to that level. During their internal deliberations, the NSC re-emphasized that fact that “The Pershing II system offers a much needed, time-urgent, hard-target kill capability. Any reduction of the 108 Pershing II’s to maintain a fixed ratio would reduce NATO’s ability to hold at risk time-urgent targets at longer range. Clearly the Pershing II system cannot be eliminated short of Soviet acceptance of the zero-zero outcome.”[[34]](#endnote-32)

 There was no Soviet response other than the deployment of even more SS-20s. At this point there were an estimated 351 SS-20’s with 1053 nuclear warheads deployed compared to 208 GLCMs with single warheads, and no Pershing II’s.[[35]](#endnote-33) A 1983 CIA analysis on how nuclear forces would be employed in Europe by the Soviet Union was alarming.

 The ‘front’ forces stationed in East Germany and Czechoslovakia would hit targets in the eastern third of West Germany, while the Strategic Rocket Forces (in this case, the SS-20 force) would be employed “the rest of Central Europe.” Once the decision was made to go nuclear, the ‘front’ assault would be “massive” and consist of “200 to 400 weapons delivered to under 100 targets and would total about 50 megatons in an area 250 to 400 kilometers wide by 100 kilometers deep.” The Soviets “would attempt to pre-empt NATO’s use of nuclear weapons to preclude a large strike on their forces [REDACTED] Soviet planners expect that nuclear strikes probably would occur almost simultaneously with NATO strikes because of difficulties in timing a preemptive strike.” Prior to the release of nuclear weapons, the CIA assessed that conventional operations would be employed against Pershing missile units to degrade their capability. Once there was nuclear release 20 to 25 missiles, likely SS-20s, would be allocated against probable Pershing II locations, among some other key targets. As the analysts noted:

 Soviet writings also identify overpressure as the primary means of inflicting damage….Soviet damage calculations do not usually include secondary effects like fire or fallout. Fallout is probably not included as a primary damage mechanism because the high altitude bursts planned by the Soviets would not generate much residual radiation.[[36]](#endnote-34)

 Thus the prospect of 60 to 75 150 kt nuclear weapons airburst at 600 to 1100 meters altitude over southern West Germany to destroy the Pershing II units was a very real possibility if the situation in Europe deteriorated. If the decision were made to use ‘front’ nuclear forces instead of strategic rocket forces, analysts believed that six SCUD-B missiles equipped with 50, 100 or even 300 kt yield nuclear warheads would be used over each 10 by 15 kilometer square area that a Pershing II battery was assumed to be operating in.[[37]](#endnote-35)

ABLE ARCHER 83

 Command Post Exercise ABLE ARCHER 83 was part of an ongoing series of exercises dating back to the early 1970s. Usually held in November after the large-scale FALLEX conventional ground maneuver troop exercises ABLE ARCHER familiarized staffs and decisionmakers with the mechanisms and communications systems that were part of the NATO nuclear weapons release procedures. Unlike previous exercises, however, the regularly-scheduled ABLE ARCHER 83 was conducted against a deteriorating global political situation. The Soviet shoot-down of flight KAL 007 in September that year, coupled with the Bundestag vote over deploying Pershing II missiles to West Germany and the accompanying Soviet influence campaign ensured that disproportionate Soviet intelligence attention was directed at NATO members and their systems. On 22 November West Germany voted to permit the Pershing deployment at 2222 hours that evening the first missiles arrived by C-5A transport at Ramstein Air Force Base. By 15 December the first Pershing II firing battery was certified as Combat Ready. It is important to note that the timing of Exercise ABLE ARCHER 83, the Bundestag vote, and the Pershing deployment were completely coincidental. The Soviet leadership, however, believed otherwise.

 CIA analysis produced in May 1984 that deals with ABLE ARCHER 83 remains somewhat redacted. Soviet response to the exercise was characterized as “elaborate.” These measures included “increased intelligence collection flights” which would be normal behavior under the circumstances as would “the placing of Soviet air units in East Germany and Poland on Heightened readiness,” though there was language that there was “a threat of possible aggression against the USSR and Warsaw Pact countries.” Some of the alert measures noted by the American intelligence establishment “included increasing the numbers of fighter-interceptor on strip alert.” CIA censors have redacted five lines of other alert measures, but concludes that “by confining heightened readiness to selected air units, Moscow clearly revealed that it did not in fact think there was a possibility at this time of a NATO attack.”[[38]](#endnote-36) The implication here was that missile forces were not alerted, nor were conventional ground forces, only a certain number of air units.

 As Ben Fischer noted in his work dealing with the 1983 ‘War Scare’ the situation in November 1983 “was not comparable to the Cuban crisis, when the superpowers were on a collision course, US nuclear forces were on full alert, and…the USSR had deployed nuclear weapons in Cuba.”[[39]](#endnote-37) Should that reduce our concerns over the Soviet ABLE ARCHER alert? The increased Soviet alert of conventional aircraft does seem to fit with 1983 analysis that conventional aircraft would be used to hit the Pershing II units if there were war growing out of tensions. What is unclear from the redactions is whether or not any of the ‘frontal aviation’ units in East Germany or Poland loaded up with nuclear weapons or had nuclear weapons deployed from their storage areas to alert areas, though the study notes elsewhere that there was an “Assumption by Soviet air units in Germany and Poland from [redacted] November 1983 of high alert status with readying of nuclear strike forces as NATO conducted “Able Archer 83”….”[[40]](#endnote-38)

 The American intelligence apparatus had identified eleven Soviet Frontal Aviation airfields that had nuclear weapon storage bunkers co-located with them: six in East Germany; two in Poland; two in Czechoslovakia; and two in Hungary.[[41]](#endnote-39) These sites were called GRANIT by the Soviets and manned by the so-called “Big Brothers” or “The Deaf,” special troops who handled nuclear weapons security and transport. The GRANIT facilities contained RN-28 and RN-40 nuclear bombs which yielded about 30 kt each. These bases also had Hardened Aircraft Shelters or HASs that contained a rectangular pit where “unsuspended” nuclear weapons were kept. The weapons were moved from the GRANIT bunker to the HASs at a heightened alert state. The MiG-23 or -27 or SU-24 aircraft were then moved to the HASs and the weapons “suspended.”[[42]](#endnote-40) It is probable that there were systems that picked up the RN-28s and RN-40s as they were being moved or intercepted the communications play-by-play that ordered this activity to take place. However, the lack of any significantly detectable measures to prepare for a ground campaign indicates that the Soviets were probably not preparing to go to war in Central Europe during November 1983 over the Pershing II deployment or ABLE ARCHER 83.

 That said, a serious situation did develop throughout 1984 which had effects well into 1985 and 1986. While the Soviet leadership debated responses to the Pershing II deployment, Yuri Andropov died on 9 February 1984 and Constantin Chernenko replaced him as General Secretary of the Communist Party of the Soviet Union. Was there the possibility of an improved relationship and movement on the INF and other pending arms control matters? The CIA was pessimistic in its analysis and believed that Chernenko was merely carrying out what had been decided under Andropov: “the Soviet leadership in the coming months is unlikely to approve any measures that imply a major breakthrough in relations unless they are convinced that some US concessions will be forthcoming on significant arms control issues.” Read: Pershing II.[[43]](#endnote-41)

 Over in the White House, however, the President wanted movement on arms control. The Soviets previously walked out of the INF talks three times and he believed that “There is no question that the Soviet Union is trying to make us look non-cooperative. I believe that the Soviets want to avoid the onus on having walked out.” Chernenko had approached Reagan directly in a letter expressing concern about deteriorating relations, claiming the Soviets felt threatened. Reagan was exasperated by the tone of the letter:

 In my answer to the letter from Chernenko we should recognize that we have opposite views on who is threatened. We should cite their quotations that are threatening to us; we should cite their build-up. Then we could cite the fact that in the 1940s we proposed to do away with all these systems and they said no. Nineteen times since then, we have tried to reach agreements….We can’t go on negotiating with ourselves. We can’t be supplicants crawling, we can’t look like failures….I do not intend to make unilateral concessions to get them back to the table….[[44]](#endnote-42)

 And most importantly, Reagan wanted it noted that there was a “climate of insecurity” building in the Soviet camp and that it was dangerous for both parties.

 In response to what the Soviets saw as lack of movement and in the wake of the November 1983 Pershing II deployment, a series of exercises by Long Range Aviation bombers started in April 1984. These and other unusual Soviet military activities were detected by the various components of the western intelligence community. This activity, which dwarfed the actions taken by Soviet forces in November 1983, prompted the production of a Special National Intelligence Estimate in less than six weeks.[[45]](#endnote-43)

 These Soviet activities included:

-construction of even more SS-20 bases

-initiation in late December 1983 of patrols by ECHO II-class cruise missile submarines off the US coast

-first-ever forward deployment in mid-January 1984 of DELTA-class ballistic missile submarines

-deployment of SS-12 SCALEBOARD missiles to East Germany and Czechoslovakia

-continued active measures against INF deployment

-test launches of multiple SS-20 and submarine-launched missiles

-the dispersion of Northern Fleet ballistic missile submarines

-training for the use of survivable command and control platforms “possibly in a transattack scenario”

-unilateral changes of air access rules governering the Berlin air corridors

-deployment of TU-16 nuclear strike aircraft to bases in Vietnam for the first time.

-positioning of both Soviet aircraft carriers simultaneously in the Pacific

-combined Soviet-Cuban naval exercises, including the use of large Soviet naval combatants.

-Initiation of the airlift portion of Soviet troop rotation in Eastern Europe 10 days later than has occurred in the past five years.

 All of these activities were accompanied by a barrage of Soviet propaganda activity claiming the Soviet Union was being threatened, which included Chernenko’s letter to Reagan, and a series of “dire warnings that the USSR will not give in to nuclear blackmail of other military pressure.”[[46]](#endnote-44)

 The analysts examined five theories as to what was going on. The first was that

The USSR will pursue a hard-perhaps even dangerous-line, unless US concessions are forthcoming; to maintain an atmosphere of tension conducive to pressure by ‘peace’ groups on Western governments and if possible, undercut President Reagan’s re-election prospects.

 Second, the Soviets may have been responding to “Washington’s rhetoric, US military procurement and R&D goals, and US military exercises and reconnaissance activities near Soviet territory.” Third,

Moscow itself is preparing for threatening military action in the future requiring a degree of surprise. The real aim behind its recent actions is not to alarm but to desensitize the United States to higher levels of Soviet military activity-thus masking intended future moves and reducing US warning time.

 Fourth, there might be a “hardline faction, under abnormally high military influence, to pursue its own agenda which intentionally or not looks more confrontational to the observer.” Finally, there was the possibility that none of the events were linked in any way to the rhetoric and were independent events.

 In fundamental terms, analysis suggested that the Soviets had suddenly realized after November 1983 that they had lost the overall momentum that they attained in the Cold War during the late 1960s and throughout the 1970s, and with it a potential loss of global influence:

 Soviet talk of nuclear war has been deliberately manipulated to rationalize military efforts with domestic audiences and to influence Western electorates and political elites. Some Soviet military activities have also been designed to have an alarming or intimidating effect on various audiences (notably INF ‘counter deployments’, the naval exercise in the Norwegian Sea, and naval and air activities in Asia.”

 American policymakers had to be concerned about the possibility that the situation “could in the future increase [Soviet] willingness to consider actions-event at some heightened risk-that recapture the initiative and neutralize the challenge posed by the United States. Warning of such actions could be ambiguous.”[[47]](#endnote-45) But what was actually happening with Soviet nuclear forces at this time?

New Russian Sources

 The paucity of sources on events inside the Soviet Union and regarding Soviet military units during the 1980s is well-known (the exceptional work by scholars like Pavel Podvig notwithstanding). The advent of the internet and its extension throughout the former Soviet world has, however, produced a substantial amount of new information that has generally not been exploited in Western publications. There is legitimate skepticism in the academic community with regards to internet sourcing. That said, the new information comes from three broad types of sources, each with their own strengths and weaknesses.

 First, there are the ‘comrades’ web forums. Like their Western counterparts, these veterans groups exchange old war stories, lore, and extremely detailed technical data for nostalgic purposes. For example, the rocket unit 11649th PTRB has a exceptionally detailed forum that includes pictures and discussions of the missiles, TEL’s, nuclear warheads, transportation containers, and nuclear weapons storage sites employed by the unit. The textual discussion in the forum regarding events of the day and operational conditions in East Germany is extensive and conducted with some enthusiasm by the 11649th PRTB veterans. They appear to ask why certain events happened and invite those who knew to contribute to the discussion. It is evident that the men of the 11649th PRTB remain proud of their role in the Cold War and are not afraid to express it. This is in contrast to other similar but much less detailed forums. Similarly, there is ‘The Old Bear.” It is maintained by former TU-95 BEAR air and ground crew and is the most extensive Russian site dealing with the technical aspects of the TU-95 aircraft, its variants, and operations. In many ways the data on this site is superior to the data used by Western aviation sources. There is an integrity to technical discussions among former military personnel that is discernable, despite any ideological slant.

 The second type of forum are those maintained by aviation enthusiasts. In the West, these specialists are well-known for hunting down extreme technical details of aircrafts and exchanging this information among themselves and with modelers, who require such detail for reproductive purposes. One must generally discard the politico-strategic commentary as uninformed, but when former aviation personnel choose to interact on these forums to correct the enthusiasts valuable operational-level context can emerge. Indeed, the interaction between the enthusiasts and the practitioners produces a lively debate over the existing secondary material dealing with Soviet operations.

 The third type consists of environmental groups in Russia and the Ukraine. Like Western environmental groups, the quest to uncover information concealed by the government is a near-obsession, particularly to those potentially scarred by the severe ecological damage wrought on the former Soviet Union. In these cases ideological filters are useful tools but one must refer to the technical military sources for cross checking purposes.

 Though they are not a panacea, these three source types can act as a bridge to the archival primary and interview-based material until that material eventually becomes available in the future.

Missiles of November? The Torgau PRTB[[48]](#endnote-46)

 There were four Soviet combined arms commands immediately opposite NATO forces: these were the Group of Soviet Forces German; the Northern Group of Forces in Poland; the Central Group of Forces situation in Czechoslovakia and Southern Group of Forces in Hungary. Each of these army-sized formation included two ballistic missile brigades.[[49]](#endnote-47) One was equipped with the R-17 Elbrus (SS-1b SCUD-B) and the other with the TR-1 Temp (SS-12 SCALEBOARD). Both were mobile systems. Each brigade included a communications company, a mechanized infantry company in BMP vehicles, a logistics company. The missile launching units themselves were called the ‘Mobile Rocket Technical Base’ (PRTB). Nuclear ammunition was controlled by a higher-level multi-service organization called the 12th Main Directorate of the Ministry of Defence (12th *Glavnoye Upravleniye Ministerstvo Oborony* or 12th GU MO), which had a detachments assigned to each brigade that consisted of soldiers, sailors, and airmen.[[50]](#endnote-48)

 Once such missile brigade was the 175th Guards Missile Brigade which was subordinated to the Group of Soviet Forces Germany. It consisted of three missile battalions, each controlling twelve Elbrus (SCUD-B) missiles carried on mobile transporter erector launchers. One of these units, the 11649th PRTB, was stationed at Torgau, East Germany on the site of a former Nazi era underground munitions factory. The 11649th PRTB had two divisions of six launchers each, plus the 12th GU MO warhead detachments which controlled the warhead storage area where the “products” were kept. Its sister unit the 57845th PRTB were in Nizhny Oschatz and another was located at Borna near Leipzig. There was one storage area per sub-unit.[[51]](#endnote-49)

 There were 20 missiles for the 11649th PRTB. The 12th GU MO controlled forty nuclear warhead. Approximately half of the warheads were loaded and “alarmed” in Ural trucks for quick deployment. The “products” came in a number of varieties. The RA-104 yielded up to 50 kt, the RA-104-1 was around 100 kt, and the 8F44 and RA-104-2 were thermonuclear weapons, with yields of 300 kt. One safety issue was that some warhead types, including the 8F44, were “undermined” if they were dropped.[[52]](#endnote-50)

 For deception purposes the local population were told, when asked, that the 11649th PRTB was a “cannon” (tubed artillery) unit and not a missile unit. Members of the American Military Liaison Mission in Potsdam observed the Soviet unit from time to time. In an interesting twist, members of the 11649th PRTB became aware after the Cold War that at some point the West German Bundesnachristendienst (BND) compromised a Soviet communications officer based at GSFG headquarters at Grossen Wunsdorf. This officer provided codes, ciphers, and access to the GSFG early warning and alerting systems involving the missile units. That alerting system was straightforward. A “black bag” was kept by the Supreme Commander of Group of Soviet Forces Germany and another by the Chief of the General Staff. Both had to agree so that missiles could be released. There appears to have been no civilian leadership “in the loop” as it were.[[53]](#endnote-51)

 Naturally, the timing problems of emergency deployment, pre-emption, and control concerned the members of 11649th PRTB. These missilemen believed that had less than 40 minutes to get out of the camps near Torgau before they were hit by conventional forces or by Pershings. The special communications unit at Torgau kept an intelligence watch on the “56 Artillery Missile Engineering Brigade,” the Pershing II unit in West Germany, and that data was fed right to the brigade headquarters. The implications are that the brigade commander could at his discretion, deploy his forces unilaterally if there was a threat, but he could not launch on his own. They were exceptionally concerned about the less than ten minute flight time from the Pershing deployment sites to Torgau. Indeed, another missile unit, the 902nd, was established in depth in Hungary in 1979 to ensure that there were backup SCUDs and SCALEBOARDs.[[54]](#endnote-52)

 When queried after the Cold War, a former planning officer explained to the 11649th PRTB alumni that in the event of war, only the missile brigade in Czechoslovakia would be released to “shoot and clear targets” with 131 nuclear “charges” in the first two hours. All other units were to disperse and prepare for future operations. Options existed to use all three brigades at once, if necessary, with nearly 400 warheads.[[55]](#endnote-53)

 The 11649th PRTB alumni recall several alerts during the 1980s. The first was the night Brezhnev died in 1982. An alert was received in some fashion by the battalion commander, who deployed the 11649th PRTB without contacting his high headquarters. The unit cleared its lines in under 40 minutes and the crews were convinced it was a real alert. Anotheer ocurred with the death of Chernenko.[[56]](#endnote-54)

 Another occurred in the first four months of 1984. In that case fully fuelled and “docked” rockets, that is, warheads attached to airframes, deployed to some location far away from Torgau. There are, unfortunately, no further details. A third deployment took place sometime in 1986. Apparently on one of these occasions the PRTB in Oschatz, “as a result of improper command” deployed “combat supply missiles “to the launcher unit and it appears as though there were attempts to load the missiles with fuel. When command was re-exerted, the missiles and warheads were “shelved” (which likely means that they were returned to their storage areas).[[57]](#endnote-55)

 During at least one emergency situation, the crews arrived to find that the supposedly combat ready missiles were stacked “on the ground as firewood [with] stabilizers in different directions.” One logistician climbed on the stack and “kicked one- ‘Take this….and this!’ and slammed the heel of the stabilizer. We were stunned!”[[58]](#endnote-56) In another case some of the 32 nuts used to secure the back plate of a warhead were found to be missing: three years after they were last inspected.[[59]](#endnote-57) Of note, the 11649th PRTB personnel do not recall an alert occurring in November 1983. Any unusual alerting activities appeared to have occurred in 1982, 1984, and 1986.

 The Soviet SS-20 force stationed further back to the east was also prone to accidents. A.V. Veselovsky of the All-Russian Scientific Research Institute for Experimental Physics (VNIIEF) described a number of incidents involving these systems. One of these involved “an unplanned impact [in] Kazakhstan [of a] Pioneer.” With great rapidity and secrecy a special recovery team deployed to the site. A tent was rigged around the warheads, which were buried in a crater, and the team had to report in by phone line to the Defence Ministry and to the Office of the Chief of Strategic Rocket Forces as they progressed through the disarmament process. Another event also involved an SS-20 Pioneer some time in the 1980s. After the warheads were mounted on the airframe and the seal applied, the erector was tested. The vehicle leaned over because one of the four jacks was not set properly and the missile itself fell over while attached to the launcher. The warhead package detached itself and fell to earth. On impact, the warhead cluster broke open and some of the components started emitting radioactive materials. A team was brought in to safe the warheads.[[60]](#endnote-58)

Bear’s Roar: Bomber Operations

 The Soviet manned bomber force bore little resemblance to its American counterpart, the Strategic Air Command, in terms of concept of operations or its aircraft. Consequently, its behavior during 1984-1986 needs to be understood on its own terms and not through a mirror-image. For example, there was substantial debate in American intelligence circles over the modus operandi of ‘Long Range Aviation.’ It was generally considered a poor cousin to the more prestigious Strategic Rocket Forces. What Long Range Aviation’s bombers were capable of doing was the subject of intense debate in the 1970s, particularly with the deployment of the TU-22M BACKFIRE, which did not fit neatly into any order of battle intelligence pigeonhole. Was it a strategic system or an intermediate range system? The numbers of bombers capable of reaching North American targets was not considered overly significant: between 100 and 150 was the usual estimate, dating from the 1960s. There were an estimated 1500 or so ‘intermediate range’ aircraft capable of targeting Western Europe and the Middle East, or NATO naval forces.

 In terms of roles, a significant proportion of the bomber force was dedicated to the carriage of large nuclear-tipped air-to-surface missiles. Their targets were generally the US Navy aircraft carrier battle groups, whose existence drove the Soviet military planners to high and distorted levels of paranoia from the 1950s onwards. Another proportion of the bomber force started off as gravity bomb carriers, but then were modified to carry stand-off missiles to extend their range against ground targets.

 In terms of operational behavior, Soviet bombers did not maintain 1960s SAC-like airborne alert per se. The aircraft were stationed at a number of main bases with varying alert levels. Crewmembers recalled that these levels included: at home in phone contact with base; duty at the airbase; alert duty with the aircraft with ‘unsuspended weapons’; alert duty with aircraft and movement of the aircraft to dispersal airfields. Nuclear weapon alert states were described colloquially as “on the shelf”; “in the pit” or “unsuspended”; and “suspended.”[[61]](#endnote-59)

 In ‘peacetime,’ TU-95RT long-range reconnaissance aircraft or the 32nd ODRAP (‘separate reconnaissance regiment’) roamed the Atlantic and Pacific keeping track, along with other Soviet assets, of American aircraft carriers. A portion of bombers loaded with air-to-surface missiles were on some level of ground alert at any one time to destroy the aircraft carriers with nuclear weapons.[[62]](#endnote-60) Three squadrons of TU-95K, carrying the Kh-20 (KANGAROO) and later the Kh-22 (KITCHEN) nuclear cruise missiles were reserved for attacks against North American targets in conjunction with the Strategic Missile Forces. The shorter-ranged TU-16 and TU-22 bombers were allocated to targets in Western Europe, the Mediterranean, and the Middle East.

 Throughout the Cold War Soviet Long Range Aviation and Naval Aviation bombers were involved in mass operations intended to interfere with NATO exercises and to intimidate the NORAD air defence system. For example, one Russian account depicts the deployment of three regiments (60 reconnaissance and missile-carrying bomber aircraft) against two US Navy carrier groups involved in Exercise TEAM WORK 64, conducted in international waters near Iceland.[[63]](#endnote-61) Similar operations of the same scale were mounted against North American air defences. As far as can be determined, operations of this magnitude peaked in the 1960s and dropped off by the late 1970s. COLD SHAFT interception missions by NORAD’s Canadian fighters regularly tracked pairs of TU-95RT’s from 1968 to 1983 as they skirted and sometimes penetrated the air defense identification zones.[[64]](#endnote-62)

 This state of affairs changed dramatically by 1984. A decade before, the Soviet air forces wanted to match the planned American B-1 bomber with a similar design. Closely following American cruise missile developments, it was intended that this new aircraft, the TU-160 (BLACKJACK), would be equipped with a Soviet-built equivalent to the ALCM or Tomahawk cruise missile. TU-160 development lagged. In 1982 the decision was made to build a new variant of the TU-95 BEAR and equip it with the Kh-55 nuclear cruise missile as this system’s development outstripped that of the TU-160. As a result the TU-96MS (BEAR H) was conceptualized and then tested by early 1983. This aircraft was equipped to carry six 1000 mile-range Kh-55 missiles in an internal rotary launcher. Further plans were made for external carriage of four to six more Kh-55’s. In essence, a single aircraft could target between six and twelve targets while remaining far outside North American airspace. Thus a single regiment of twenty TU-95MS could threaten between 120 and 240 targets along the North American east coast (or the Pacific coast) with 200 kt yield warheads. Some of the crews even colloquially referred to their planes as “submarines” and “SSBN’s.”

 The impending Pershing II deployment led to an acceleration of the TU-95MS/Kh-55 program in early 1983. There were substantial problems with the navigational system in its interface with the missiles as well as the rotary launcher. After a concerted effort from industry and the air force the first tactical launches of the Kh-55 missiles were conducted from the TU-95MS planes in April 1983. Training commenced on a crash basis in Vorkuta range “under strictest secrecy” and at times it had to be curtailed because of “NATO reconnaissance aircraft and US reconnaissance satellites.” The first missile went wildly off course (one observer noted that “London was lucky”….) but then there was a succession of successful tactical tests against a mock air defence system.[[65]](#endnote-63)

 The Pershing II deployment altered the plans for the TU-95MS squadrons. In March 1984, the first “maximum duration” flights were undertaken by TU-95MS’s over the Arctic beyond the North Pole. These flights lasted sixteen hours and were probably unarmed.[[66]](#endnote-64) They could not have failed to have been observed by Western resources and given that they had a different flight path from the TU-95RT reconnaissance flights down the east coast of North America, would have been of some interest to NORAD.

 The success of these flights led to a complex command post exercise conducted in April 1984. This involved “the practical application of the Kh-55.” While the exercise was in play, a pair of armed TU-95MS (manned by “full time combat crews”) flew over the Arctic and achieved a “start up” (launch) of the Kh-55 missiles under operational conditions against a range in the central Soviet Union. This confirmed that the combination worked.[[67]](#endnote-65)

 As a result, the crews of the two TU-95MS squadrons, a squadron equipped with older TU-95K and TU-95M missile carriers, and a Mya-4 tanker squadron received new instructions. By the end of the year the squadrons were to plan for and start “patrolling in remote geographical areas.” Crewmembers recall that the patrols were “explicitly” for “political mission with the aim of demonstration of muscles” and note that they were in response to the Pershing II deployment as well as the fact that there were problems with maintaining the ballistic missile submarine force on station in the Atlantic (see below).[[68]](#endnote-66)

 What was the nature of these flights and how did they differ from previous Soviet operations? The “special assignments” flights were conducted by pairs of TU-95MS launched from their bases at Semipalatinsk, Uzyn, Mozdok and Ukrania and sustained en route by aerial refueling zones over the Barents Sea and the Bearing Sea. There were four patrol boxes, one for each pair: one north of Newfoundland; a second north of the Canadian Archipelago; a third along the east coast of Alaska; and a fourth south along the Aleutian island chain. Other aircraft, the more shorter ranged TU-22Ms operating from bases near Vladivostok, flew in holding areas bracketing Japan and another off Hawaii. The TU-95MS flights lasted between 16 and 20 hours. As to the frequency of these special assignment flights, there were two shifts per week per crew.[[69]](#endnote-67) The impression left by the participants memoirs was that they were mounted regularly from 1984 to 1986 or 1987. They were all geared for the conduct of nuclear strikes. On one occasion in September 1985 the entire TU-95MS force of three squadrons was ‘flushed’ to several dispersal airfields on “duty status of preparedness number one” where they re-launched and conducted aerial refueling prior to deploying to the patrol boxes.

 For all intents and purposes, the actions of the TU-95MS force consisted of some form of airborne alert. The crews compared themselves to SAC in the 1960s and discussed using stimulants for the long-haul flights: “Once in the 1960s Americans coped, why not Soviet pilots not cope 20 years later?” They noted that the best way to save the “YES” (strategic bomber force) was to “be on duty in the air” like the Americans in the 1960s. They bragged that the deployments “immeasurably increased strike capabilities. Being highly mobile carriers [of] nuclear long-range [missiles] these aircraft were the most real threat to the opponent.”[[70]](#endnote-68)

 It is highly probable that these flights carried nuclear weapons. At this point there was no conventional version of the Kh-55 cruise missile. The idea of maintaining eight aircraft off the coasts of North America on a sustained basis without a combat load does not fit with the political circumstances nor the effort involved in doing so, though we should not ignore the possibility that weapons were kept in their storage facilities and would be uploaded to departing aircraft only at heightened levels of alert. The resounding silence by the former crewmembers on the issue should also be noted. What we do know is that after the Chernobyl event in 1986 that there was a massive re-examination of nuclear safety all over the Soviet Union and that subsequent to this movements of nuclear weapons by air in ‘peacetime’ were banned until safety tests, conducted in 1987, could be concluded.[[71]](#endnote-69) There remains another possibility and that is the some of the Kh-55 missiles were armed with biological weapons. The extremely secretive and illegal Soviet efforts in the field allegedly yielded a version of the Kh-55 that was equipped to dispense such agents.[[72]](#endnote-70)

 While the TU-95MS squadrons were conducting “demonstrations of muscles” off North America, the crews of the TU-22M (BACKFIRE) force were being pressed to greater and greater efforts by their superiors. The TU-22M force was tasked with targeting US Navy carrier task groups with nuclear missiles and like their forefathers trained hard for this task. Between 1984 and 1985 two TU-22M crashes occurred. Both are believed to have been carrying nuclear weapons (“full combat gear” is the Russian euphemism) on training runs.[[73]](#endnote-71) Both the reconnaissance units and the missile carrying units also sustained casualties: fourteen other bombers were involved in fatal accidents between 1984 and 1987. It is unclear how many involved nuclear weapons but at least eight of these aircraft could have been carrying them.[[74]](#endnote-72) For the comparative purposes the Soviet Union lost 16 strategic bomber aircraft in that three-year period compared to seven from 1980 to 1983, 11 from 1975 to 1980, seven from 1970 to 1975, and 13 from 1965 to 1970. In other words in the three year period after Pershing II was deployed the Soviets lost more nuclear-capable bomber aircraft in catastrophic accidents than in any five-year period going back twenty years.

 Finally, there were a series of serious accidents at Soviet bomber bases themselves. In May 1984 a fire at Long Range Aviation Base at Bobrysk in what is now Belarus may have come close to the nuclear weapons storage area or nuclear-capable aircraft and “put the country on the verge of a terrible tragedy.” Russian environmentalists at Ecoethics note that “there were not less that six such catastrophes in Soviet military ‘objects’ [bases] between 1984-1990.”[[75]](#endnote-73) There is unfortunately no available details on these accidents.

Glowing in the Dark: The Submarine Force and its Discontents

 The behavior of the Soviet submarine forces from 1983 to 1986 suggests that there was increased pressure to increase sortie rates and long-range deployments. That pressure appears to have generated stresses within the forces which produced an almost unprecedented series of accidents involving nuclear weapon-carrying submarines, at least in comparison to other periods during the Cold War. There were ten major accidents during this time, or 3.3 per year, compared to an average of 1.4 per year between 1955 and 1982. The break down of submarine type and its activity is also revealing: the bulk of the accidents in 1983-86 involved forward-deployed or deploying cruise and ballistic missile-launching submarines. Incidents prior to this time frame predominantly feature conventional and nuclear attack submarines.[[76]](#endnote-74)

 For our purposes here there were three submarine types, each geared to a specific mission. The ballistic missile submarines are part of strategic nuclear war forces with targets in North America. For example, in the late 1960s and early 1970s GOLF-II class missile submarines regularly ‘visited’ Cuba on a rotational, temporary basis.[[77]](#endnote-75) By the mid-1970s and into the early 1980s four YANKEE-class ballistic missile submarines with 16 missiles each were stationed off the coasts of North America: a pair in the Pacific and another in the Atlantic off Bermuda (these were the so-called ‘YANKEE Boxes’). One DELTA-class submarine with 16 missiles equipped with MIRV’d warheads was stationed in either the Barents or Greenland Sea.[[78]](#endnote-76)

 The cruise missile submarines were believed to be optimized to attack aircraft carriers, while attack submarines were designed to protect ballistic missile submarines and prevent any American cruise-missile carrying submarine or surface ship from getting within range of targets in the Soviet Union. The main cruise missile submarines were the ECHO I and II class and the CHARLIE class. Doctrinally, these submarines were employed as part of a combined missile assault force coordinated with air-launched missiles from long-range Naval Aviation bombers to overwhelm an aircraft carrier’s defences and destroy it with nuclear warheads.[[79]](#endnote-77)

 In January 1984 the Soviet defence ministry publicly announced that two DELTA-class missile submarines would deploy off North America. NATO naval forces tracked the movement through the Greenland-Iceland-United Kingdom Gap and saw the DELTAs augment the YANKEE-class submarines already on patrol in the boxes. This was a highly unusual development. The missiles aboard the DELTA could strike North America from what amounted to protected waters north or Norway. This was clearly a deliberate signal by the Soviet Union. Then an ECHO II cruise missile submarine unexpectedly appeared off Bermuda. One possibility was that the ECHO II was deployed to ward off any anti-submarine surface forces attempting to track the four DELTA and YANKEE submarines. The whole affair was obvious signaling but was downplayed by the American administration as ‘routine’.[[80]](#endnote-78)

 It was not routine at all as the forces remained in place for some time. Maintaining five submarines on station involved relief rotation which meant that a further five submarines of the same type had to be readied and deployed to replace them while the others returned and refitted. Soviet fleet readiness was, on a good day, nowhere near the same level as the US Navy, which generated 50% of its strategic missile submarines on alert status at any one time. Indeed, Soviet plans existed to use ballistic missile submarines as “floating batteries” in port or in protected bastions in the Norwegian Sea, not far away from repair facilities in the fiords of the Kola Peninsula.[[81]](#endnote-79)

 At the same time Soviet nuclear attack submarines displayed an increased aggressiveness in 1984. The historical problem of incidents at sea involving the collision, deliberate or otherwise, of American and Soviet submarines during intelligence collection missions was recognized and addressed by a 1972 INCSEA treaty.[[82]](#endnote-80) Despite this, efforts continued on both sides though the frequency of collision appeared to have dropped off by the early 1980s: there was one collision between a VICTOR III attack submarine and an American nuclear submarine in 1981 as opposed to multiple incidents in the early 1970s.

 In March 1984, a VICTOR I tracking the aircraft carrier USS Kitty Hawk off Japan surfaced in front of the American ship and was badly damaged: enough that it had to be towed back to its home port. Six months later a VICTOR I collided with a tanker near the naval base Gibraltar: it was using the civilian vessel as an acoustical shadow during an intelligence gathering mission. In all of these occasions there was a risk of a nuclear accident. The VICTOR-class is nuclear propelled and routinely carried nuclear torpedoes and nuclear anti-ship missiles.[[83]](#endnote-81)

 On 13 May 1984, there was a massive explosion at the submarine base at Severomorsk. Warehouses containing submarine-launched ballistic missiles and at least five other nuclear-capable systems blew up killing hundreds of people. It took five days to stop the fires. It is not clear if there was any radioactive contamination or if nuclear warheads or reactors were compromised: one source suggests that the missile bodies blew up but that the warheads were stored in a separate facility code-named Sputnik-51 which was remote from the base. One source suggests that “The Northern Fleet lost its fighting efficiency for several years.”[[84]](#endnote-82)

 There were two serious accidents involved ECHO II-class cruise missile submarines. In June 1984 an ECHO II carrying eight nuclear-tipped cruise missiles and two to four nuclear torpedoes caught fire while transiting back to its base in the Kola Peninsula, killing 14 crewmen. The fire was extinguished before it could melt the reactor compartment. In August 1985 an ECHO II loaded with eight nuclear cruise missile undergoing reactor startup before patrol blew up at Chazhma, Vladivostok. The explosion blew the lid off the reactor, killing 10 people. A nuclear attack submarine of the NOVEMBER-class moored alongside (also loaded with nuclear torpedoes) was so badly damaged by the blast that it had to be refloated and scrapped. 290 people were injured and the extent of radioactive contamination remains in dispute today.[[85]](#endnote-83)

 Then there is the sad tale of K-439, a CHARLIE-class cruise missile submarine equipped with eight SS-N-7 nuclear missiles. K-439 was forced to deploy “at any cost” due to the ‘operational circumstances’. A faulty vent compromised the integrity of the sub, which sank off Petropavlosk during a dive test. Fourteen died but over 100 escaped via the torpedo tubes. K-439 was salvaged and taken to port. On 13 September 1985 K-439 sank at her moorings, was raised again, and finally scrapped.[[86]](#endnote-84)

 The three most serious incidents involved the ballistic missile submarines. At some point in late 1983 a DELTA III ballistic missile submarine collided with another submarine or ship: it was carrying sixteen missiles with three MIRV’s each. On 11 September 1986 a DELTA II launched an SS-N-8 missile from its base near Severomorsk in the Kola Peninsula, missed, and hit China. There apparently was no nuclear warhead aboard.[[87]](#endnote-85) Finally there is the well-documented sinking of the YANKEE off Bermuda in October 1986 along with her sixteen SS-N-8 equipped with 34 nuclear warheads.[[88]](#endnote-86) There were allegations by the Soviet Union at the time that the loss of K-219 was due to an incident at sea with a US Navy Sturgeon-class attack submarine, but interviews conducted with her captain reveal that “There was no collision….I do not tell the story the way my government wants me to tell it. I did not collide with an American sub.” The reality was that K-219 experienced a missile explosion and it was not possible to recover the submarine. On of the K-219’s officers explained in an interview that

cruise training had never been so chaotic….the Soviet Union’s response to the American deployment of Pershing ICBM’s [sic]…was to build up the forces of the VMF [navy] of the USSR and to extend [ballistic missile submarine] patrolling up to the immediate shore of the United States. Thus the number of deterrent patrols of the [ballistic missile submarines] rose to two or three each year. The ships had reached the limits of their capabilities.[[89]](#endnote-87)

 Repair facilities were overwhelmed, there was pressure to send partially-trained crews and there was a lack of cohesiveness and as a result safety suffered with tragic consequences.[[90]](#endnote-88)

The Capitalist Running Dog That Didn’t Bark

 As a quote from the 1983 film “Wargames” put it, the best move for the United States was not to play. It remains unclear how much definition the American intelligence apparatus had on the Soviet missile, bomber, and submarine accidents. Certainly it did on the more visible ones like the YANKEE off Bermuda. What did become clear after examining all of the opposing activity was that the “Soviet Union has a launch-on-warning capability which the Pershing II puts in jeopardy.” The Soviets strategic “leverage” was based its huge missile force: “6000 ICBM warheads to our 2000 and all of ours are vulnerable,” as Robert McFarlane noted. Given that this was the case, Reagan mused in the NSC “whether or not deterrence would be enhanced if we made it clear to the Soviet Union that we might launch-under-attack.” Did the United States have the warning capacity? He was informed that the main vulnerability was to submarine launched missiles and that Soviet “submarines are very close to our shores and would make it very difficult to execute.” The Chairman of the Joint Chief of Staff concurred as did others: “We don’t have the right kinds of capabilities for such a policy. We don’t have the ability to distinguish between attacks on military facilities and attacks on our cities.”[[91]](#endnote-89)

 This was, in fact, high-level recognition that an extremely dangerous state of affairs existed. The Soviet launch-on-warning posture, as opposed to launch-under-attack, meant that any collection of indicators from their early warning system that led them to believe an American nuclear attack was imminent as opposed to underway would lead them to fire their strategic missile systems. The possibility of one or more incidents or situations involving forward deployed Soviet strategic nuclear forces described earlier could have resulted in an escalatory situation (or as Herman Kahn put it, ‘accidental’ accidents versus ‘non-accidental’ accidents) was arguably more dangerous than the comparatively limited nuclear flourish conducted by Frontal Aviation units during ABLE ARCHER 83 in November 1983.

 There are no outward indications in the available primary sources that suggest that this was specifically recognized by the Reagan NSC. However, December 1984 National Security Council deliberations indicate that there was a real opportunity to get the Soviets to the table in Geneva and start pushing for dramatic arms control initiatives. The NSC members were almost unanimous in their belief that all of the American programs could be used to leverage serious reductions in “the levels of offensive arms,” essentially the SS-18 and SS-20 systems. Reagan expressed concern that “everything they have says they are looking at a first-strike because it is they, not we, who have built up both offensive and defensive systems.” He wanted to re-emphasize defense: Strategic Defense Initiative, air defense, civil defense. He didn’t believe that the Soviets “had in mind Pearl Harbor but rather expected that they believe that they would be so powerful that they could coerce us into achieving their objectives peacefully.”[[92]](#endnote-90)

 CIA analysis concluded that the Soviets had by mid-1985 accepted the fact that the Pershing II’s were not going to be withdrawn and dropped demands for their withdrawal. Confronted with a new array of programs that they believed interfered with their larger strategic objectives, the Soviets ramped up public diplomacy and active measures to a fever pitch.[[93]](#endnote-91) The continued Soviet forward deployments in 1985 should be seen as backstopping those efforts.

 With the death of Constantin Chernenko in March 1985 and the accession of Mikhail Gorbachev, opportunities to move forward on the larger arms control agendas, of which the INF was one, presented itself. The psychological climate was complicated by the fact that 1986 was the Soviet Union’s hardest year in the Afghanistan war. It was, however, the Chernobyl disaster that initiated a complete overhaul of Soviet nuclear safety in 1986-87 and with it an end to aircraft flights carrying nuclear weapons.

 In a NSC meeting in 1987 Reagan expressed his belief that

we can’t win a nuclear war and we can’t fight one. The Soviets don’t want to win by war but by threat of war. They want to issue ultimatums which we have to give in. If we could just talk about the basic steps we need to take to break the log jam and avoid the possibility of war. I mean, think about it. Where would the survivors of the war live? Major areas of the world would be uninhabitable. We need to keep in mind that that’s what we’re all about. We are bringing together steps to bring us closer to the recognition that we need to do away with nuclear weapons.[[94]](#endnote-92)

 In time the INF treaty talks were underway which led to the elimination of the SS-20 and Pershing II forces.

 Recent works dealing with American nuclear accidents tend to be one sided and emphasize “Dr. Strangelove” like behavior in the 1950s. As we have seen it was the Soviets who engaged in reckless and lethal behaviors, while the United States under the Reagan Administration exercised what amounted to ‘courageous restraint’ even with the specter of nuclear accidents among Soviet forward-deployed nuclear systems on the borders of North American airspace and its ocean shores. This behavior is at odds with the generally accepted public view that the Reagan White House was engaging in needlessly provocative and aggressive behavior. There was, of course, constant observation of military activities but there are no indications that American or allied forces mounted any special operations to mirror or match these Soviet deployments, or to provoke them in any way during the 1984 to 1987 period, particularly during and after Exercise ABLE ARCHER 83.

 That said, the Reagan administration did not ignore the threat and here lies a clue for those seeking to develop responses to the Putin regime and its behavior. Reagan’s resolve to maintain courageous restraint was firmly based of demonstrated capabilities, not ones that were moribund. Those capabilities included an evolving force structure led by motivated personnel that was capable of backing up the policy if necessary, not one that was on the verge of rusting out. The other lesson we may take away from the post-ABLE ARCHER experience, is that rust-out (and after the revelations of the US Air Force nuclear force cheating scandals we can define that broadly) will increase the probability of accidents. The reckless activities undertaken by the Putin regime are in some ways reminiscent of the 1980s and this should be cause for serious concern.

1. . Interview of Colonel General Matvei Burlakov by Marina Kalashnikova, 28 March 2005. The full interview appears on the Southern Group of Forces alumni website: <http://vnr-su-army.narod.ru/interviu.html>. Excerpts from it received fairly widespread dissemination: see for example, Igor Hodakov, “Betrayed Army” at the VPK News chain, <http://vpk-news.ru/articles/14979> [↑](#endnote-ref--1)
2. . On of the earlier discussions was John Prados who published “The War Scare of 1983” in Military History Quarterly Spring 1997. Lately the National Security Archive has trolled away with FOIA actions to unearth what it can. See <http://www2.gwu.edu/~nsarchiv/nukevault/ablearcher/>. The author had access to ABLE ARCHER 83 materials during the course of his work as the Canadian Army’s Cold War NATO historian in the early 1990s but it was not possible to contextualize them into any larger international framework at the time. See Sean M. Maloney, War Without Battles: Canada’s NATO Brigade in Germany 1951-1993 (Toronto: McGraw Hill Ryerson, 1997). See also Nate Jones, “Countdown to Declassification: Finding Answers to a 1983 War Scare,” Bulletin of the Atomic Scientists 69-6 pp. 47-57; Vojtech Mastny’s “How Able was Able Archer? Nuclear Trigger and Intelligence in Perspective,” Journal of Cold War History Vol 11 No. 1 Winter 2009 pp. 108-123 sums up the nature and current status of the debate. [↑](#endnote-ref-0)
3. . The first real significant public exposure on Operation RYAN appeared with Christopher Andrew and Oleg Gordievsky’s, KGB: The Inside Story (London: Hodder and Stoughtan, 1990) and Comrade Kryuchkov’s Instructions: Top Secret Files on KGB Foreign Operations, 1975-1985 (Stanford: Stanford University Press, 1991). [↑](#endnote-ref-1)
4. . The CIA has not released this documentation but has released under FOIA the titles of the reports. For example, there are reports on SS-20 field training areas, warhead mating, resupply capabilities, solid motor production, and on command and control communications systems. [↑](#endnote-ref-2)
5. . Melvin L. Stone and Gerald P. Banner, “Radars for the Detection and Tracking of Ballistic Missiles, Satellites, and Planes,” Lincoln Laboratory Journal Vol. 12 no. 2 2000 pp. 217-243; James Bamford, The Puzzle Palace (New York: Penguin Books, 1982) pp. 256-258; SS-20 data from Podvig. [↑](#endnote-ref-3)
6. . Pavel Podvig (ed) Russian Strategic Nuclear Forces (Cambridge: MIT Press, 2001) pp. 224-226. [↑](#endnote-ref-4)
7. . Sean M. Maloney Learning to Love the Bomb: Canada’s Cold War Strategy and Nuclear Weapons, 1951-1970 (Dulles: Potomac Books, 2007) Ch. 13. [↑](#endnote-ref-5)
8. . FOIA, (13 Sep 71) National Security Decision Memorandum 132, “Modification of SSBN Commitment to NATO”; (4 May 76) National Security Decision Memorandum 328 “Modification of SSBN Commitments to NATO.” [↑](#endnote-ref-6)
9. . FOIA CIA (1 Mar 75) briefing, “Strategic Forces.” [↑](#endnote-ref-7)
10. . Even James Cant admits that we still don’t know the full story but his “The SS-20 Missile: Why Were You Pointed at Me?” is a good start in Antony Beevor et al (eds) Russia: War, Peace, and Diplomacy (Lodon: Weidenfield and Nicholson, 2005) pp. 240-253. [↑](#endnote-ref-8)
11. . Jeffrey Herf, War by Other Means: Soviet Power, West German Resistance, and the Battle of the Euromissiles (New York: The Free Press, 1991) pp. 60-62. [↑](#endnote-ref-9)
12. . FOIA NSC (28 Mar 80) “Amendment to Nuclear Weapons Deployments (PD/NSC-51).” Even though many of the 1000 warheads were for aging Honest John tactical systems, it was not necessarily a good bargaining move to commit without a replacement and the Carter administration had just shot itself in the foot by not deploying ERW warheads for Lance, which replaced the Honest John system. [↑](#endnote-ref-10)
13. . FOIA CIA (16 May 79) “National Intelligence Daily.” [↑](#endnote-ref-11)
14. . FOIA, Martin Marietta Aerospace Orlando Division, “Pershing Ia: System Description,” June 1974. [↑](#endnote-ref-12)
15. . William Yengst, Lightening Bolts: First Manouevring Reentry Vehicles (Mustang, OK: Tate Publishing, 2010) pp. 177-188. Yengst was an engineer who worked alongside the German PAPERCLIP missile scientists in the 1950s, and later with DARPA and the Defense Threat Reduction Agency on MARV systems, including Pershing II. [↑](#endnote-ref-13)
16. . Ibid. [↑](#endnote-ref-14)
17. . Ibid., pp. 195-196. [↑](#endnote-ref-15)
18. . Ibid. pp. 199-203. [↑](#endnote-ref-16)
19. . Peter Grier, “The Short, Happy Life of the Glick’em,” Air Force Magazine July 2002 pp. 70-74; see also Association of Air Force Missileers, “GLCM-Ground Launched Cruise Missile, Part I,” AAFM Newsletter vol. 12 no. 4 December 1004 pp. 2-8. [↑](#endnote-ref-17)
20. . See endnote 34. [↑](#endnote-ref-18)
21. . Dale Van Atta is better known as the biographer of Melvin Laird, Secretary of Defense under Nixon. The original Dale Van Atta article, was republished in German “Spetsnaz, die geheime Kampftruppe der Sowjets,” also appeared in the English edition of The Best of Reader’s Digest. The article has long legs and now is distributed by a group called “Christian Assemblies International” at <http://www.cai.org/bible-studies/spetsnaz-secret-soviet-combat-troops>. Incidentally, Peter Canning in American Dreamers: The Wallaces and Reader’s Digest (New York: Simon and Shuster, 1996) describes how Reader’s Digest was used by the CIA as an information operations conduit during the Cold War. It remains a possibility that Van Atta’s physical depiction of the mock Pershing II training facilities deep in the Soviet Union is completly coincidental to this fact. [↑](#endnote-ref-19)
22. . FOIA (30 Apr 81) NSC meeting, “Theater Nuclear Forces: Negotiations Timing.” [↑](#endnote-ref-20)
23. . FOIA CIA (10 Nov 81) memo for DCI and DDCI, “National Security Council Meeting on TNF scheduled for 12 November at 1600 hours.” [↑](#endnote-ref-21)
24. . FOIA NSC “National Security Decision Directive Number 15: Theater Nuclear Forces (Intrmediate-Range Nuclear Forces).” [↑](#endnote-ref-22)
25. . See endnote 34. [↑](#endnote-ref-23)
26. . FOIA NSC (13 Jan 83) minutes of a National Security Planning Group meeting. [↑](#endnote-ref-24)
27. . FOIA CIA (Feb 1983) “Soviet Strategy to Derail US INF Deployment.” [↑](#endnote-ref-25)
28. . Ibid. [↑](#endnote-ref-26)
29. . Ibid. [↑](#endnote-ref-27)
30. . See Markus Wolf, Man Without a Face: The Autobiography of Communism’s Greatest Spymaster (New York: Random House, 1997) pp. 244-247. One theory was that Gert Bastian apparently murdered Petra Kelly in 1994 before commiting suicide, fearing exposure as a Stasi dupe. [↑](#endnote-ref-28)
31. . FOIA CIA (Feb 1983) “Soviet Strategy to Derail US INF Deployment.” [↑](#endnote-ref-29)
32. . Ibid. [↑](#endnote-ref-30)
33. . FOIA CIA (9 Aug 83) “Andropov’s Approach to Key US-Soviet Issues.” [↑](#endnote-ref-31)
34. . FOIA NSC (21 Sep 83) National Security Decision Directive No. 104. [↑](#endnote-ref-32)
35. . Herf, War By Other Means p. 181 [↑](#endnote-ref-33)
36. . FOIA CIA (June 1983) “Soviet Planning for Front Nuclear Operations in Central Europe.” [↑](#endnote-ref-34)
37. . Ibid. [↑](#endnote-ref-35)
38. . Freedom of Information Access request [hereafter FOIA] CIA (18 May 84) “Implications of Recent Soviet Military-Political Activity.” [↑](#endnote-ref-36)
39. . FOIA CIA Ben B. Fischer, “A Cold War Conundrum: The 1983 Soviet War Scare.” [↑](#endnote-ref-37)
40. . FOIA CIA (18 May 84) Special National Intelligence Estimate, “Implications of Recent Soviet Military-Political Activities.” [↑](#endnote-ref-38)
41. . FOIA CIA (31 Jan 79) NIE 11-14-79 “Warsaw Pact Forces Opposite NATO.” [↑](#endnote-ref-39)
42. . The information on the storage and loading process is derived from commemorative websites for the former Soviet personnel based at Rechlin-Larz and Grossenhain airfields at [www.Fighter-Control.co.uk](http://www.Fighter-Control.co.uk) and [www.grhn105.eu](http://www.grhn105.eu) ; a Russian caving group that specializes in exploring underground bunker systems at [www.caves.ru](http://www.caves.ru) (see in particular the “Industrial Area” thread); and the exceptional work done by aviation historian Stefen Buttner on exploring and documenting nuclear weapons storage in the former Warsaw Pact, re-posted along with pictures of the facilities at [www.16va.be](http://www.16va.be) [↑](#endnote-ref-40)
43. . FOIA CIA (23 Mar 84) Directorate of Intelligence, “Soviet Interest in Arms Control Negotiations in 1984.” [↑](#endnote-ref-41)
44. . FOIA NSC, “Minutes of the National Security Planning Group Meeting March 27, 1984.” [↑](#endnote-ref-42)
45. . FOIA CIA (18 May 84) Special National Intelligence Estimate, “Implications of Recent Soviet Military-Political Activities.” [↑](#endnote-ref-43)
46. . Ibid. [↑](#endnote-ref-44)
47. . Ibid. [↑](#endnote-ref-45)
48. . This section is based on data contained in a ‘comrades’ website forum used by former members of the 11649th PRTB located at [www.torgau.ru](http://www.torgau.ru). [↑](#endnote-ref-46)
49. . <http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=450> post 7 May 2008. [↑](#endnote-ref-47)
50. . <http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=645> post 18 June 2008. [↑](#endnote-ref-48)
51. . <http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=825> posts 4 August 2008. [↑](#endnote-ref-49)
52. . <http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=180> posts on 28 March 2008 and <http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=195> 30 March 2008 and

<http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=585> post 29 May 2008. [↑](#endnote-ref-50)
53. . <http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=165> posts on 27 March 2008. And <http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=825> post 4 August 2008 and

<http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=825> post 5 August 2008 [↑](#endnote-ref-51)
54. . <http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=825> post 4 August 2008 and <http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=855> posts 8 and 9 August 2008 and

<http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=705> post 7 July 2008. [↑](#endnote-ref-52)
55. . <http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=855> post 9 August 2008. [↑](#endnote-ref-53)
56. . <http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=75> posts on 8 March 2008. [↑](#endnote-ref-54)
57. <http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=840> posts 5 August 2008. [↑](#endnote-ref-55)
58. . <http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=690> post 26 June 2008. [↑](#endnote-ref-56)
59. . <http://www.torgau.ru/forum/viewtopic.php?f=1&t=892&start=750> post 22 July 2008. [↑](#endnote-ref-57)
60. . lecture by A.V. Veselovsky published in the Russian journal Nuclear Safety XXI February 2010. The text of the lecture is available at: [www.proatom.ru](http://www.proatom.ru) [↑](#endnote-ref-58)
61. . See [www.vadimvswar.narod.ru](http://www.vadimvswar.narod.ru) . This site’s proper title page, when translated into English, means “The Old Bear.” It is maintained by former TU-95 BEAR air and ground crew and is the most extensive Russian site dealing with the technical aspects of the TU-95 aircraft, its variants, and operations. In many ways the data on this site is superior to the data used by Western aviation sources. Note that it is also possible the crews were referring to the location of the ‘physics package’ in relationship to the carrier missile or aircraft in an alert state: a suspended pit could refer to a levitated pit design, for example, but the frequent use of ‘suspended’ to refer to weapons attached to an aircraft in a variety of discussions suggests otherwise. [↑](#endnote-ref-59)
62. . See FOIA CIA (16 May 64) “Central Intelligence Bulletin”; FOIA CIA (April 1977) “Interagency Intelligence Memorandum: The Significance of Soviet TU-95 BEAR D deployments in West Africa.” [↑](#endnote-ref-60)
63. .Y.V. Efimenko and A.V. Skulin, “Moment of Truth for the US Navy,” Science and Technology 2011 No. 1-2. [↑](#endnote-ref-61)
64. . John Eggenberger et al, Night Fighters: Stories from the Flyers of Canada’s All-Weather Fighter Force Canada and Europe 1953 to 1984 (Renfrew: General Store Publishing House, 2011) pp. 154, 157-159; 163-168. [↑](#endnote-ref-62)
65. . See [www.russianarms.mybb.ru](http://www.russianarms.mybb.ru) post on 4 December 2013 which is a long excerpt from the memoirs of a TU-95MS pilot, P. Deniken, who served in the 1023 TBAP (Heavy Bomber Aviation Regiment). Deniken was involved in testing the TU-95MS/KH-55 combination. [↑](#endnote-ref-63)
66. . Ibid. [↑](#endnote-ref-64)
67. . Ibid. See also Tony Halpin, “Russia to Test Fire Cruise Missiles for First Time Since 1984,” 7 October 2008, at [www.timesonline.co.uk](http://www.timesonline.co.uk) [↑](#endnote-ref-65)
68. . see note 65. [↑](#endnote-ref-66)
69. . See [www.russianarms.mybb.ru](http://www.russianarms.mybb.ru) post 16 May 2013; post 4 December 2013 excerpting Deniken; and the “Pilots Chagan” forum at [www.nuclear-poligon.ru/isv.htm](http://www.nuclear-poligon.ru/isv.htm) which is the repository of the memories of more former TU-95MS aircrew. [↑](#endnote-ref-67)
70. . [www.russianarms.mybb.ru](http://www.russianarms.mybb.ru) post dated 5-5-13, based on S. Claus Tupolev TU-95 (Kiev: Archive Press, 1999) and a the writings of Vladimir G. Rigmant dealing with TU-95 operations. [↑](#endnote-ref-68)
71. . lecture by A.V. Veselovsky published in the Russian journal Nuclear Safety XXI February 2010. The text of the lecture is at: [www.proatom.ru](http://www.proatom.ru) [↑](#endnote-ref-69)
72. . See interview with Ken Alibek by Jonathan B. Tucker in The Non-Proliferation Review Spring-Summer 1999 pp. 1-10; Tucker discusses TU-95’s being used to deploy BW bomblets in Scourge: The Once and Future Threat of Smallpox (New York: Atlantic Monthly Press, 2001) pp. 154-156; see also Ken Alibek, Biohazard (New York: Dell Publishing 2000) pp. 140-141. Note that there is commentary on the [www.russianarms.mybb.ru](http://www.russianarms.mybb.ru) post 20 May 13 where Alibek is referred to as “the traitor Alibekva” and there is discussion on the relative merits of cruise missile use for BW dispersion. An extensive quote from Alibek noting that cruise missiles were used in experiments at Biopreparat in the 1980s was also posted. [↑](#endnote-ref-70)
73. . Vadim Solovyon and Vladimir Ivanov, “Construction Flaw in TU-22M3 Strategic Nuclear Bombers lead to Unpredictable Disasters: Designers Knew About it but 30 Years Have Not Taken Any Measures,” in Nezavisimaya Gazeta July 2007 issue. This article is quoted in its entirety at [www.russianarms.mybb.ru](http://www.russianarms.mybb.ru). [↑](#endnote-ref-71)
74. . The TU-22 casualty list was compiled from “Accidents and Disasters of the TU-22 Aircraft in the Long Range Aviation from 1960 to 1989,” at [www.airforce.ru](http://www.airforce.ru) and for the TU-95 series, see the list at [www.vadimvswar.narod.ru](http://www.vadimvswar.narod.ru) and also “Accidents, Losses and Crews TU-95/142,” at the Kipelovo Airbase site, [www.fedotovoruhelpc.ruhelp.com](http://www.fedotovoruhelpc.ruhelp.com). This last list is compiled from six Russian secondary sources. It is possible to parse out crashes involving training aircraft (TU-22U, for example or TU-142 recce aircraft) that were not nuclear equipped to arrive at the figure of eight. [↑](#endnote-ref-72)
75. . See Ecoethics list at [www.ecoethics.ru/old/b32/161.html](http://www.ecoethics.ru/old/b32/161.html) [↑](#endnote-ref-73)
76. . The author compiled and assessed data from the following sources: Lev Giltsov, et al La Dramatique Histoire des Sous-Maries Nucleaires Sovietiques (Paris: Robert Laffont, 1992) which is a French translation of a Russian book written by a trio of submariners (note that the Russian Wikipedia entry on submarine accidents borrows heavily from the appendix on page 344-347); Nikolai Cherkashin, Incidents in the Soviet Navy (Veche Publishing, 2009) (Cherkashin was a Zampolit or political officer assigned to the Soviet Navy and has made a career of uncovering hidden Soviet naval history); John May, The Greenpeace Book of the Nuclear Age (New York: Pantheon Books, 1989); Norwegian-based environmental group Bellona is particularly good with its study of northern fleet nuclear submarine accidents at <http://bellona.no>; the Russian Citizen’s Center for Nuclear Non-Proliferation maintains its accident database at: <http://nuclearno.com>. [↑](#endnote-ref-74)
77. . FOIA CIA (2 May 72) Central Intelligence Bulletin. [↑](#endnote-ref-75)
78. . FOIA CIA (24 Sep 75) DDCI Briefing, “Strategic Forces”; FOIA CIA “SNIE “Soviet Submarine Warfare Trends, March 1985.” [↑](#endnote-ref-76)
79. . Jan Breemer, Soviet Submarines: Design, Development, and Tactics (London: Jane’s Information Group, 1989) pp. 114-124. [↑](#endnote-ref-77)
80. . Breemer, Soviet Submarines pp. 144-146. [↑](#endnote-ref-78)
81. . Walter M. Kreitler, “The Close Aboard Bastion: A Soviet Ballistic Missile Submarine Deployment Strategy,” Naval Postgraduate School Monterey Thesis, September 1988; FOIA CIA “SNIE “Soviet Submarine Warfare Trends, March 1985.” [↑](#endnote-ref-79)
82. . Pete Pedrozo, “The US-China Incidents at Sea Agreement: A Recipe for Disaster,” Journal of National Security Law and Policy Vol. 6 Issue 1 pp. 207-226. [↑](#endnote-ref-80)
83. . See sources in endnote 20. [↑](#endnote-ref-81)
84. . Russian and Ukrainian environmentalist groups both discuss this accident. See <http://nuclearno.com> and [www.ecoethics.ru](http://www.ecoethics.ru). See also “Nuclear Threat Scandinavia: Olenegorsk-2” in the Estonian journal, Baltic Review 10 April 2011, at [www.baltic-review.com](http://www.baltic-review.com) [↑](#endnote-ref-82)
85. . <http://forum.hnet.ru> “How Extinguishing Systems Ruined Submariners” (this is a technical forum on submarine fire suppression technology and lists six major accidents involving fire aboard Soviet submarines); <http://nuclearno.com> database; [www.lenta.ru](http://www.lenta.ru) (28 Jul 10) “Nuclear Submarine K-432 Delivered to Plant for Recycling”; see also sources from endnote 76. [↑](#endnote-ref-83)
86. . See sources in endnote 76. [↑](#endnote-ref-84)
87. . The Ukrainian environmental group Ecoethics lists the DELTA II incident in their database at [www.ecoethics.ru](http://www.ecoethics.ru) and it is also mentioned in May, The Greenpeace Book of the Nuclear Age. See also sources in endnote 20. [↑](#endnote-ref-85)
88. . See Peter Hutchhausen, Igor Kurdin, and R. Alan White, Hostile Waters (New York: St Martin’s Press, 1997). [↑](#endnote-ref-86)
89. . Igor Kurdin and Wayne Grasdock, “Loss of a YANKEE SSBN,” Undersea Warfare Fall 2005 Vol. 7 No. 5. This article is based on interviews with the officers of K-219. [↑](#endnote-ref-87)
90. . Ibid. [↑](#endnote-ref-88)
91. . FOIA NSC National Security Planning Group Meeting, November 30, 1984. [↑](#endnote-ref-89)
92. . FOIA NSC National Security Planning Group Meeting, December 5, 1984. [↑](#endnote-ref-90)
93. . FOIA CIA (March 1985) “Soviet Strategic and Political Objectives in Arms Control in 1985.” [↑](#endnote-ref-91)
94. . FOIA NSC National Security Planning Group Meeting September 8, 1987. [↑](#endnote-ref-92)