

## **CHAPTER 3**

### **PEACE THROUGH STRENGTH ALONE: US AIR FORCE VIEWS ON ARMS CONTROL IN THE 1950S AND EARLY 1960S<sup>1</sup>**

**Edward Kaplan**

The United States Air Force (USAF) of the 1950s and 1960s exemplified the general principle that organizations tend to reflect their leaders' beliefs. During this period, an extraordinary string of generals whose formative combat experience was as bomber pilots and commanders in the Second World War led the USAF and the Strategic Air Command (SAC) through a period in which the latter became the cornerstone of America's deterrent strength. These decades also saw the continuation of early attempts at arms control and disarmament conducted in an environment of doubt and fear barely comprehensible today. Furthermore, the Kennedy and Johnson Administrations signed agreements over the objections of those Air Force leaders responsible for SAC and the deterrent force. Air Force mistrust of arms control initiatives during this era was centered on a perceived incompatibility of those initiatives with deterrent and warfighting strategy, a general mistrust of the Soviet Union, a refusal to adapt to evolving deterrent thought, and friction with the post-1961 civilian Department of Defense leadership. This chapter examines each of these problems in turn and then briefly recounts the debate over the Limited Test Ban Treaty of 1963 as a historical example of these objections.

#### **THE AIR FORCE PERSPECTIVE**

Before delving into Air Force objections to the arms control process in the 1950s and 1960s, some definitions are necessary. Specifically, who best represents the "Air Force" view on any subject? For the purposes of this chapter, I have construed this as narrowly as available sources allow—the Air Force Chiefs of Staff and their planning organizations. Unlike the Strategic Arms Limitation Talks I (SALT I) and later arms control agreements, the Air Force in this period did not have formal negotiating teams or a separate planning body for arms control and disarmament.<sup>2</sup> Rather, the Air Staff plans branch appears to have provided disarmament guidance to the Chief of Staff on an "as-needed" basis. There are no readily available documents showing a separate Air Force view on arms control issues other than those created by the plans branch for Air Force internal

consumption. Views provided upward to the National Security Council (NSC), the Office of the Secretary of Defense (OSD), and the President appear only in a consolidated form with other service views in Joint Chiefs of Staff (JCS) papers. The long-range plans branch that later produced arms control positions was not even created until the mid-1950s as an outgrowth of an ad hoc long-range planning group, the Lignon Committee.<sup>3</sup>

So, the question arises, “How to get at an ‘Air Force’ position”? The four best sources for these opinions are Air Force Chief of Staff testimony before congressional committees, books produced after retirement, internal Air Force plans staff papers, and NSC and JCS papers and discussions where the Chief of Staff participated. During the period in question, the opinions of a few men stand out as most relevant to discerning an Air Force stance. Generals Thomas D. White, Nathan F. Twining, Curtis E. LeMay, and Thomas S. Power can best be said to represent the “Air Force’s” position. The first three were Air Force Chiefs of Staff during the 1950s and early 1960s. The last two led SAC from its formative years in the late-1940s through its heyday in the mid-1960s.

They share a number of common characteristics. Notably, all these men were members of what Colonel Michael Worden refers to as the “Senior World War II generation” in his insightful book, *Rise of the Fighter Generals*.<sup>4</sup> This group is notable for its rapid ascent to command positions during World War II and dominance of the Air Force hierarchy in the early Cold War years. “[They] showed resolve, steadfastness, and determination. Sortie production, tonnage dropped, and bombs on target were their concept of strategy; strict flight discipline, perseverance, and growing numbers their methods.”<sup>5</sup> These experiences, and the methods derived from them, shaped early Cold War Air Force fighting doctrine and the Generals’ opinions of the value of arms control and disarmament.

### **Post-War Arms Control**

The arms control and disarmament proposals and agreements they were asked to weigh in on during their tenures at the top of the Air Force hierarchy would be precedent-setting for later negotiations. The Eisenhower Administration pursued a number of arms control-related measures from 1953 forward. The “Atoms for Peace” proposal in that year called for an international organization to supervise the peaceful development of nuclear energy with nuclear material donated by the US and USSR.<sup>6</sup> A later plan, “Atoms for Police,” envisioned an international atomic armed force under the auspices of the United Nations (UN) Security Council, which would enforce its mandates.<sup>7</sup> Both proposals, with their emphasis on international

regulation, clearly show their roots in 1940s proposals such as the Baruch plan. President Eisenhower also proposed measures more directly related to the control of nuclear weapons. The “Open Skies” proposal of 1955 recommended aerial reconnaissance, rather than the more intrusive ground inspection, of the US and USSR as a first step toward arms reductions.<sup>8</sup> Although that plan failed, Eisenhower showed his dedication to disarmament by agreeing to a testing moratorium from 1958 to 1961, followed by ultimately fruitless negotiations on a formal agreement.<sup>9</sup> As will be discussed, the Soviet breaking of the moratorium in 1961 was an important source of Air Force opposition to the Limited Test Ban Treaty two years later.

The Kennedy and Johnson Administrations achieved more progress in their efforts at formal arms control agreements. The 1963 Limited Test Ban Treaty succeeded where the Eisenhower Administration had failed from 1958-1961 in outlawing the testing of nuclear weapons in the “three environments” of air, sea, and space. The Johnson Administration followed this with two further agreements: the Outer Space Treaty of 1967 and the Nuclear Non-Proliferation Treaty the following year. The former prohibited the placement of any nuclear weapon in orbit or on a celestial body.<sup>10</sup> The latter attempted to slow the spread of weapons to other countries by having nuclear signatories pledge not to aid any non-nuclear country in gaining nuclear weapons and non-nuclear signatories promise not to seek such a capability.<sup>11</sup> The bomber generals opposed these agreements to a greater or lesser degree and based their opposition on a genuinely felt opinion that such treaties were gravely damaging to the national security.

### **Nuclear Strategy**

Much of their opposition stemmed from their view of how the Air Force and the United States would fight and win a conflict with the USSR. The bomber generals and their staffs were very reluctant to change their notions of what composed an effective fighting strategy. At its core, this strategy called for having a war-winning capability should deterrence fail. This capacity required continuous technological advancement to preserve America’s nuclear superiority, which was the essential requirement for such a strategy. Arms control and disarmament initiatives that would directly interfere with the necessary measure of this superiority were anathema.

Contrary to later notions that a nuclear war could not be “won” in any meaningful sense, the Air Force’s first Strategic Air Operations doctrine manual, Air Force Manual 1-8, published in 1954, defined the role of the strategic air force as, “to defeat the enemy nation.”<sup>12</sup> These operations were

to be carried out with a maximum amount of force in the smallest amount of time because “the rapidity of collapse will be directly proportional to the timing and weight of attack.”<sup>13</sup> More generally, the Air Force’s primary task if deterrence should fail was to “prevail in general war.”<sup>14</sup> The warplan to implement this doctrine, which originated with LeMay in the early 1950s, was known informally as the “Sunday Punch.” This concept called for the unrestrained use of the stockpile in the first blow.<sup>15</sup>

The “Sunday Punch” had at its core a belief in the primacy of atomic air power. In the words of Major General Richard Lindsay, the head of Air Force plans in 1955, “One or the other [nuclear armed nation] gains the ascendancy through better use of his atomic weapons and becomes the victor.”<sup>16</sup> That ascendancy must be brought about through the “maximum effort” against the “sources of enemy strength.”<sup>17</sup> This effort needed to be compressed into the smallest amount of time to maximize shock. During the mid-1950s, Air Force plans called for the decisive phase of the war to last no more than 30 days.<sup>18</sup> The first four days of combat would constitute the most intensive phase of this effort. During this period, SAC would hit 388 airfields and 24 guided missile sites. Furthermore, 14 cities with populations over 100,000 would be hit as “a bonus effect.” The second phase, which would extend until D+30, would see the destruction of a further 2800 targets.<sup>19</sup> In the words of an unidentified Air Force planner, “Is there a humanly contrived organization which can resist such stupendous force applied in such a short period? I doubt it.”<sup>20</sup> In other words, the clear objective of such a plan was victory.

Chief of Staff Nathan F. Twining stated his expectations of victory in a speech to the Secretaries of the Armed Services in 1955, “. . . general atomic warfare will be characterized by maximum destruction during its opening phases. If one contestant does not capitulate as a result of the opening phase, the decision may well rest with the side retaining the most effective atomic delivery capability.”<sup>21</sup> That is, if deterrence failed, the US needed to achieve “relative advantage.”<sup>22</sup> Success in the initial phase would determine the ultimate outcome of the conflict.<sup>23</sup> Air Force planners also recognized that the faster the US struck the Soviet Union, the fewer bombs would land on American targets. “We dare not risk one deniable hydrogen bomb on our country for want of urgency in our reaction.”<sup>24</sup>

Such sentiments were reflected in a planning emphasis on destroying what would later be termed “counter-force” targets. Contemporary war plans divided up the Soviet target complex into three categories. The first and most important set was BRAVO, blunting targets whose destruction would hinder a Soviet atomic offensive. Only after BRAVO had been destroyed would SAC follow up with raids on DELTA, the disruption set.

These targets included industries and sites critical to Soviet war-making capability such as atomic energy, liquid fuel production, and jet engines. The third target set, ROMEO or retardation, included troop concentrations and their supporting infrastructure. This was to be SAC's direct contribution to the defense of Western Europe and would be struck simultaneously with DELTA.<sup>25</sup>

As American estimates of Soviet offensive and defensive capabilities increased through the 1950s, the quantitative and qualitative requirements for these operations spiraled ever upwards. Maintenance of the qualitative edge compelled continued technological superiority. Not only must Air Force bombers be able to penetrate to their assigned targets, but the faster they could do so and the heavier bomb loads they could carry, the faster victory could be achieved. Therefore, any arms control measure that hindered such technological development would be against the US national interest. According to General Twining, "To counter [the increasingly sophisticated Soviet air threat] we must continue to maintain better aircraft, better weapons, and a higher degree of operational readiness and flexibility. . . . [We must] maintain the qualitatively superior strategic Air Force."<sup>26</sup> Recent experience with the vulnerability of the B-29 to the MiG-15 over Korea reinforced this opinion and forced the cessation of B-29 daylight strikes in 1952-1953.<sup>27</sup>

## **Research and Development**

The Air Force, and the Joint Chiefs, feared that this critical research and development could be hindered by arms control agreements. In 1955, the JCS warned the President's disarmament advisor, Mr. Charles Coolidge, that any reductions in research and development could lead to the "withering away" of the US capability to carry out that research as industry realigned to more profitable endeavors. In the meantime, the Soviets, with their subsidized economy, would be able to maintain the organizations and personnel in place to carry out research in secret or to be prepared to do so should they abrogate an agreement. "[It] is essential to maintain a continuous program to update our materiel."<sup>28</sup> Furthermore, the long lead times required for development meant that interruption of research would result in unacceptable delays in fielding necessary updated weapons systems. The JCS warned that "We specifically disagree with any concept of limiting the forward march of technology in military fields, for example, by the elimination of further nuclear tests."<sup>29</sup>

The advances the Air Staff and JCS foresaw were not limited to simply updating existing weapons systems. As early as 1952, the Air Staff stated a

requirement to develop reconnaissance satellites as soon as possible. A memorandum from then Lieutenant General White, dated December 1952, asserted that such a vehicle was absolutely necessary to provide warning of an impending Soviet attack due to limits of aerial reconnaissance. This would allow SAC to launch its assault on the BRAVO target set as soon as possible. White went on to cite the reconnaissance satellite as a stepping stone toward future space-based weapons, as well as providing significant “political, scientific, and psychological advantages.”<sup>30</sup>

Fewer than ten years later, White, then Vice Chief of Staff, foresaw even larger advantages to continued research and development in space vehicles. He thought the new Kennedy Administration’s dedication to the peaceful use of space was shortsighted. Future technologies that might supersede thermonuclear weapons might only be invented if space were fully exploited for military use.<sup>31</sup> One year earlier, LeMay approved an Air Force Council recommendation that stated unequivocally, “The use of space as an extension of the battlefield is inevitable. . . . Space operations are a natural extension of the present USAF operational environment.”<sup>32</sup> Within a year of this general decision to go forward with USAF space capabilities, the Air Force Council was urging manned military missions and a rapid increase in Air Force funding of space programs such as the Dynasoar and sharing the Apollo program with NASA. Recommended milestones in the Air Force program included a permanent manned space station by 1967 and a permanent lunar base by 1971.<sup>33</sup> Thus, research and development were designed to provide any possible edge to the Sunday Punch.

To summarize, during this period (1953-1960) Air Force plans for war with the Soviet Union called for a rapid and powerful strike against a full range of targets with an emphasis on the BRAVO or blunting mission. The goal was to first minimize damage to the United States from a Soviet attack by preemptively destroying it at its source and then go on to destroy Soviet warmaking capability. The critical part of this would be the speed and weight of the initial attack. These, in turn, required a continued qualitative and quantitative edge over the Soviet Union. Therefore, disarmament agreements that hampered the Air Force from fulfilling this mission were contrary to the national security.

### **ALTERNATIVE PERSPECTIVES**

Many outside the Air Force in the late 1950s began to question this notion of deterrence that required maximum effort in minimum time. Air Force leaders reacted by resisting any change to what they believed constituted an effective deterrent. In the words of then Lieutenant General

Frank F. Everest, the Deputy Chief of Staff for Operations in 1955, “The only apparent restraints on the conduct of Communism have been obviously attributable to their need to avoid total war. Such restraint was imposed by the significant U. S. *superiority* in nuclear warfare [emphasis added].”<sup>34</sup> Notions of minimal deterrence, graduated deterrence, and a solely counter-value force were deemed ineffective and dangerous. Since these new ideas informed many of those supporting arms control measures, by opposing these notions, USAF leaders were simultaneously questioning the underpinnings of the proposals.

### **Minimum Deterrence**

The most alien idea to the existing USAF doctrine was minimum deterrence which cast uncertainty on the counter-force policy emphasized by the late-1950s warplans with their requirement for striking BRAVO targets first. Minimum deterrence advocates claimed that the counter-force arsenal was wasteful and that all that was required for an effective deterrent was a small, invulnerable force capable of inflicting unacceptable damage on Soviet population centers and industry. This threat would be adequate to prevent Moscow from launching a general war. Furthermore, since advocates assumed that the US arsenal would be used only after a Soviet first strike, a counterforce-oriented force would be wasteful since it would land on empty airfields and silos. Thus, minimum deterrence provided adequate security at a much lower cost than the 1950s counterforce-oriented SAC.

Air Force planners disagreed. They argued that forces designed to “present a credible threat of defeat”<sup>35</sup> constituted a more effective deterrent than did forces, such as those advocated by minimum deterrent proponents, that only exacted a high price for victory. Furthermore, such a force, “[supported] completely the only sound military and national policy, that of winning a war should deterrence fail.”<sup>36</sup> While a minimum deterrent might function under most circumstances, a “force adequate to achieve victory under any circumstances . . . is also a deterrent to the highest achievable degree.”<sup>37</sup> By contrast, the minimum deterrent would be inadequate because it would not “confront an enemy with a credible threat of defeat.”<sup>38</sup> Further, they criticized the underlying assumptions of minimum deterrence—that “sufficient” damage against a nation could be precisely forecast in advance. If a nation had provision for industrial recovery and had shown a willingness to “sacrifice human life on an extravagant scale in the attainment of political objectives”<sup>39</sup>—as had the USSR in World War II—

then the price exacted by a minimum deterrent might be one that nation would be willing to pay.

Beyond this issue was one which tied directly into Air Force warfighting philosophy. The planners criticized that a minimum deterrent force would be unable to take the initiative. One study stated,

What has deterred aggression in Europe, and in other vital areas for the past ten years, has been primarily the counterforce aspect of the general war capability, backed up by the expressed willingness to use any and all forces to defend the Free World if it should become necessary. An enemy nation is most effectively deterred from attempting major acts of limited aggression if he is made to realize that we have both the will and the physical capability to retaliate with general war forces, and that, should we do so, the resulting possession of the initiative and a counter force capability will lead to our destroying his general war retaliatory capability.<sup>40</sup>

Finally, since a minimum deterrent would only be targeted against a general war capability, the US would have to build up expensive conventional forces solely for limited (i.e. non-nuclear) war. This potential expense would far exceed that required for a continued counter-force arsenal which would be capable of deterring both limited and general war. "Such a strategy would eventually become a far greater drain on the taxpayer, than the present one if Europe survived long enough to implement it in the first place."<sup>41</sup>

### **Graduated Deterrence**

Related to the arguments against the minimum deterrent were those arrayed against graduated deterrence. As defined by the Air Force planners examining the concept in 1960, this meant the development of a "politico-military capacity capable of containing every conceivable type of Communist threat."<sup>42</sup> Clearly harkening back to the Korean experience, the planners claimed that this concept was flawed in several areas. First, it assumed that all war was divisible into neatly defined categories against which an efficiently planned force could be programmed and maintained. This ran against what the authors claimed was recent experience that levels of war tended to blend together and could not be considered separately. Second, this new idea assumed that all kinds of war were equally likely

instead of acknowledging that wars of attrition belonged to the past. As with the minimum deterrent, this thinking led to the conclusion that expensive conventional forces must be maintained for all levels of war. Third, the planners believed that segmentation of the spectrum of war, and the forces designed to wage it, into distinct elements ignored the capability of forces to operate at multiple levels of conflict. A credible counter-force deterrent could eliminate or greatly reduce the chance of conventional war. Finally, a military tailored to a graduated deterrent model, like one keyed to a minimal deterrent, would be an unlimited strain on national resources.<sup>43</sup>

### **Countervalue Targeting**

The plans staff also addressed the underlying issue of countervalue targeting versus counterforce targeting. The former concept, which formed the underpinning of the minimum deterrent, was considered irrational. In their thinking, the only valid target for the application of military force was the enemy military or targets that directly affect them. Destruction that does not affect the war's outcome in one's favor was "politically and morally unjustifiable."<sup>44</sup> Given the assumption that no future general war would last long enough for industry to have an impact on victory, attacking a city would be "anachronistic and inhumane."<sup>45</sup> Thus, counter-value was militarily and morally bankrupt. By contrast counter-force meant that, "the United States has the means to defeat the enemy's military forces, and by so doing, to deter general war, or to prevail should it occur." It was, "the most essential ingredient of the US war-winning capability."<sup>46</sup> As these examples show, the Air Force strongly resisted modifying its counterforce dogma as the 1950s drew to a close.

## **(DIS)TRUSTING THE SOVIETS**

Underlying apprehension at the prospect of undermining Air Force warfighting methodology was a deep-seated mistrust of the Soviets and complete lack of confidence in any agreement that could be negotiated with them. Peace required effective deterrence and effective deterrence required military superiority. In 1955, after consulting with the Joint Chiefs, Secretary of Defense Charles Wilson advised President Eisenhower that, "deterrence through armed strength is our best real hope for peace."<sup>47</sup> He characterized that mutual deterrence as a "fail-safe" course of action for the United States: if the Soviet Union acted in "bad faith," the US would not be any worse off; if however the USSR cheated in an arms control treaty,

American national security could be “irreparably damaged.”<sup>48</sup> Statements of this sort demonstrate the thinking in Air Force and other senior defense circles that effective deterrence and arms control were to some degree mutually incompatible.

The issue of political settlement constituted the major source of Air Force disagreement. Air Force leaders believed that reductions in arms should only follow a resolution of the political tension between the Free World and the Communist Bloc. As one JCS paper put it, “arms” did not “beget tension.” Rather, “tensions” beget “arms.”<sup>49</sup> Thus, any arms limitation agreements should be preceded by a political settlement. Otherwise, a treaty would only be the basis for future tension as each side accused the other of violating the agreement. In this way, the arms limits could actually become destabilizing rather than the stabilizing force hoped for.<sup>50</sup> Air Force leaders and the JCS also feared that the Soviets might gain an overwhelming advantage by seeking an agreement limiting nuclear weapons without concurrent cuts in conventional weapons.<sup>51</sup>

That specific example of suspecting Soviet motives about disarmament agreements is illustrative of a more general trend questioning any negotiation with Moscow. The Joint Chiefs advised the President in 1954 that the Soviets would never negotiate openly. They would, instead, seek their objective by, “disregarding any accepted code of ethics or any conception of honor in the conduct of negotiations *or in the carrying out of any agreements which might flow from them.*” [emphasis added]<sup>52</sup> This distrust was rooted in the often repeated sentiment that the Soviet goal was an unwavering one aimed at the destruction of the West. “The objective of militant Communism is plain to all but those who will not see. That objective is world domination.”<sup>53</sup>

With such opinions being common, it is not surprising that Twining advised President Eisenhower in 1960 that the Soviets had “consistently sabotaged all efforts” towards arms control agreements and used negotiations as “propaganda exercises.”<sup>54</sup> He then advocated what was a cornerstone of the Air Force position on arms control during this period—the requirement for a strict inspection regime. Top Air Force and JCS leadership cited interwar disarmament treaties that lacked effective inspection regimes as damaging to the security of nations that abided by their strictures. They permitted the rearmament of violators without allowing other nations the time to react.<sup>55</sup> Furthermore, the very nature of the Soviet regime prevented an effective inspection program. The Iron Curtain “would make a mockery of any inspection system which might be devised and, if the record of past Soviet conduct with respect to solemn international agreements is a true index, Soviet bad faith, evasion, and

outright violation would render any disarmament agreement sterile, except as a means to advance Soviet objectives.”<sup>56</sup> Even with advances in technology through 1960 including the U-2, senior military leaders such as Twining did not change their opinions markedly. For him, it was less the Iron Curtain in any one form than the Soviet “penchant for secrecy” that was a key obstacle to any agreement.<sup>57</sup> It was deemed critical that the inspection system for any agreement be in place and tested before weapons reductions took place. Any agreement would only be as strong as the inspection regime supporting it.<sup>58</sup>

### **Interagency Distrust**

Just as Air Force distrust of the Soviets shaped their view of arms control, friction with new political leadership in the Kennedy Administration’s Department of Defense added to a general atmosphere of suspicion regarding arms control initiatives. Under the Eisenhower Administration Air Force views had, by and large, been endorsed by both the Secretary of Defense and the President. Twining had made a special effort to establish a smooth working relationship with Eisenhower as soon as that administration took office. In mid-June 1953, the General sought a personal meeting with the President to smooth over some difficulties with the budget process that threatened to jeopardize the Chief of Staff’s ability to “operate inside and not outside the current administration.” The goal was to ensure that “Air Force positions will be consistently and carefully considered by the Commander-in-Chief and the Defense Department.”<sup>59</sup>

Efforts such as this resulted in close cooperation between the Eisenhower Administration and the Air Force. This was amply demonstrated in a 1956 meeting in the White House with members of the Joint Chiefs, when Army Chief of Staff General Maxwell Taylor asked the President to resolve an impasse over the basis for future planning. The Air Force, Navy, and Chairman of the Joint Chiefs all agreed that future planning must be based on the use of atomic weapons. The services believed that war plans should involve use of atomic weapons at the outset without restriction—the Air Force’s counterforce/BRAVO strikes. Further, they held that forces capable of carrying out these strikes would be sufficient to deter limited war. Although presented in the context of JCS views, they were consistent with the Air Force positions at the time. General Taylor, on the other hand, believed that this was incorrect. He found it dangerous, and if fully adopted he claimed it would eliminate “flexibility.” The resulting force structure would “freeze out” any other kind of conventional forces.

Eisenhower came down firmly on the USAF side. He responded that Taylor's position was predicated on the assumption that the Soviets were an enemy that valued human life as much as the United States—a false assumption given experience in the Second World War. Eisenhower did not see any reason to believe that the Soviets would hold back from using atomic weapons immediately and in full force. Therefore, it was logical that the United States anchor planning for future war on the basis of use of atomic weapons. Indeed, “prudence would demand that we get our striking force into the air immediately upon notice of hostile action by the Soviets.”<sup>60</sup>

Furthermore, the President refused to tie down American forces in wars around the Soviet periphery. Instead, we should use our most efficient weapons—atomic weapons—to support local conventional forces.<sup>61</sup> All these points—the nature of the Soviet enemy, the utility of nuclear weapons in general and limited war, and the requirement to strike hard and fast at the outbreak of war—were in accordance with the major Air Force positions.

This cooperation dissolved with the Kennedy Administration. Unlike the 1950s, the Air Force lost its special influence with the President. An early indicator of the changing times occurred when Kennedy walked out of the Air Force's introductory “Net Evaluation” briefing summarizing the Soviet threat.<sup>62</sup> McNamara institutionalized the new separation between the Air Force and higher leadership through the practice of placing a buffer of civilians between the Chief of Staff and the Secretary of Defense. To LeMay's great annoyance, McNamara's office worked directly with action officers rather than using the chain of command, thereby sidestepping the Chief of Staff. This tendency, added to the routine practice of setting short deadlines, kept the Air Force leadership off balance.<sup>63</sup>

One example of the fundamental difficulties encountered by the new administration was in the acquisition of new manned bombers—a matter essential to the continued future viability of the Air Force warfighting strategy. The supersonic follow-on to the B-52, the B-70 Valkyrie, became an early McNamara target. He claimed that the aircraft would be vulnerable in the air to surface-to-air missiles, vulnerable on the ground to a first strike, would have to be launched immediately on warning of a suspected attack to ensure survival, and would be too slow for effective counterforce. By comparison, the new ICBMs were cheaper, faster, and less vulnerable. When McNamara subsequently cancelled the B-70 program, LeMay went directly and successfully to Congress for restoration of the funds. An infuriated McNamara refused to spend the money. The Air Force's fear that ICBMs were a questionable new technology that had limited accuracy and a high price tag led it to propose a compromise program of air-launched

missiles—Skybolt. McNamara cancelled the Skybolt in 1962.<sup>64</sup> In 1963, McNamara urged renewal of LeMay's term as Chief of Staff for only one year rather than the customary two.<sup>65</sup>

The primary complaint raised by LeMay was McNamara's discounting of "military expertise." An embittered LeMay later remarked that McNamara's attitude seemed to be "Get out of our way. We think nothing of you or your opinions."<sup>66</sup> Other Air Force leaders shared LeMay's view. General Howell Estes thought the McNamara whiz-kids were "fuzz-cheeked PhDs that didn't know the first thing in the world about the military."<sup>67</sup> General White believed they were "arrogant young professors" who lacked the worldliness and motivation to stand up to the Soviets.<sup>68</sup> General Lauris Norstad, the Commander of the North Atlantic Treaty Organization and considered one of the Air Force's most intellectual generals during this period, also experienced tension with McNamara. In a post-retirement interview he expressed similar beliefs to others held by Air Force officers. "I think they thought they created the Earth and everything in it. Well, they were just patronizing as hell. They thought they were the horn with all knowledge . . . . Every new administration brings in with it young, brilliant, eager, and ignorant people. The only difference in the Kennedy Administration was that they were younger, more eager, possibly more brilliant, but also clearly more ignorant."<sup>69</sup>

### **THE AIR FORCE VS. ARMS CONTROL**

One area in which LeMay believed his military expertise should count most was defining what constituted an effective and stable deterrent—one poised to win if deterrence failed. LeMay referred to the idea of arms limitations bringing about stability as "inverted strategy" and dubbed McNamara the "high priest" of its "cult."<sup>70</sup> He charged that these arms controllers would prefer "surrender to general war."<sup>71</sup> One of LeMay's appointees, Lieutenant General Fred Dean, the bureau chief of the military division of the Arms Control and Disarmament Agency, stated

I questioned the motivation of the people working in that business. In military terms, I would say, they considered that their effectiveness reports should be determined more by the agreements they got on disarmament rather than on furthering the cause of the nation. . . . We as a nation are committed nationally and internationally to arms control. The question is how to do it, how to have some form of arms control without doing it unilaterally, without lessening

our relative strength and whatnot. The military, of course, looks at that one way, and people, not defense minded, look at it another. I felt that the defense posture was being cheated. The point of view that would keep our defense posture where it was safe and where it was relatively strong was being disregarded. I might as well have not been there for the influence I had.<sup>72</sup>

To attain these objectives, LeMay alleged that McNamara had actively deceived the American public about the threat posed by the Soviet Union. For example, when McNamara counted the number of intercontinental bombers, LeMay claimed he ignored the threat of intermediate range refuelable aircraft or those capable of one-way missions. The general did not put such tactics beyond the Soviets, who had shown such callous disregard for life before.<sup>73</sup> He believed that such a “deception” was a calculated attempt by McNamara to push forward his agenda for arms control while squelching military opposition.

### **Test Ban Treaties**

Distrust of McNamara and of his arms control proposals was sorely tested by the debate over the Limited Test Ban Treaty of 1963. Air Force leadership opposed this agreement using the arguments they had developed over the 1950s, and it serves as a demonstration of their views. The Air Force belief that only military superiority provided an adequate deterrent would be challenged by this agreement through its potential stifling of technological advancement. As far as USAF leaders were concerned, restricted testing translated into loss of a technological edge, and—potentially—a dangerously ineffective deterrent.

Hopes to achieve a test ban treaty were evident long before the actual August 1963 signing. Fear of fallout spiked due to the much-publicized incident of an accidentally irradiated Japanese fishing vessel by the 1954 CASTLE BRAVO test. This drove the beginnings of talks on limiting above-ground tests the following year. The first real breakthrough toward test limitation came with the mutually agreed but unsigned 1958 moratorium on testing in any environment. The following three years of negotiations stalled primarily on the verification issue, with the West insisting on on-site inspection. The moratorium came to a disappointing end when the Soviets resumed tests on 30 August 1961 without prior notification. Notably, Moscow tested three weapons in one week, including one with a yield of 58 megatons.<sup>74</sup>

The number and size of the tests indicated ample prior preparation—and to Air Force leaders reinforced their perception that the Soviet Union could not be trusted. Twining later stated that he had advocated against the informal moratorium from the beginning. At the National Security Council meeting where Eisenhower announced his intention to go along with the Soviet proposal, Twining summarized his opposition based on mistrust of the Soviets and lack of verification by telling Eisenhower “This is going to be the saddest day of your life. This is a bad mistake.”<sup>75</sup> In the ensuing discussion, Twining emphasized that the United States would likely lose all its capability to test weapons as the infrastructure withered and personnel moved on. When the Soviets ended the moratorium, Twining lamented the loss of three years of “technology time” that the United States couldn’t make up.<sup>76</sup>

Despite this sentiment, the United States rebuilt its enfeebled testing infrastructure and launched several comprehensive series of tests centered on developing an anti-ballistic missile, ensuring the survivability of missiles and warheads against a Soviet attack, and their ability to penetrate Soviet defenses. The US also acquired more general knowledge on the effect of nuclear explosions on contemporary technology such as radars, communications, and hardened silos.

The test ban issue received renewed attention in 1962 following the Cuban Missile Crisis. President Kennedy decided to resume seeking a test ban treaty as a way to reduce tensions. He saw the period immediately following the crisis as a limited window of opportunity during which an acceptable treaty might be negotiated. On 8 June 1963, Premier Khrushchev sent word to Kennedy that he would be willing to resume negotiations in Moscow the next month.<sup>77</sup> Secretary of State Dean Rusk, British Foreign Minister Lord Home, and Soviet Foreign Minister Andrei Gromyko signed the agreement on 5 August 1963 after only ten days of negotiations.<sup>78</sup>

The treaty itself was relatively simple compared to later agreements like SALT I or START. Its provisions were correspondingly straightforward. It disallowed testing in the “three environments” of water, air, or space. Underground trials could continue as long as the radioactive debris did not leave the “territorial limits” of the testing nation.<sup>79</sup>

Although the provisions were relatively few, the expectations for the treaty were comparatively high. Rusk, testifying about the treaty before the Senate Foreign Relations Committee, outlined three areas where he stated the United States would benefit. First, the treaty would reduce tensions. Successful adoption of the treaty would “constitute a significant step in the direction of slackening the pace of the arms race.”<sup>80</sup> Secondly, adoption of the treaty would provide a military advantage. According to Rusk, the US

lead in low- and medium-yield weapons would be protected while the US lag in high-yield weapons brought about by the recent Soviet violation of the moratorium was inconsequential because there was no “military requirement” for such weapons. Since there was an overall balance militarily, it was a good time to put a test ban into effect. Finally, the treaty would provide an important political gain because it would set a precedent. Assuming the treaty provisions could be implemented without any embarrassment to the Soviets or with the Soviets perceiving a disadvantage, then it was more likely that future agreements could be signed.<sup>81</sup> The limited test ban would hold other important non-bilateral benefits for the US. Specifically, it would act as an instrument against proliferation. If borderline nuclear states could be encouraged to sign on, that would be an important gain. Further, the possible future agreements that Rusk foresaw the test ban making possible included specific non-proliferation measures such as the banning of technology transfer or halting the future production of fissionable material.<sup>82</sup> The second non-bilateral advantage was the one that lay at the origin of the test ban movement—reduced fallout.<sup>83</sup>

Despite these alleged advantages, Air Force leaders together with the JCS opposed ratification of the treaty. This opposition was grounded in the arguments outlined above. The generalized friction with McNamara and the administration reared its head from the very beginning. Rusk went to Moscow in August and negotiated and then signed the treaty without any military advisors present. When questioned by the Senate on whether the Joint Chiefs had been consulted in the writing of the treaty, LeMay responded that the President had consulted each chief individually—once—and then—once—collectively. McNamara had not even met with them at all.<sup>84</sup>

During his first appearance before the Congress, LeMay discussed why he and the JCS believed the treaty was not “consistent with the national security.”<sup>85</sup> He said two things were required for the maintenance of military superiority: continued expansion of the understanding of weapons effects and the development and application of new weapon techniques. Thus, LeMay began his argument against the treaty with the assumption that effective deterrence required military superiority as opposed to parity, minimum deterrence, or any of the other recent developments in strategic thought. LeMay’s specific objections to ratification flowed from this general premise.

The general claimed that US testing capability was bound to deteriorate rapidly and pointed to the 1958-61 moratorium as evidence. Moreover, that experience also showed that the Soviets were capable of maintaining their capacity to resume testing rapidly if they chose. Those tests they conducted

after their abrupt resumption in 1961 could have given them important leads in very-high-yield weapons and ballistic missile defense. Although overdesign of American silos and defensive systems could counter some of these advances, certainty was impossible without testing.<sup>86</sup>

Furthermore, LeMay claimed, it would be impossible for the US to catch up to the Soviet lead in high-yield weapons if the test ban went forward. He contradicted Rusk's earlier statement by asserting a military need for such devices. In a more general sense, "limited numbers of very high yield weapons would contribute measurably to deterrence in a manner which the Soviets would understand and respect." This reinforced the notion that the Soviets only respected superior force. More specifically, high-yield weapons would be useful against hardened targets and also would provide a psychological edge.<sup>87</sup>

LeMay went on to disparage the underlying motivation behind the test ban movement, the fear of fallout. He claimed that the fallout from all tests performed through December 1962 was only one-twentieth of the normally occurring background radiation and consequently was not a realistic health threat. The fallout threat had been played up in the public mind through "cartoons, propaganda, half-truths, and misinformation."<sup>88</sup> To him, a Soviet Union with nuclear superiority was far more dangerous to American security than fallout.

Finally, LeMay emphasized that the Soviets had not changed and could not be trusted to stay within the treaty's limitations. When Senator Strom Thurmond asked whether the Soviet goal of "world domination and enslavement" had changed, LeMay responded that it had not.<sup>89</sup> When further questioned about likely Soviet actions if the treaty were signed, he stated simply "I think they would cheat."<sup>90</sup>

LeMay summarized his position by stating "In the current world environment, preserving peace means maintaining preponderant military power. To maintain a favorable balance of military power we must have nuclear superiority. To do this I firmly believe we must continue our nuclear weapon development programs and be able to conduct nuclear testing as required."<sup>91</sup> This opinion, grounded in a firm belief in the need for nuclear superiority and a grave mistrust of the Soviet Union, was a clear and consistent outgrowth of Air Force positions on effective deterrence stemming from the 1950s.

### **A Reversal on Test Bans**

What happened next is somewhat unclear. LeMay appeared before the same committee a month later, but had apparently modified his opinion.

Twining later speculated about the shift in LeMay's and the JCS' position "they didn't want to sign, any of them, oh no, but the pressure was on them and on them, and finally, this was an out, I guess—'political considerations are overriding.'"<sup>92</sup> In other words, their military opinion and expertise were overridden by McNamara's political requirements.

Despite this change, LeMay had not entirely changed his views. Although he and the Joint Chiefs were now in favor of the treaty, that support was contingent on four conditions. The United States must continue a vigorous underground testing program, maintain national labs for continued scientific research, make preparations to ensure speedy resumption of atmospheric testing, and vigorously develop "national technical means" to verify Soviet compliance.<sup>93</sup> If, and only if, the US met these requirements could the political benefits of the treaty be considered to outweigh the military risks.

Even if Chief of Staff LeMay reluctantly agreed to the treaty, SAC Commander General Thomas Power did not. In his testimony before the same committee, he reiterated most of LeMay's earlier objections. Power also started from the belief that military superiority was the key to deterrence. In contrast to the new JCS position, he had "little confidence that we can and will maintain that military superiority under the test ban treaty than . . . under a condition in which we do not have a test ban treaty."<sup>94</sup> America's current military superiority would be endangered by the treaty because of a number of unknowns that could only be adequately answered through testing. Specifically, he wanted to test high-yield weapons and perform a full test (including nuclear detonation) with an ICBM reentry vehicle.<sup>95</sup> Like LeMay, he also believed the Soviets had not changed their basic unreliability. For example he believed that, even if the Soviets kept within the stated boundaries of the treaty, they could still arrange to conduct tests in the People's Republic of China.<sup>96</sup> Ultimately, Power stated that, "We have had overwhelming superiority, and whenever somebody examined the feasibility of attacking the United States, they immediately had to reject it because it was ridiculous. I think that is a sound position to hold if you can."<sup>97</sup>

Both LeMay and Power assumed positions consistent with Air Force policy developed over the previous decade. A test ban without adequate verification would jeopardize the technological edge required for a superior deterrent. Against an implacable and demonstratedly untrustworthy Soviet opponent, the American deterrent, and hence national security, would be in grave jeopardy.

## CONCLUSION

Fewer than ten years later, the Air Force took a decidedly more engaged role in the Strategic Arms Limitation Treaty negotiations. What led to that change? Most importantly, Air Force leadership had passed from the “senior World War II” bomber generals to more junior—and more flexible—leaders. Whether they embraced—or were simply resigned to—arms control is less relevant than the fact that they cooperated with the new initiatives. Changing personalities were matched by a changing strategic balance. The American quantitative lead in 1963 had eroded to rough parity by 1972. Even had the Twinings and LeMays still held sway over the Air Force, there was no longer a superiority to maintain. Finally, and perhaps in the end most stabilizing, maturing reconnaissance technology provided reliable means of verifying Soviet compliance to a degree not remotely possible in the 1950s.

Nonetheless, Air Force resistance to arms control and disarmament in the 1950s and early 1960s took place in a decidedly more threatening and uncertain world than that of détente a decade later. The first steps toward stabilizing the arms race had to be taken in a dark environment where only an enemy perceived to be inherently untrustworthy had, in the minds of the Air Force’s senior leadership, only been held back by the overwhelming force of Strategic Air Command. They firmly believed that maintaining that force was the only way to keep the Free World intact. As Power said before the Senate Armed Services committee, “the surest way to cause a war, nuclear war or any war, is to disarm. . . .”<sup>98</sup>

## NOTES

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<sup>2</sup> Meeting with representatives of HQ AF/XONP, 15 March 2001.

<sup>3</sup> National Archives and Records Administration, College Park, Maryland, Record Group 341, “The Process of Long Range Planning,” presentation to the RAND Corporation Directors by Captain Wesley W. Posvar, 17 May 1955, 3.

<sup>4</sup> Col Mike Worden, USAF, *Rise of the Fighter Generals: The Problem of Air Force Leadership, 1945-1982* (Maxwell Air Force Base, Alabama: Air University Press, 1998), 1.

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- <sup>5</sup> Ibid., 11-12.
- <sup>6</sup> Richard Smoke, *National Security and the Nuclear Dilemma* 3<sup>rd</sup> ed. (New York: McGraw-Hill, 1993), 129.
- <sup>7</sup> Eisenhower Library, Office of the Special Assistant to the President (OSSAN), Subject Series, Alpha Subseries, Box 11, Disarmament Vol I (9), "Memorandum for the President," The Proposed Small United Nations "Atoms for police" Force, 16 July 1956.
- <sup>8</sup> Smoke, 130.
- <sup>9</sup> Ibid., 136-7.
- <sup>10</sup> Ibid., 139.
- <sup>11</sup> Ibid., 145.
- <sup>12</sup> United States Air Force, *Air Doctrine: Strategic Air Operations, AFM 1-8* (Washington DC, 1 May 1954), 7.
- <sup>13</sup> Ibid., 5.
- <sup>14</sup> NARA, RG 341, "Statement of Air Force Tasks," Chief of Staff Decision, 6 November 1962, 1.
- <sup>15</sup> David Kunsman and Douglas Lawson, *A Primer on U.S. Nuclear Strategy* (Albuquerque, NM: Sandia National Laboratories, 2001), 105.
- <sup>16</sup> NARA, RG 341, "Air Power in Future Conflicts," 13.
- <sup>17</sup> NARA, RG 341, "Objectives and Problems of the Plans Directorate: A Presentation to Selected Members of the CIA and Guests."
- <sup>18</sup> NARA, RG 341, "Classen Committee Study: A Presentation to Logistic Planners Conference," 6-7 October 1954.
- <sup>19</sup> Ibid, 9.
- <sup>20</sup> NARA, RG 341, "The Nature of Future Warfare," 17 September 1954.
- <sup>21</sup> NARA, RG 341, "Presentation at the 1955 Secretaries' Conference by General Nathan F. Twining, Chief of Staff, USAF, HQ USAF, 16 July 1955," 16.
- <sup>22</sup> Eisenhower Library, OSSAN, Subject Series, Alphabetical Subseries, Box 2, Air Force (7), "A National Military Policy," AF/XPD, 1960 (otherwise undated).
- <sup>23</sup> NARA, RG 341, "Presentation by Colonel J. L. Dickman to the Directors of the RAND Corporation," 10.
- <sup>24</sup> Lindsay, "Air Power in Future Conflicts," 22.
- <sup>25</sup> NARA, RG 341, "Briefing by Major General Lindsay to Deputy Secretary of Defense Anderson on Air Force Concepts," 3-4.
- <sup>26</sup> Twining, Secretary's Briefing, 6.
- <sup>27</sup> Conrad Crane, *American Airpower Strategy in Korea: 1950-1953* (Lawrence: University of Kansas Press, 2000), 85-90.
- <sup>28</sup> NARA, RG 218, JCS 1731/326, "Meeting of the Joint Chiefs of Staff with Mr. Coolidge, Special Advisor for Disarmament Policy Review," 21 December 1959, 2935.
- <sup>29</sup> Eisenhower Library, OSSAN, Subject Series, Alphabetic Subseries, Box 11, Disarmament Volume 1 (5), memorandum from the Joint Chiefs to the Secretary of

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Defense, "Progress Report on the Control of Armaments by the Special Assistant to the President on Disarmament," 26 June 1955, 6.

<sup>30</sup> NARA, RG 341, Memorandum for Deputy Chief of Staff/Development, "(Restricted) Satellite Vehicles," 18 December 1952, 1.

<sup>31</sup> Eisenhower Library, Norstad Papers, Box 98, Chief of Staff (I), "NWC and ICAF Lecture," 12 December 1961, 13.

<sup>32</sup> NARA, RG 341, "USAF Space Required Operational Capabilities," 16 September 1960, 1-2.

<sup>33</sup> NARA, RG 341, "Review of USAF Space Plan," September 1961, 5-6.

<sup>34</sup> NARA, RG 341, "Remarks by Lt Gen FF Everest, Deputy Chief of Staff, Operations, to the Commanders Conference on 'USAF Force Structure and Program Objectives 1957-1965,'" 17 January 1955, 3.

<sup>35</sup> Air Force Historical Research Agency, Brigadier General RC Richardson Papers, 168.7010-1 through 44, "The Fallacy of the Concept of Minimum Deterrence," undated, AFXPD-LR, 3.

<sup>36</sup> Ibid.

<sup>37</sup> Ibid., 4.

<sup>38</sup> Ibid., 5.

<sup>39</sup> Ibid., 6.

<sup>40</sup> Ibid., 7.

<sup>41</sup> Ibid., 12.

<sup>42</sup> Air Force Historical Research Agency, Brigadier General RC Richardson Papers, 168.7010-1 through 44, "An Analysis of the Fallacy of the Concept of Graduated Deterrence," 29 March 1962, AFXPD-LR, 1.

<sup>43</sup> Ibid.

<sup>44</sup> AFHRA, Richardson, Minimum Deterrent, 4.

<sup>45</sup> Ibid., 5.

<sup>46</sup> Air Force Historical Research Agency, Brigadier General RC Richardson Papers, 168.7010-1 through 44, "On Counterforce," 1 December 1960, AFXPD-LR, 5-6.

<sup>47</sup> Eisenhower Library, OSSAN, Subject Series, Alphabetical Subseries, Box 11, Disarmament Volume 1 (5), Memorandum for the Secretary of Defense, "Progress Report on the Control of Armaments Made to the President and the National Security Council by the Special Assistant to the President on 26 May 1955," 4.

<sup>48</sup> Eisenhower Library, "Progress Report," 5-8.

<sup>49</sup> NARA, JCS 1731/256, 2936.

<sup>50</sup> Eisenhower Library, "Progress Report," 3-4.

<sup>51</sup> NARA, JCS 1731/256, 2935.

<sup>52</sup> Eisenhower Library, Ann Whitman File, Administrative Series, Box 23, JCS Folder, Memorandum for the Secretary of Defense from the Joint Chiefs, "Negotiations with the Soviet Bloc," 23 June 1954, 3.

<sup>53</sup> NARA, RG 341, "Air Power in Future Conflicts," 5.

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- <sup>54</sup> Eisenhower Library, Ann Whitman File, Administrative Series, A-75-22, Box 37, Twining Folder, “Arms Control Proposals and Your Speech at the United Nations 22 September 1960,” 15 September 1960, 3.
- <sup>55</sup> Eisenhower Library, OSSAN, “Progress Report”, 3.
- <sup>56</sup> Eisenhower Library, Ann Whitman Series, “Negotiations with the Soviet Bloc,” 4.
- <sup>57</sup> Eisenhower Library, Ann Whitman Series, “Arms Control Proposals and Your Speech,” 2.
- <sup>58</sup> Eisenhower Library, OSSAN, Title Illegible, 4.
- <sup>59</sup> Eisenhower Library, Norstad Papers, Box 41, Eyes Only—Folder 28, Memorandum for General Burns, 25 June 1953.
- <sup>60</sup> Eisenhower Library, Ann Whitman Series, DDE Diary, Box 15, May 1956 Goodpaster, Memorandum of Conference with the President, 24 May 1956, 10:30 AM.
- <sup>61</sup> Ibid.
- <sup>62</sup> Worden, 112.
- <sup>63</sup> Ibid., 112-3.
- <sup>64</sup> Ibid., 121.
- <sup>65</sup> Ibid., 135.
- <sup>66</sup> Ibid., 148.
- <sup>67</sup> Ibid., 116.
- <sup>68</sup> Ibid., 115.
- <sup>69</sup> Eisenhower Library, Norstad Papers, Box 142, U.S. Air Force Oral History, General Lauris Norstad, Part II, 312-3.
- <sup>70</sup> Curtis LeMay, *America Is In Danger*, (New York: Funk and Wagnalls, 1968), 276.
- <sup>71</sup> Ibid., 277.
- <sup>72</sup> Air Force Historical Research Agency, USAF Oral History Interview, K239.0512-834, Lt General Fred Dean, 25 February 1975, 256-7.
- <sup>73</sup> Ibid., 288-90.
- <sup>74</sup> Albert Carnesale and Richard Haas, *Superpower Arms Control: Setting the Record Straight*, (Cambridge: Ballinger, 1987), 9-11.
- <sup>75</sup> Eisenhower Library, Oral Interview with General Nathan F. Twining, #4 of 4, by John T. Mason, Columbia University Oral History Project, OH-274, 236-7.
- <sup>76</sup> Ibid., 237-8.
- <sup>77</sup> Carnesale, 12-3.
- <sup>78</sup> Ibid., 9.
- <sup>79</sup> Smoke, 136.
- <sup>80</sup> United States Senate, Committee on Foreign Relations, Test Ban Negotiations and Disarmament, (Y4.f76/2:t28), 11 March 1963, 3.
- <sup>81</sup> Ibid., 4-5.
- <sup>82</sup> Ibid.
- <sup>83</sup> Ibid.

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<sup>84</sup> United States Senate, Committee on Armed Services, Military Aspects and Implications of Nuclear Test Ban Proposals and Related Matters, (Y4.Ar5/3:N88/pt2), 734.

<sup>85</sup> Y4.Ar5/3:N88/pt1, 352.

<sup>86</sup> Ibid., 353.

<sup>87</sup> Ibid., 355.

<sup>88</sup> Ibid., 356.

<sup>89</sup> Ibid., 378.

<sup>90</sup> Ibid.

<sup>91</sup> Ibid., 356.

<sup>92</sup> Twining Oral, 239.

<sup>93</sup> Carnesale, 28.

<sup>94</sup> Y4.Ar5/3:N88/pt2, 779.

<sup>95</sup> Ibid., 781.

<sup>96</sup> Ibid., 796.

<sup>97</sup> Ibid., 788.

<sup>98</sup> Ibid., 810.

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