

CHART 7

RATINGS BY HQ ARADCOM IN  
ANNUAL GENERAL INSPECTIONS OF  
NIKE HERCULES MISSILE BATTERIES AND  
BATTALION HQ AND HQ BATTERIES  
FY 1967

 ARNG (65 INSP)       ACTIVE ARMY (78 INSP)

ADJECTIVAL RATING	PERCENTAGE OF RATINGS					% COMPONENT
	0	20	40	60	80	
SUPERIOR	 62.7					64.6
	 37.3					32.1
EXCELLENT	 27.5					29.2
	 72.5					64.1
SATISFACTORY	 57.1					6.2
	 42.9					3.8
UNSATISFACTORY	- NONE -					0.0
	- NONE -					0.0

Source: DA Forms 854, Report  
of AGI, and ARADCOM IG  
Briefing Chart for FY  
1967, on File in the  
Office of the Inspector  
General, Hq ARADCOM.

compliance with not only Department of the Army and ARADCOM regulations, but National Guard regulations as well--an area of potential vulnerability which does not jeopardize active Army units. For purposes of equitable comparison, however, the fact that AGIs of ARNG units are conducted by an ARADCOM team whose members inspect only ARNG units is a more serious handicap than these differences in scope: a common instrument for the measurement of both components is lacking.

Thus, a comparative interpretation of AGI statistics cannot escape the "apples-and-oranges" syndrome; but whether it is the active Army or ARNG component of ARADCOM which suffers the most from this ailment is a matter for debate.<sup>15</sup>

In the light of these limiting qualifications, the pronounced statistical superiority of Guard performance in AGIs cannot be viewed as conclusive. Nonetheless, the fact that there is much common ground covered in AGIs of the two components means that ARNG performance can rightfully be viewed with considerable respect.

The records upon which Chart 7 is based go back only to the beginning of FY 1967. This is because prior to that time, AGIs of the ARNG's air defense units were conducted by DA, rather than by Hq ARADCOM.

## REDCON (Readiness Condition)

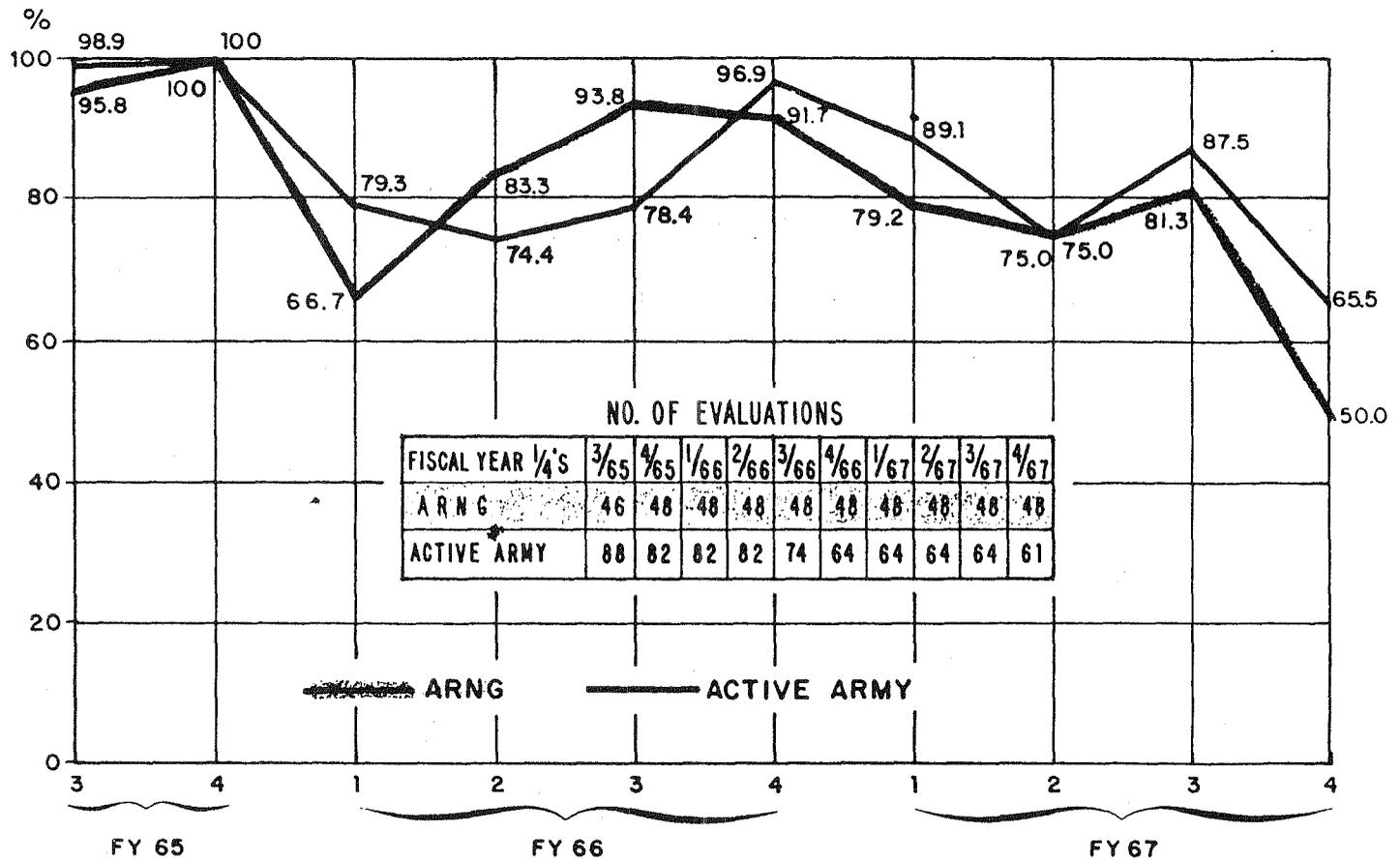
As set forth in Army regulations, the primary objectives of the Army readiness system are, "to insure that each unit has its authorized personnel with the required skills available for duty; that its authorized equipment is on hand and maintained in an operational condition; that its needed supplies are on hand; and that each unit is maintaining a state of training which will permit accomplishment of the mission reflected in the authorization document under which it is organized."<sup>16</sup>

The quarterly Unit Readiness Report is a basic tool of this system, "a means for commanders to identify problem areas in personnel, training, and logistics where command emphasis and/or corrective action may be required."<sup>17</sup> Given the unremitting operational mission of ARADCOM's active Army and ARNG units, as well as the complexity of air defense materiel and techniques, these reports take on more than routine significance.

Reporting criteria are summarized in Appendix I. In light of these criteria, each ARADCOM battery commander evaluates his own unit, forwarding the quarterly report to his next two higher commanders, who might be able to correct shortcomings by reallocation of the resources available to them. However, it is the Readiness Condition (REDCON) reported by the battery commander (from a possible spectrum of REDCON C1 through a low of REDCON C4) which forms the basis for the

CHART 8

PERCENTAGE OF ARADCOM NIKE HERCULES FIRE UNITS  
 EVALUATED AT READINESS CONDITION C1 IN TRAINING  
 BY UNIT COMMANDERS IN QUARTERLY UNIT READINESS REPORTS  
 3D QTR FY 1965 - FY 1967  
 (WITH NUMBERS OF UNITS EVALUATED)



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Source: DA Forms 2715, Unit  
Readiness Report,  
FY 1965-1967, on File  
in Directorate of  
Operations and Training,  
DCSOPS, Hq ARADCOM.

reports of Hq ARADCOM to DA, as well as for Charts 8 and 9.

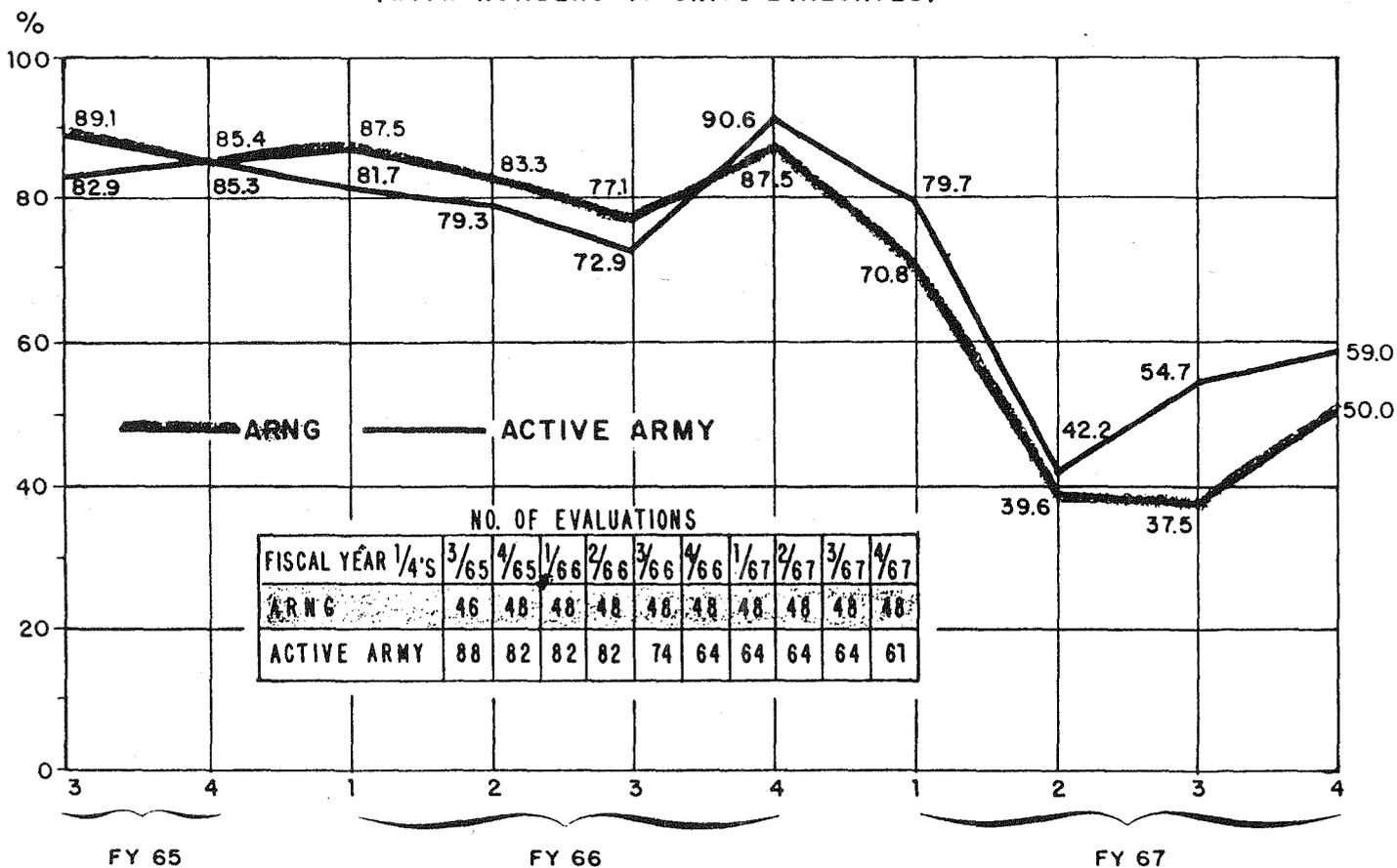
Although the DA and ARADCOM regulations on unit readiness are equally applicable to the command's active Army and ARNG components, a fair basis for comparison of the REDCON standards achieved by the two components requires some juggling.

Specifically, comparison of Personnel REDCON has been avoided, as the criterion for C1 in this area specifies a ratio of 95 percent operational strength to full TOE strength. Because ARNG fire units have until very recently been authorized only 85 percent of TOE strength, it has obviously been impossible for ARNG Task Organization units to achieve C1 ratings in Personnel REDCON. Comparison of component REDCONs has therefore been limited to the areas of training and logistics. In further refining the basis for comparison, battalion headquarters and headquarters batteries have been eliminated from consideration, as ARNG units of this type, unlike their active Army counterparts, currently have no tactical mission.

The REDCON charts therefore reflect only the percentage of Nike Hercules fire units<sup>18</sup> reporting the coveted C1 in training and logistics. Fortunately, the ARADCOM REDCON program was initiated almost concurrently with completion of the Guard's conversion to the Hercules system, thus providing an equitable materiel basis for comparison.

CHART 9

PERCENTAGE OF ARADCOM NIKE HERCULES FIRE UNITS  
 EVALUATED AT READINESS CONDITION C1 IN LOGISTICS BY  
 UNIT COMMANDERS IN QUARTERLY UNIT READINESS REPORTS  
 3D QTR FY 1965-FY 1967  
 (WITH NUMBERS OF UNITS EVALUATED)



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Source: DA Forms 2715, Unit  
Readiness Report, FY  
1965-1967, on File in  
Directorate of Operations  
and Training, DCSOPS, Hq  
ARADCOM.

Analysis of the Training REDCON chart reveals only four statistically significant differences in a total of 10 reporting periods: the second and third quarters of FY 1966, and the first and fourth quarters of FY 1967. These four differences are evenly divided between the favorable 1966 and adverse 1967 ledgers of the ARNG Training REDCON account. The Logistics REDCON graph, Chart 9, yields two statistically significant differences, the third and fourth quarters of FY 1967. Both of these are adverse to the Guard.

In light of these few and relatively narrow differences, the conclusion is inescapable that the readiness conditions of ARADCOM's active Army and ARNG fire units have not materially differed, except in the field of logistics, since the inception of ARADCOM's current readiness reporting system.

#### DCE (Defense Combat Evaluation)

The Defense Combat Evaluation (DCE) is a relatively recent training and evaluation device, application of which dates only from the beginning of FY 1967. The primary aim here is to determine the ability of each of ARADCOM's 18 defenses to "protect (their) areas of responsibility from

hostile air attack in a realistic combat environment."<sup>19</sup>

Each defense is evaluated as an entity, with considerable weight assigned to the performance of the defense commander and his battle staff, as well as to each of the subordinate fire units of the defense. The Air Defense Artillery Director (ADAD) positions within the Direction Centers and Control Centers of the NORAD command and control system can also be evaluated,<sup>20</sup> as DCEs are invariably held in conjunction with NORAD exercises.

Although for obvious reasons no live missiles are fired, the use of missile-simulation equipment against NORAD "faker" aircraft, which employ electronic countermeasures (ECM) and often stage multiple "attacks," permits realistic evaluation of the defense's ability to prevent hostile aircraft from reaching their all-important bomb release lines (BRL). Enhancing this realism is the vigorous nuclear and CBR play-- which often features actual use of tear gas against personnel in command and control installations as well as fire units.

Because of the weight assigned to Defense command-and-control and ADAD performance and the fact that ARNG personnel are not yet assigned such functions, neither these areas nor the overall DCE score offer equitable basis for comparison of ARNG and active Army performance in DCEs. Only the composite fire-unit scores, which combine evaluations of

operational status with less heavily weighted scores for performance against "enemy" nuclear and CBR attack, provide this basis. It is these scores which are reflected in Chart 10.

Because each defense was, as of late 1967, evaluated twice yearly--once by Hq ARADCOM and once by the appropriate Region headquarters--each ARADCOM fire unit was thus evaluated with identical frequency. Chart 10 reflects only the performance of fire units evaluated by Hq ARADCOM.

This chart presents a picture decidedly less favorable to the ARNG than is the case with the other types of evaluations analyzed to this point. To be more specific, the difference between component performance as reflected by the percentage of fire units bleakly rated as "not combat-ready," although not by average scores, is statistically significant and indicates active Army superiority.

The disturbing fact is that in FY 1967 the DCE performance of both components fell far short of the standards expected by ARADCOM, and attained by fire units in other types of evaluations. Given the realism and importance of the DCE as a yarkstick of ARADCOM's combat readiness, a

CHART 10

SALIENT FACTORS AND RESULTS OF  
DEFENSE COMBAT EVALUATIONS (DCE)  
OF NIKE HERCULES FIRE UNITS  
BY HQ ARADCOM, FY 1967

NO. ARNG      NO. ACTIVE ARMY

F A C T O R	ACTIVE ARMY	ARNG
NUMBER OF FIRE UNITS EVALUATED	61	45
NUMBER OF FIRE UNITS NOT COMBAT-READY	19	20
% FIRE UNITS NOT COMBAT-READY	31.1	44.4
HIGH SCORE	98.0	97.4
LOW SCORE	24.1	27.5
AVERAGE SCORE	70.9	65.5

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Source: ARADCOM Forms 216, Defense  
Combat Evaluation Recapitu-  
lation, FY 1967, on File in  
Directorate of Evaluations,  
DCSOPS, Hq ARADCOM.

word of explanation for this shortfall is required.<sup>21</sup>

Part of the difficulty stemmed from the growing pains which invariably occur in the early phases of any new program. Here it is well to remember that the DCE was initiated as recently as the beginning of FY 1967; and it is heartening to note that the DCE performance of fire units of both components showed marked improvement in early FY 1968.<sup>22</sup>

Unquestionably, a major reason for the disturbing rate of failures and relatively low fire-unit scores experienced in DCEs is the sheer duration of the exercise. Unlike an ORE, which normally takes only  $3\frac{1}{2}$  hours, a DCE normally extends over 48 hours. This extended duration places far more demands upon both personnel and equipment than is the case with SNAPs or OREs. During a DCE a fire unit is required to assume an advanced state of alert at least four times, sometimes even 10 or 12 times; and the chances of equipment failure at critical moments, another heavily scored area of performance, are also greatly increased by the demanding duration of the DCE. The requirement for a fire unit to operate autonomously (not only, as in OREs, as a subordinate element of an integrated defense) also revealed that fire-unit personnel were initially, and understandably, somewhat less expert in target identification than the specialists of the AADCP.

As for the statistically significant difference between active Army and ARNG performance in DCEs in FY 1967, a major explanatory factor was the initial lack of emphasis accorded this innovative evaluation by Guard commanders: it was not until the summer of 1967, for example, that a State Adjutant General first requested to be informed of DCE results.<sup>23</sup> Increased command emphasis, at any rate, was producing salutary results in FY 1968. By March of 1968 the Guard had reversed the pattern of the preceding year, achieving a statistically significant lead over ARADCOM's active Army component in percentage of combat-ready units as well as average score for fire units.<sup>24</sup>

#### CMMI (Command Maintenance Management Inspection)

The Command Maintenance Management Inspection (CMMI) is another area in which the performance of ARNG Task Force units is significantly below that of the active Army fire units in ARADCOM. And the fact that there is, in this instance, a fairly serious case of the "apples-and-oranges" statistical syndrome serves to enhance, rather than minimize, the relative superiority of active Army units in this area.

The ARADCOM regulation on CMMIs is equally applicable to active Army and ARNG units, and prescribes the same

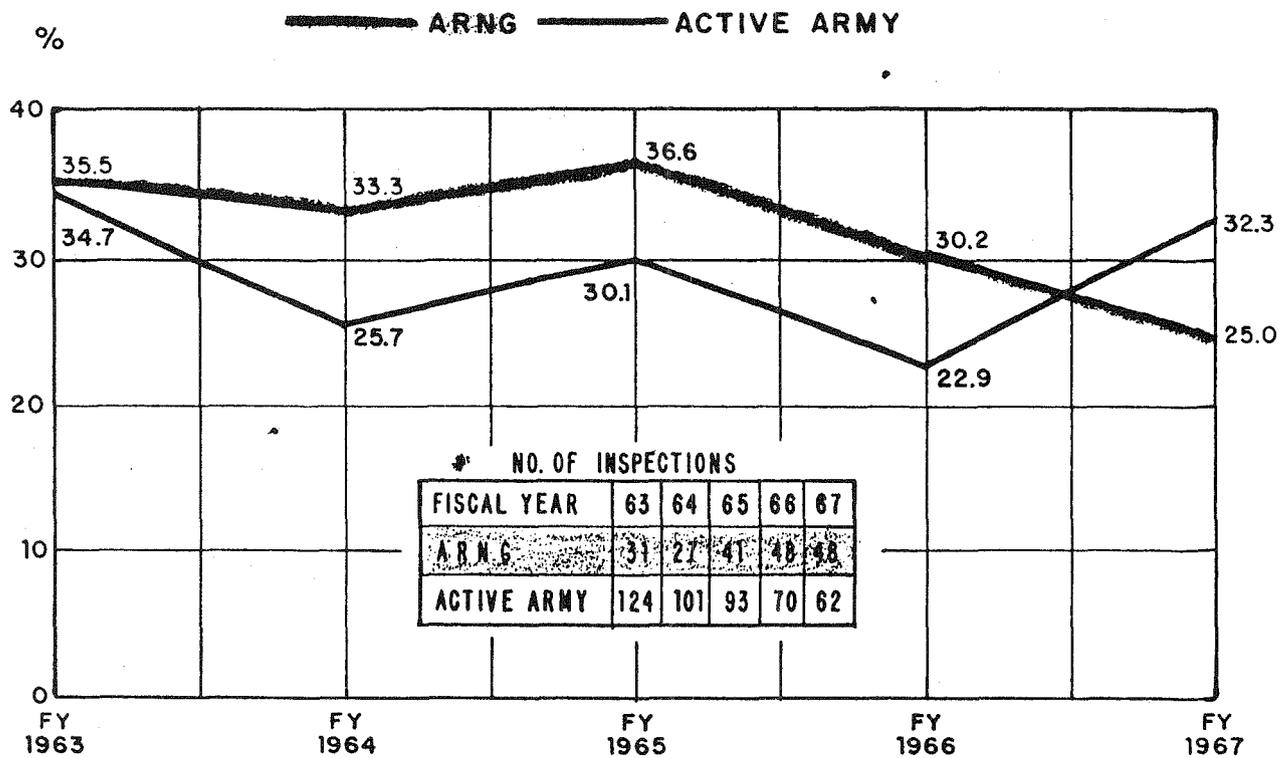
objective: "To provide the commander an overall indication of the status of materiel and maintenance management and operations in his subordinate units."<sup>25</sup> There nonetheless have been, and continue to be, significant differences in the conduct and scope of the inspections, which normally take a large team consisting of some dozen to as many as 26 members about eight hours to complete.

Specifically, the ARADCOM regulation on CMMIs provides for greater leniency in notification, recommending to the Region commanders responsible for conduct of the inspections that the "maximum notification (of six hours) be reserved (italics added) for selected ARNG batteries which because of known extenuating circumstances cannot meet the requirement with a lesser time notification."<sup>26</sup> Active Army units, which do not benefit from such reservation, are thus more often subject to a "minimum (no-notice) notification."<sup>27</sup> CMMIs of active Army and ARNG fire units also differ in scope: ARNG vehicles and small arms, being State-owned, are not subject to active Army inspection.<sup>28</sup>

Maintenance differences in weapon systems bestowed, during the period FY 1963-1965, an even greater advantage upon the ARNG. As pointed out in 1963 by Brig. Gen. John D. Stevens, CG of ARADCOM's 35th Brigade, the active Army's

CHART 11

PERCENTAGE OF NIKE FIRE UNITS  
 RATED AS UNSATISFACTORY IN  
 COMMAND MAINTENANCE MANAGEMENT  
 INSPECTIONS BY ARADCOM REGIONAL HQS  
 FY 1963-1967  
 (WITH NUMBERS OF UNITS INSPECTED)



Source: ARADCOM Forms 27, Command  
Maintenance Management In-  
spection, on File in Directorate  
of Materiel Readiness, DCSLOG,  
Hq ARADCOM.

"Nike Hercules system of 1963 with its (numerous) modifications" was "a very complex system from any viewpoint," and the axiom that "as sophistication occurs maintainability does not stay abreast with it" operated to produce, of six "distinguished maintenance" fire units in 1st Region for FY 1963, five ARNG Ajax units and only one active Army Hercules unit.<sup>29</sup>

Bearing such factors in mind, the active Army superiority reflected by Chart 11 is more clear-cut than the marginal differences indicated by the statistics, all of which are significant except those shown for FY 1963, would appear to indicate.

These statistics are limited to the period FY 1963-1967. Although CMMIs of active Army and ARNG fire units go back at least as far as CY 1961,<sup>30</sup> the earliest records on file in Hq ARADCOM go back only to FY 1963. Because ARNG battalion headquarters and headquarters batteries are subject to CMMIs conducted by the States rather than by ARADCOM, the statistics compare only the fire units of the ARNG and active Army.

#### TPI (Technical Proficiency Inspection)

In the area of the Technical Proficiency Inspection (TPI) ARNG performance is even less impressive than it is in

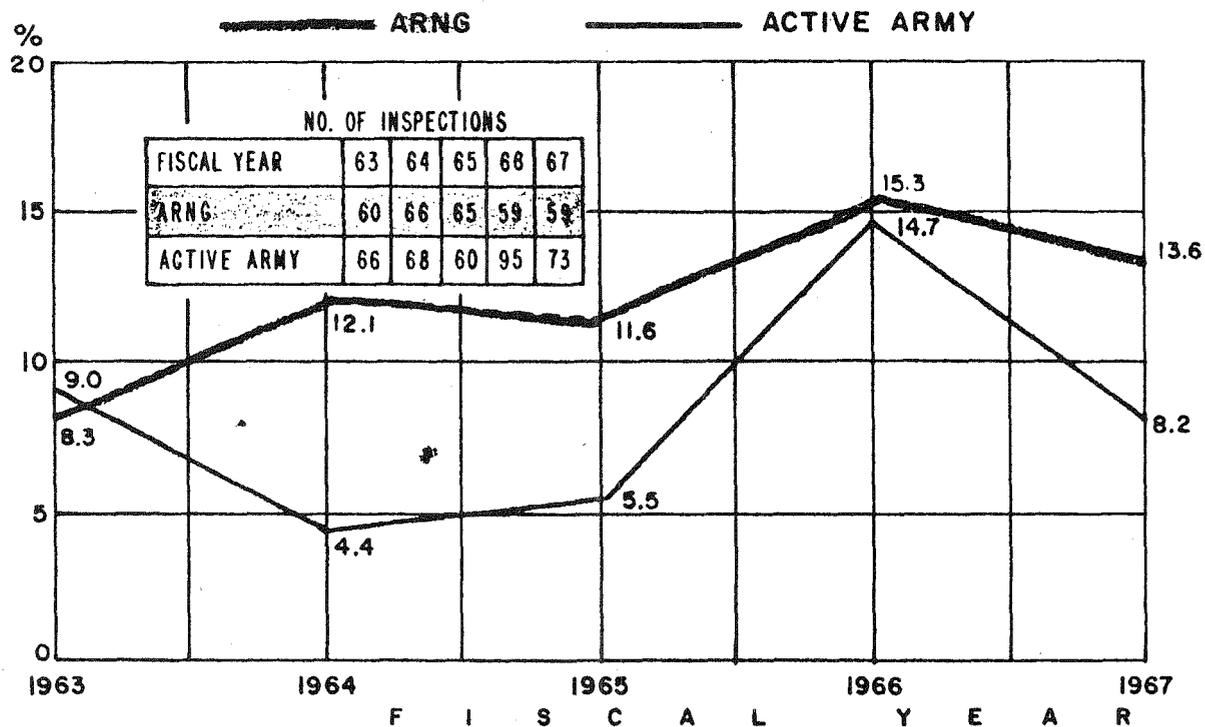
the case of the CMMI. Considering the nature and objectives of the TPI, this fact is particularly disquieting.

Reflecting "continuing concern, at national level, over the security, control and safety aspects of nuclear weapons operations,"<sup>31</sup> the primary objective of the TPI is to "insure high standards of performance in all operations involving nuclear weapons through strict adherence to prescribed procedures in accomplishing mission requirements."<sup>32</sup> The broad scope of the inspection is implicit in this objective, and its thoroughness is suggested by the fact that it takes a team composed of a lieutenant colonel and two warrant officers two full working days to complete the TPI of an ARADCOM fire unit, regardless of component.

All ARADCOM fire units are subject to an annual TPI, either by a team from the Office of the Inspector General (IG), ARADCOM, or from the IG, Department of the Army. Although ARADCOM units are also subject to Technical Standardization Inspections (TSI) by the Defense Atomic Support Agency (DASA), such inspections do not meet the annual TPI requirement, as evaluation of crew proficiency in the launching area of the Nike Hercules system, as well as detailed ready-weapon inspections, are not conducted in DASA's TSI.<sup>33</sup> In Chart 12, TPIs of the active Army custodial teams assigned to ARNG Task Force units are similarly excluded from

CHART 12

PERCENTAGE OF UNSATISFACTORY EVALUATIONS IN  
 TECHNICAL PROFICIENCY INSPECTIONS OF  
 ARADCOM NIKE HERCULES MISSILE BATTERIES  
 BY HQ ARADCOM AND DEPARTMENT OF THE ARMY  
 FY 1963-1967  
 (WITH NUMBERS OF INSPECTIONS)



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Source: ARADCOM Forms 1059, "TPI  
Report Status", on File in  
the Office of the Inspector  
General, Hq ARADCOM.

consideration, as they obviously offer no basis for comparison with ARNG performance. Although records of TPIs conducted prior to FY 1963 are in existence at Hq ARADCOM, only the records of inspections conducted by Hq ARADCOM and DA from the beginning of FY 1963 have been used for this graph, as it was in that year that the earliest recorded ARADCOM TPI for an ARNG unit took place.<sup>34</sup> It should be noted that the numbers of inspections shown include re-inspections of unsatisfactory units and of five percent of all ARADCOM Hercules units, whether initially satisfactory or unsatisfactory. About 15 percent of the inspections shown were conducted by DA, rather than by ARADCOM.

Analysis of the TPI chart yields results which are significant and adverse to the ARNG. In the three years in which statistically significant differences exist between ARNG and active Army performance--FY 1964, 1965, and 1967--the comparison is unfavorable to the Guard.

The reasons for this ARNG shortfall are far less obvious than its existence. In 1964, Lt. Gen. Charles B. Duff, then CG of ARADCOM, pointed out that this weakness was particularly prevalent "in some NG units which did not have the opportunity to man Nike Ajax equipment prior to assignment with Hercules."<sup>35</sup> This was undoubtedly true at the time, but it does not explain continued ARNG weakness in this area. Moreover, a more recent diagnosis has failed to identify the

causes of this disturbing ailment.<sup>36</sup> Whatever the cause of the ailment, the personal emphasis of Lt. Gen. Robert Hackett, CGARADCOM, upon solutions to this problem was proving to be highly therapeutic as 1967 drew to a close. By mid-May of 1968, the Guard's failures had been more than halved, in sharp and statistically significant contrast to a large increase in unsatisfactory ratings of active Army units.<sup>37</sup>

### Awards and Trophies

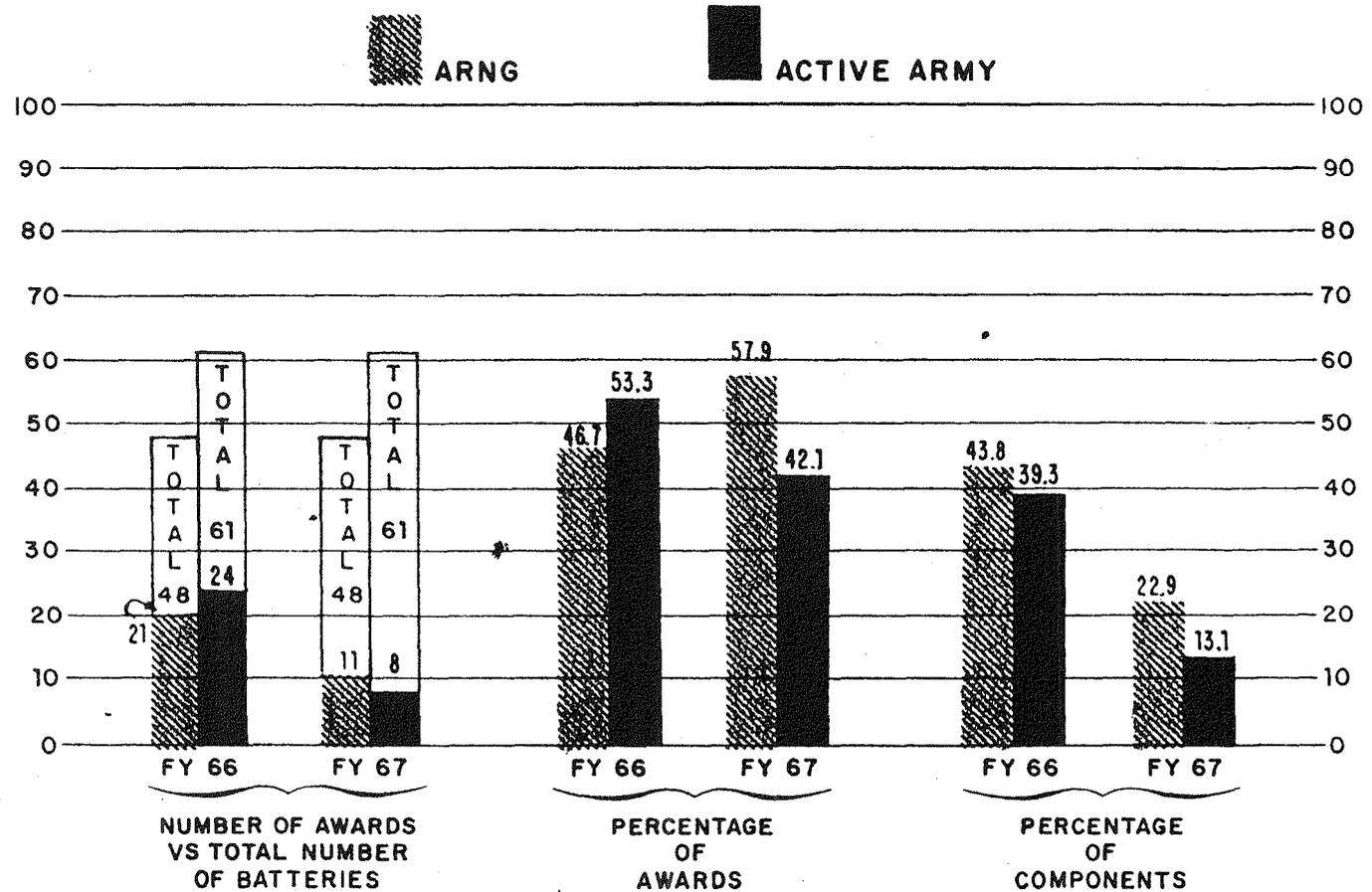
Strictly speaking, ARADCOM awards and trophies are incentives, rather than yardsticks. Nonetheless, they offer at least a "feel" for the quality of ARNG performance, especially in the area of operations.

This is particularly true of awards of the ARADCOM "E" for Excellence in Combat Proficiency, a program initiated in 1966 by Lt. Gen. Charles B. Duff, then CG of ARADCOM. The "feel" here is almost substantial enough to warrant use of the program as a yardstick applicable to all units, as only those batteries "which have had a nuclear accident/incident resulting from personnel error," or which have failed an ARADCOM TPI or SNAP, or a region-conducted ORE or CMMI,<sup>38</sup> are ineligible for award of the coveted guidon streamer.

As explained by General Duff in announcing the program

CHART 13

AWARDS OF ARADCOM "E" FOR EXCELLENCE  
IN COMBAT PROFICIENCY TO  
NIKE HERCULES MISSILE BATTERIES  
FY 1966-1967



Source: ARADCOM GO No. 236, 15 Jul 66,  
as Amended by GO No. 243, 29  
Jul 66, and GO No. 278, 8 Sep  
66; ARADCOM Argus, Sep 67, p. 1.

(initiation of which took place during an FY 1966 moratorium on award of commander's trophies), "the old awards program failed to reflect the overall high level of readiness throughout the command. Some units were nosed out by narrow margins in the competition but had exceptionally high credentials demonstrating ability to fulfill their combat missions."<sup>39</sup>

Criteria for the award require, within a given fiscal year, a missile battery to achieve satisfactory ratings in the ARADCOM TPI and SNAP; a satisfactory rating in the region-conducted CMMI; and operational ratings, to include satisfactory crew performance in both the IFC and launching areas, in all region-conducted OREs during the year.<sup>40</sup>

Chart 13 presents the results of the "E" award program from three different but interrelated viewpoints. Although statistically significant differences are not present except in one case, this one case comes under the particularly important rubric of "percentage of components" for FY 1967, and it shows the clear-cut superiority of the numerically inferior ARNG Air Defense Task Organization.

Turning to the award of trophies which are directly relevant to a missile unit's combat readiness, the comparative sample is patently restricted to a true elite of ARADCOM's large and varying troop list over the period from CY 1958, the earliest date ARNG units were eligible, through

conversion to Ajax missiles, to FY 1967.

In the case of all but two of these trophies, the nature of, and criteria for, the award are virtually self-explanatory. These two, the trophy for the "outstanding Hercules battery in ARADCOM" and the "General Robert Ward Berry Memorial Trophy" (which, strictly speaking, was not an ARADCOM Commander's Trophy), require at least brief explanation.

The Berry Trophy, a memorial to a former CG of ARADCOM's 1st Region, gave "basic consideration for eligibility" to "a demonstrated high standard of performance in the Annual Technical Proficiency Inspection conducted either by (Hq ARADCOM) or The Technical Inspection Field Office of The Inspector General, Department of the Army."<sup>41</sup> Although such other criteria as ORE and service practice standings were involved, the preliminary nominating process for this award was based exclusively upon TPI standings.<sup>42</sup>

In this light, it is not surprising that the ARNG failed to win this award throughout the trophy's life span from September 1961 to the beginning of FY 1966. For one thing, ARNG Task Force units did not become subject to TPIs until FY 1963, and the Guard's conversion to the Hercules system, the nuclear aspects of which are the subject of TPIs, was not completed until 1965. Further, as has been

demonstrated, the TPI is one of the weaker areas of Guard performance.

The ARADCOM Commander's Trophy for the "Outstanding Hercules Battery in ARADCOM," a relatively recent innovation, is awarded on the basis of outstanding performance in the three areas of TPI, CMMI, and ORE. Region commanders make the nominations, and the final competition consists of a composite evaluation in these three areas by a team from ARADCOM headquarters.<sup>43</sup>

All other types of trophies shown in the table were, or continue to be, awarded on the basis of highest numerical scores in annual service practice. Duplicate awards in the table thus reflect tie scores in these shooting-type awards, except in the case of "outstanding missile battalion" trophies for CY 1959 and CY 1960, which in those years were awarded separately to winning battalions with four or more fire units and battalions with three or less fire units.<sup>44</sup> The shift from calendar to fiscal year periods for competition<sup>45</sup> is also reflected in the table.

A word is in order regarding the table's notation of a one-year moratorium on the award of Commander's trophies during FY 1966. Behind this notation lies evidence of excessive emphasis, both at ARADCOM headquarters and in the field, upon scores and trophies--emphasis which drew

CHART 14

WINNERS OF SELECTED  
ARADCOM COMMANDER'S TROPHIES  
FY 1958-1967

██████████ ACTIVE ARMY FY 66-1-yr. Moratorium →

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T R O P H Y	CY 1958	CY 1959	CY 1960	CY 1961	FY 1962	FY 1963	FY 1964	FY 1965	FY 1967	% BY TROPHY
OUTSTANDING MISSILE BATTALION IN ANNUAL SERVICE PRACTICE	3/52	2/43 4/51	1/71 4/67							100
OUTSTANDING FIRING BATTALION IN SNAP					3/205 (WASH) 4/251 (CAL)	1/250 (CAL)	2/205 (WASH)	4/61		75 — 25
OUTSTANDING MISSILE BATTERY IN ANNUAL SERVICE PRACTICE		A/3/43	A/4/562							100
OUTSTANDING FIRING BATTERY IN SNAP					C/1/202 (ILL.)	D/4/251 (CAL)	C/1/241 (MASS) B/2/126 (WIS)	A/1/60	C/4/251 (CAL)	83.3 — 17.7
GENERAL ROBERT WARD BERRY MEMORIAL TROPHY				B/1/562	A/1/71	D/1/62	D/3/65	A/1/60		100
OUTSTANDING HERCULES BATTERY IN ARADCOM									B/1/250 (CAL)	100
% BY YEAR	100	100	100	100	75 — 25	66 2/3 — 33 1/3	75 — 25	100	100	

Source: ARADCOM Argus, Jan 60, p. 1;  
Mar 60, p. 1; Feb 61, p. 1; Nov  
61, p. 1; Aug 62, p. 1; Sep 62,  
p. 1; Aug 63, pp. 1-2; Aug 64,  
pp. 1,3; Aug 65, pp. 1,3; Jul  
67, p. 3; Sep 67, p. 1, all on  
File in Office of the Information  
Officer, Hq ARADCOM.

"unfavorable comments from within and from outside ARADCOM" and "informal comments from the General Accounting Office" that "changes might be required in evaluating units in order to place emphasis on training and unit proficiency rather than on scores from one-time evaluations."<sup>46</sup>

General Duff's corrective action included not only the FY 1966 moratorium on award of trophies and initiation of the "E" award program previously described, but the sharp reduction in the number of trophies reflected by the current ARADCOM regulation. Of particular interest to this study is the fact that none of the criteria for award of presently authorized ARADCOM Commander's trophies makes any official distinction between ARNG and active Army components of the command,<sup>47</sup> thus furthering the "One-Army" concept in an important field of unit endeavor.

The splash of red ARNG notations in Chart 14 is indicative of growing Guard domination in this field of trophy collection, and the trend showed no signs of faltering in FY 1968. Recent examples of continued ARNG strength include Battery "B" of the 3rd Battalion, 128th Artillery (Missouri ARNG), which attained a perfect, 100-percent score in its SNAP on 15-22 October, 1967;<sup>48</sup> and Battery "B" of the 1st Battalion, 137th Artillery (Ohio ARNG), which on 29 September 1967 attained the only perfect score (zero-point



ARADCOM'S BEST HERCULES BATTERY,  
1967: Lt. Gen. Robert Hackett  
presents the trophy to Capt.  
James R. Vanderveen, Commanding  
Officer of California's Battery "B",  
1st Missile Battalion, 250th Artillery

loss), plus superior IFC and launcher crew performance, in the history of OREs.

### An Overall Assessment

Based upon the foregoing application of all these yardsticks and indicators, it now becomes necessary to essay an answer to a question of importance not only to this study, but, knowingly or unknowingly, to 200 million Americans: In the performance of its on-site air defense mission, how good is the Army National Guard?

The answer to this key question must unavoidably be somewhat impressionistic, rather than purely statistical in nature. Many of the statistics scrutinized in this study are nonadditive: for example, CMMI results are reflected in REDCON ratings, and ORE, SNAP, CMMI, and TPI results directly affect the award of "E" guidons for excellence in combat proficiency. Merely to tote up an algebraic sum of statistical results would be not only simplistic, but rank evasion of responsibility for historical judgment, and the result of even a computerized reckoning of pluses and minuses would be statistically false.<sup>49</sup>

Nevertheless, these data provide substantial and indispensable support for this overall conclusion: the results

of operational-type tests and evaluations conducted by Hq. ARADCOM clearly indicate that, in this area, the performance of ARNG Task Organization units is on balance superior to that of their active Army counterparts. In the areas of general maintenance and nuclear surety, on the other hand, the level of their performance has on average been below that of ARADCOM's active Army units.

There will in all likelihood be those, of both components, who will question these findings. To such questions, the only currently practicable answer is this study itself, including the methodology behind its findings. Unfortunately, there are no other known studies which might serve as a basis for comparison and possible challenge.

#### The Factor of Personnel Turbulence

Beyond doubt, a major factor underlying Guard superiority in several aspects of air defense performance is the greater degree of personnel stability within the ARNG Task Organization, a stability which stands in sharp contrast to the personnel turbulence in the active Army ranks of ARADCOM.

To a greater degree than is the case with many other types of combat organizations, the overall effectiveness of

an air defense missile unit can be drastically degraded (or enhanced) by the individual performances of relatively few specialists. Whether or not an entire fire unit delivers effective fire--or any fire at all--can depend completely upon a single radar operator. A few seconds of indecision on the part of a Battery Control Officer can permit an attacking aircraft to reach its bomb release line, thus totally negating the combat potential of the BCO's entire unit. Improper assembly or maintenance of the unit's highly complex missiles can cause similarly disastrous impotence. In the performance of functions like these, personnel turbulence hurts--even in "peacetime."

Restricted by limitations of scope and availability of data, there is no feasible way for this study to include a valid comparative analysis of personnel turbulence in the active Army and ARNG components of ARADCOM.<sup>50</sup> There is good reason, however, for believing that this disruptive phenomenon is far more prevalent within active Army units than it is within units of the ARNG Task Organization.

Personnel losses are only one factor in the complex equation of personnel turbulence, but a few authoritative estimates and spot-check statistics with respect to losses may be roughly indicative of relative turbulence among full-time ARNG air defense technicians and their active Army

counterparts. According to data provided by the States through the NGB,<sup>51</sup> technician losses during April 1965, a fairly typical month of a period prior to the active Army's massive buildup in Viet-Nam, totalled 64 personnel. During August 1967, such losses totalled 65 personnel. For the active Army, losses of enlisted men only totalled an estimated 1113 personnel during April 1965.<sup>52</sup> As a reflection of training-base requirements for the Viet-Nam buildup, ARADCOM's actual active Army losses in August 1967 totalled 1730, in enlisted men alone, 1026 of whom were levied from the command by other headquarters.<sup>53</sup>

Admittedly, these figures in no sense represent a scientific sample, nor do they provide a raw-data base for the comprehensive and detailed analysis which alone could constitute a valid comparison of personnel turbulence within ARADCOM's active Army and ARNG components. Such an analysis would necessarily include loss-gain figures, by MOS, over a period of some nine years--a task which records-retirement procedures, among the States as well as in the active Army, clearly render impracticable. However, the fragmentary loss figures given above are backed by responsible estimates that ARNG attrition rates during the Ajax era were about two percent per year, and now run no higher than 15 percent, while ARADCOM's active Army attrition rate during 1967 was

approximately 78 percent.<sup>54</sup> The effects which such mute statistics might have on the cohesiveness and performance of an active Army unit, as it undergoes measurement by the numerous yardsticks described herein, are perhaps best left to the imagination.

### The Professionalism of Technicians

At least the silhouette, if not the portrait, of a full-time Guard technician can now be sketched.

From the viewpoint of performance as well as formal terms of employment, he is a professional. Trained in the same schools as his active Army counterpart and repeatedly tested under virtually identical criteria, with his individual skill and the smoothness of his contribution to collective effort enhanced by the greater stability of his unit and job assignment, he is sometimes more professional than his active Army counterpart. Certainly, he is a far cry from the stereotype of the "comic soldier" and "weekend warrior" perpetuated in some sectors of the popular press;<sup>55</sup> paradoxically, he is far more accurately described as an air defense professional who is only a part-time Guardsman.

In her penetrating analysis of the Guard's role in politics, Martha Derthick remarks that "the greatest burden

in the life of the Guard has been the (active Army's) contempt of the professional for the amateur."<sup>56</sup> In the air defense business, there is no basis for such divisive condescension. As pointed out by Lt. Gen. Robert Hackett in a corrective letter to a publication which unaccountably described the operation of "43% of the Nike-Hercules missile sites around key cities" as an Air National Guard function,<sup>57</sup> "Army National Guard units are an integral part of the U.S. Army Air Defense Command, and we are extremely proud of their readiness and capability in the defense of this nation against air attack."<sup>58</sup>

For the acid test of a true professional is performance. If ARADCOM's yardsticks of performance are valid, there can be no reasonable doubt that the ARNG Task Force has been, and continues to be, manned by proven professionals: in only a few instances, and primarily in the area of logistics, has Guard performance been bested by ARADCOM's active Army component. And in view of the statistically demonstrable excellence of Guard performance in the operational aspects of air defense, there is good reason for confidence in the potential ability of the ARNG Task Organization to excel in meeting all other requirements of its vitally important and demanding mission.

## Notes

<sup>1</sup>Although ARADCOM has always promulgated its guidance and procedures for the ARNG on-site air defense programs in letters and regulations applying only to the ARNG, the regulations which govern the conduct of ARADCOM's evaluations and inspections apply indiscriminately to all ARADCOM units, regardless of component. Application of ARADCOM criteria in the Operational Readiness Evaluation (ORE) was, initially at least, an exception to this general rule. An Interv of 18 Oct 67 with Colonel Max E. Billingsley, Chief of ARADCOM's Office of Reserve Components, gives grounds for belief that there was a degree of leniency accorded ARNG units by ARADCOM ORE teams in the early days of the Guard's on-site Ajax program. Brig. Gen. Howard E. Michelet, now DCSOPS, Hq ARADCOM, stated in an Interv on 15 Dec 67 that when he commanded ARADCOM's 35th Brigade in 1961, intensive pre-ORE "cram courses" were conducted for the ARNG units in the brigade. However, an Interv of 30 Aug 67 with CW4 James D. Vaughn, a member of ARADCOM's ORE team throughout the period 1962-1967, yielded the categorical assurance that during this later period "there has been absolutely no difference in the application of ORE criteria to ARNG and active Army units by Hq ARADCOM." Notification and inspection procedures in the conduct of Command Maintenance Management Inspections (CMMI) can be more lenient for ARNG units than is normally the case with active Army units, but this is the result of technician manning structure and overtime restrictions rather than of a deliberate ARADCOM policy of leniency toward Guard units.

<sup>2</sup>For those readers who may be curious about the exact methodology employed, the writer's procedure for statistical interpretation of graphs showing average scores was as follows:

The standard deviation ( $\sigma$ ) of each component mean shown was computed by subtracting the score of each unit evaluated from the appropriate mean for each year shown; squaring the difference; dividing the sum of the squares by the total number of appropriate unit scores minus one ( $n-1$ ); and deriving  $\sigma$  from the square root of the resultant.

The standard deviations of differences between component means ( $\sigma_D$ ) were then determined by applying the formula

$$\sigma_D = \sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}$$

where  $\frac{\sigma_1}{\sqrt{n_1}} = \frac{\text{Standard deviation within ARNG mean}}{\sqrt{\text{Number of ARNG unit scores}}}$

and  $\frac{\sigma_2}{\sqrt{n_2}}$  = similar relationship of active Army statistics.

It should be noted that this procedure takes cognizance of, and allows for, differences in size between the ARNG and active Army groups under comparison.

Finally, the quantity  $2\sigma_D$  was applied to test, at the five-percent level, the statistical significance of differences between means for each year. Where the difference exceeds  $2\sigma_D$ , a statistically significant difference exists in that there is only one chance in 20 of random reasons for the difference: that is, the chances are 20 to one that the difference shown is a genuine difference in quality of performance. Conversely, where the difference between means is less than  $2\sigma_D$ , there is no statistically significant difference between means.

<sup>3</sup>Ltr, Chief of NGB to State AGs, 14 Jul 60.

<sup>4</sup>Record of Proceedings, Army Air Defense Conference Presented by National Guard Bureau, 7 Sep 60, p.14.

<sup>5</sup>Ibid. According to an Interv of 17 Oct 67 with Colonel Max E. Billingsley, who attended this conference as ARADCOM's representative, it was "a real chewing session."

<sup>6</sup>ARADCOM Reg 350-1-5, 2 Aug 67, sub: Operational Readiness Evaluations, para 12g.

<sup>7</sup>According to Mr. James M. Lowry, a civilian Records Analyst with the Service Practice Unit at McGregor Range, annual service practice for ARADCOM units at that range was initiated in FY 1954. Tel Interv, 13 Sep 67.

<sup>8</sup>For details of the current ARADCOM SNAP program, see ARADCOM Reg 350-3, 5 Jan 67, sub: Conduct of Short Notice Annual Practice.

<sup>9</sup>See para 2b, Appendix E to ARADCOM Reg 350-3. The cost differential of some 300 percent between the Ajax and the more expensive Hercules, multiplied by the annual SNAP firings of over 200 missiles, is a weighty factor in this policy.

<sup>10</sup>Para 5, ARADCOM Reg 350-1-5, 2 Aug 67. From 1956 to the beginning of FY 1967, Hq ARADCOM conducted an ORE (also known during the earlier part of this period as an ORI, or Operational Readiness Inspection) of each fire unit once each fiscal year. Since the latter date, Hq ARADCOM has conducted OREs "as necessary."

<sup>11</sup>See the sample ARADCOM Forms 121 and 122, reproduced and attached in Appendix H, for the specific items evaluated. Although the numerous editions of these forms have evidenced changes of format since their inception in 1957, the areas covered and numerical weights assigned have remained generally similar, allowing for inevitable changes in response to changing tactics and weapon systems.

<sup>12</sup>The chart depicts calendar rather than fiscal years because of filing procedures for early ORE records.

<sup>13</sup>The apparently large difference in 1967 is statistically negated by the fact that the averages are based on wide fluctuations within small groups of test scores.

<sup>14</sup>ARADCOM Reg 20-4, 27 Jan 67, sub: Annual General Inspections, ARNG Air Defense Units, para 4b.

<sup>15</sup>Interv with Lt. Col. Gerald A. Baker, Deputy IG of ARADCOM, 28 May 68.

<sup>16</sup>AR 220-1, 20 Feb 67, sub: Unit Readiness, para 5.

<sup>17</sup>Ibid., para 9a.

<sup>18</sup>From 20 June through 31 December 1967, ARADCOM's three active Army double batteries rendered reports as batteries rather than as fire units. Interv, Major James B. Stewart, Plans and Operations Division, DCSOPS, Hq ARADCOM, 10 May 68.

<sup>19</sup>ARADCOM Reg 350-1-6, 14 Feb 67, sub: Defense Combat Evaluation, para 5.

<sup>20</sup>In computing the overall DCE score for a given defense, each fire unit of the defense is given a weight of one, expressed in percentage of maximum score actually achieved. Defense command and control, including AADCP and BSSC (Battle Staff Support Center) performance and defense against CBR (chemical, bacteriological, and radiological warfare), also has a weight of one, similarly expressed in percentage of

maximum score. ADAD positions are also weighted and scored in the same manner. The overall defense score is arrived at by dividing the total score by the number of evenly weighted factors, two of which are always command-and-control performance and ADAD performance and the balance the performance of each fire unit in the defense. Prior to February 1967, a fire-unit score had a weight of two rather than one; the current edition of ARADCOM Reg 350-1-6, 14 Feb 67, places greater stress on the other factors evaluated by reducing this weight. In Chart 10, pre-February scores have been adjusted to a weight of one in order to produce valid high, low, and average component scores for all of FY 1967.

<sup>21</sup>Unless otherwise noted, the analysis in the following three paragraphs is based upon an Interv with Colonel Jack H. Post and Lt. Col. Fred R. Binka, both of the Directorate of Evaluations, DCSOPS, Hq ARADCOM, 24 Nov 67.

<sup>22</sup>Considerable command concern, as evidenced by the personal messages of Lt. Gen. Robert Hackett, CGARADCOM to each Region Commander, 12 Jul 67, sub: Fire Unit Deficiencies During DCEs, was undoubtedly a major factor behind this improvement.

<sup>23</sup>Interv with Colonel Max E. Billingsley, 31 May 68.

<sup>24</sup>As of March 1968, 41 active Army and 33 ARNG Hercules fire units had undergone DCEs. The percentage of Guard units rated "not combat ready" was 24.8, compared to 39.0 for the active Army; the average ARNG score was 71.0,\* compared to 64.1 for the active Army.

<sup>25</sup>ARADCOM Reg 750-8, 22 May 67, sub: Command Maintenance Management Inspections (CMMI), para 4. It should be noted that the CMMI specifically excludes "items or functions" covered by the Technical Proficiency Inspection, which is analyzed below.

<sup>26</sup>Ibid., para 8a.

<sup>27</sup>Ibid.

<sup>28</sup>Ibid., para 10. According to an Interv of 29 Sep 67 with CW3 Randolph B. Maddox, Materiel Readiness Division, DCSLOG, Hq ARADCOM, protective masks are also customarily excluded from CMMIs of ARNG fire units.

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<sup>29</sup>Quotations and statistics are from a presentation by General Stevens published in the ARADCOM Commanders' Conference Brochure, 24-25 July 1963, Incl 8, p.3.

<sup>30</sup>Interv, 29 Sep 67, with CW3 Maddox, who has been with the Materiel Readiness Division of DCSLOG, Hq ARADCOM, since 1961.

<sup>31</sup>Ltr, ACSFOR, DA, to Hq ARADCOM, 17 Jan 64, sub: Technical Proficiency Inspections of Army Nuclear Organizations, AGAM-PCM.

<sup>32</sup>ARADCOM Reg 20-1, 25 Aug 66, sub: Technical Proficiency Inspections, para 2a.

<sup>33</sup>Ltr, CGARADCOM to Chief of Staff, DA, 25 Feb 64, sub: Technical Proficiency Inspections of Army Nuclear Organizations, ADSG.

<sup>34</sup>Interv with Major Kenneth E. Raab, Technical Inspections Division, Office of the Inspector General, Hq ARADCOM, 21 Sep 67.

<sup>35</sup>ARADCOM Commanders' Conference Brochure, 22-24 Sep 64, Inclosure 7, p.10.

<sup>36</sup>The present CG of ARADCOM, Lt. Gen. Robert Hackett, has attributed the TPI failure rate of both ARNG and active Army units primarily to "unreliable weapons" (meaning crew failure to adhere strictly to prescribed safety and technical procedures, rather than manufacturing flaws); but "special reanalysis" did not reveal "any specific or unique causes for the increased failure rate of ARNG units" during the period 1 July 1966-22 March 1967. See 1st Ind to Ltr, IG, Hq DA, to CGARADCOM, 18 Apr 67, sub: Inspection of United States Army Air Defense Command by The Inspector General.

<sup>37</sup>See ibid. for examples of command emphasis. As for results, only 5.8 percent of 52 inspections of ARNG batteries had resulted, as of 20 May 1968, in unsatisfactory ratings, whereas some 14.5 percent of 69 inspections of active Army Hercules batteries yielded, as of the same date, unsatisfactory ratings. Interv with Lt. Col. Lucky R. Iannamico, Chief, Technical Inspections Div, IG, Hq ARADCOM, 21 May 68.

<sup>38</sup>ARADCOM Reg 230-1, 21 Jul 67, sub: Commander's Trophies and "E" Awards, para 5d.

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<sup>39</sup>The quotation is from ARADCOM's command newspaper, Argus, 1 Aug 66, p.1.

<sup>40</sup>ARADCOM Reg 230-1, para 5d.

<sup>41</sup>Ltr, Hq ARADCOM, to Region CGs, 14 Sep 61, sub: Announcement of the General Robert Ward Berry Memorial Trophy, AD.

<sup>42</sup>Ibid.

<sup>43</sup>For details of current ARADCOM policy on Commander's Trophies (as well as "E" Awards), see ARADCOM Reg 230-1, 21 Jul 67, passim.

<sup>44</sup>See the Argus for 1 Feb 59, p.1.

<sup>45</sup>See ibid., 1 Aug 61, p.8.

<sup>46</sup>See Tab A, Discussion of Trophies/"E" Awards, to DCSOPS Summary Sheet to CofS, Hq ARADCOM, 8 Apr 66, sub: Trophies/"E" Awards, ADGCD. This seminal staff paper, authored by Major Robert L. Ackerman, contributed to a great reduction in the previous plethora of trophies, some of which distinguished between the active Army and ARNG components of the command. Noteworthy is the fact that two of the four Regions queried by Major Ackerman recommended that "no differentiation be made between the RA and ARNG in the award of trophies." Ibid.

<sup>47</sup>In addition to the "E" guidons, which are awarded without regard to component, there are four ARADCOM Commander's trophies currently authorized. These are: "Outstanding Nike Hercules Battery in ARADCOM"; "Outstanding HAWK Battery in ARADCOM"; "Outstanding Nike Hercules Firing Battery in SNAP"; and "Outstanding HAWK Firing Battery in SNAP." Practically but not officially, ARNG Task Organization units are out of the running for HAWK awards, as this weapon system is currently manned by active Army units only. See ARADCOM Reg 230-1, 21 Jul 67, para 2 and 3.

<sup>48</sup>Interestingly enough, of the two ARADCOM units which previously attained perfect scores in SNAP firings subsequent to the introduction of the short-notice feature of annual service practice, both were ARNG units. The complete roster of this select company, based upon the records noted in Chart 2, embraces only the following units: Battery "C", 1st Battalion, 202nd Artillery (Illinois ARNG), 24 Jun-1 Jul 62; Battery "D", 4th Battalion, 251st Artillery (California ARNG),

15-22 May 66; Battery "B", 3rd Battalion, 128th Artillery (Missouri ARNG), 15-22 Oct 67.

<sup>49</sup> Interv with Lt. Col. Lawrence G. Campbell, USAF, Tenure Associate Professor of Mathematics, U. S. Air Force Academy, 6 Dec 67.

<sup>50</sup> Such limitations include the fact that ARADCOM morning reports--the sole source for such analysis--do not include ARNG personnel. As for the ARNG side of such an analysis, separate queries of 16 States would be required. The author is deeply grateful to the NGB for its considerable effort in obtaining such Guard data as do appear on p. 182.

<sup>51</sup> Ltr, NGB to author, 18 Oct 67, sub: Request for Information, NG-AROTA.

<sup>52</sup> Ltr, CGARADCOM to Chief, Office of Reserve Components, Hq DA, 7 Feb 66, sub: Miami-Homestead-Key West Missile Complex, ADSN. The estimate of 1113 enlisted personnel losses is based upon a total of such losses, for all of CY 1965, of 13,352.

<sup>53</sup> Interv of 12 Sep 67 with Lt. Col. Charles R. Moulder, Chief, Enlisted Management Div, Directorate of Personnel, DCSP&A, Hq ARADCOM.

<sup>54</sup> Interv with Colonel Max E. Billingsley, 18 Oct 67. These figures were supported by Interv with Lt. Col. Charles R. Moulder of 12 Apr 68.

<sup>55</sup> The Luce press seems particularly persistent in this regard. The two quotations are from, in sequence, an article by William A. McWhirter, "Favorite Haven for the Comic Soldier," Life, Vol. 63, No. 17 (27 Oct 67), pp. 86-98; and an editorial, "Its Time to Change the Guard," Time, Vol. 90, No. 16 (20 Oct 67), pp. 24-25. See also Time issues for 29 Sep 67, pp. 24-25, and for 6 Aug 51, p. 12.

<sup>56</sup> The National Guard in Politics (Cambridge: Harvard University Press, 1965), p. 78.

<sup>57</sup> See the Time editorial for 20 Oct 67 cited in n. 55 above.

<sup>58</sup> Ltr to editor of Time, 20 Oct 67.

## CHAPTER V

### Problems, Approaches And Solutions

Even a mere listing of the problems encountered in achieving the full-time integration of Army National Guard units into the continental air defense system poses, itself, a problem. Many of these problems arose concurrently, as the phases of Guard participation unfolded from 1951 on; and many of them, like anagrams, were interlocked in origin as well as time. Yet, for purposes of orderly analysis, the main strands of this seamless web must somehow be unravelled and dealt with in meaningful sequence. For the historical artificiality of this approach, clarity is the only apologia.

#### Constitutional Duality

At the heart of many problems lay the unique dual status of the National Guard, a status rooted in the sacrosanct soil of the Constitution. There it is written that:

The Congress shall have Power...

To provide for calling forth the Militia to execute the Laws of the Union, suppress insurrections and repel invasions;

To provide for organizing, arming, and disciplining the Militia, and for governing such Part of them as may be employed in the Service

of the United States, reserving to the States, respectively, the Appointment of the Officers, and the Authority of training the Militia according to the discipline prescribed by Congress...<sup>1</sup>

And further, that:

The President shall be Commander in Chief... of the Militia of the several States, when called into the actual Service of the United States...<sup>2</sup>

### Command and Control

Within this governing context of fundamental law there arose, with the initial prospect and subsequent reality of ARNG participation in air defense, the patent problem of command and control. How, in an era of technological explosion which produced ever-increasing velocities and destructiveness of possible air attack, could the imperative necessity of prompt responsiveness by Guard units be assured? Confronting the threat of nuclear weapons and ever-faster delivery vehicles, it was the responsibility of the active Army to provide and command forces contributed to, and under the operational control of, CONAD/NORAD, the unified command charged with responsibility for the air defense of North America. How could this threat, and this responsibility, be safely reconciled with constitutional provisos for State command of the Guard and the requirement for Presidential

action prior to the exercise of full Federal control? As in many other areas of modern American experience, the complex demands of a technological age confronted, in apparent contradiction, the eighteenth-century principles of a hallowed constitution.

During the gun era, the basic approach to this problem was conditioned by the fact that the role of the Guard's SSF units, on-site as well as M-day, was fundamentally that of an augmentation force. In the mutual agreements concluded between Continental (ZI) Army commanders and the States, there was thus no provision for the exercise of operational control in peacetime by active Army commanders.<sup>3</sup> Even if the 15-man caretaker detachments--only a portion of whose personnel could be expected to be present at a battery site at any given time<sup>4</sup>--could actually have fired a few rounds in the event of enemy attack, the active Army defense commander would have had no authority, under these agreements, to order such action until the Guard's "on-site" units could be "called or ordered into the active military service by direction of the President."<sup>5</sup> In an effort to expedite this all-important process, DA had subdelegated authority to issue implementing orders to the commanders of Continental Armies,<sup>6</sup> but the requirement for prior Presidential proclamation remained in

effect throughout the gun era. Fortunately, this answer to the problem of command and control never underwent the acid test of actual air attack.

As ARNG units were converted from guns to missiles and assumed a full-time, integrated role in the continental air defense system, the question of command and control became not only more critical, but more contentious. Given the gravity of the responsibilities involved, it was not surprising that this question engendered overt and weighty resistance to the Guard's increasingly active participation in air defense.

In November 1957, while the pilot program of California's 720th Missile Battalion was yet in progress, Maj. Gen. Eugene F. Cardwell, Commanding General of ARADCOM's 5th Region,<sup>7</sup> formally registered his "strong opposition" to the Guard's Ajax program in a lengthy letter<sup>8</sup> to Lt. Gen. Charles E. Hart, then CG of ARADCOM. Among his many grounds for objection, a central point was the anomaly, which General Cardwell viewed as absolute, between the peacetime command of Guard units by the States, on the one hand, and the principle that "the cornerstone of an effective air defense system is speed." Quoting President Eisenhower's warning that "with missiles and faster bombers, warning times will grow shorter,"<sup>9</sup> General Cardwell held it to be "self-evident"

that "even the best National Guard unit cannot be as good as a Regular Army unit for instant action," primarily because active Army commanders "would need to exercise full command authority" over Guard units--an "extent of authority...not consistent with the term National Guard." Equating Guard participation to a "gamble" with stakes involving the very "survival of our Nation," General Cardwell could see no alternative but to "strongly recommend immediate cancellation of all plans to turn over responsibility for any part of our missile defenses to the National Guard."

Such views were subsequently echoed at the highest levels of the continental air defense system. In July 1959, when implementation of the Guard's on-site Ajax program was almost into its second year, General Earle E. Partridge, USAF, Commander in Chief of CONAD/NORAD, went on record as "vigorously opposed" to the program. In a personal letter to Secretary of Defense Neil H. McElroy,<sup>10</sup> General Partridge expressed his "very real concern over the trend toward employing National Guard units in lieu of Regular units to man first-line weapons in the United States portion of the North American Air Defense System," and his objections to the fact that "the Army program for manning of NIKE AJAX units by the National Guard continues."

Again, a basic ground for objection was the need for air defense to be "capable of timely reaction to ever-diminishing warning times," and therefore subject to a control both "direct and positive." National Guard forces, "because of their subordination to State authorities, meet none of these requirements." General Partridge's "firm recommendation" was that the "manning and operation of all first-line air defense weapons" be a responsibility "clearly assigned" by DOD policy "to the Regular military establishment." A consequent corollary of this recommendation was that "any Army and Air Force National Guard units having an air defense capability must be clearly established and considered only as augmentation forces."

This letter capped General Partridge's previous efforts to convince the Chairman of the JCS,<sup>11</sup> and the efforts of his U.S. component commanders to similarly convince the chiefs of their respective services. In soliciting such support from Lt. Gen. Charles E. Hart, then CG of ARADCOM, General Partridge based his views exclusively upon the need for "timely response" in air defense;<sup>12</sup> and General Hart, in directing preparation of a letter to General Maxwell D. Taylor, then Army Chief of Staff, commented that "I must admit that I agree with General Partridge in this instance."<sup>13</sup> In a resultant "Dear Max" letter to

General Taylor, the ARADCOM CG accordingly stressed the active Army's "lack of authority for the immediate use of the National Guard units in case of emergency," and indicated that relegation of the Guard's Ajax units to a "less exacting mission as augmentation forces" was being studied by his headquarters.<sup>14</sup>

The united protests of Generals Partridge and Hart were met, at DA, by a nonconcurrence which in no way confronted, or even mentioned, the central issue which these field commanders had raised: the unbridgeable gap which, to their way of thinking, existed between the need for rapid responsiveness in air defense and the legal reality of peacetime State command of National Guard forces. Other factors, in the DA view, were of countervailing weight.

Approval of General Partridge's recommendations would not only "destroy the current Army National Guard program" which, as of that time (August 1959) called for employment of 19 Guard Ajax battalions, but would "require reconstitution" of active Army units to replace them.<sup>15</sup> Reflecting the understandable parsimony of Army planners in the New Look era of pronounced Army poverty, DA's position paper pointedly emphasized estimates that abandonment of the Guard's Ajax program would cost the active Army 8,836 personnel

spaces, and some \$11,860,000 in claimed ARNG-active Army cost differential, by the end of FY 1961. Lastly, the fact that approximately 2,800 technicians from 14 States were then participating in continental air defense would "probably" give any DOD decision to drop the program "serious political implications." It was apparently on these grounds, rather than upon any systematic study of its responsiveness to operational readiness requirements, that the Guard's increasingly active role in air defense was preserved.

#### Mutual Agreements

This is by no means to say that the basically constitutional question raised by responsible Regular service critics of the Guard program found no legal answers.

The initial approach to resolution of the problem came in December of 1957, as the pilot program of California's 720th Missile Battalion was already under way. In its policy directive for the Guard's on-site Ajax program,<sup>16</sup> DA blandly decreed that prior to mobilization, "Army National Guard missile battalions on site...will be under the operational control of the USARADCOM commander of the respective air defense areas." As for the mechanics of

implementing this thorny principle, CGARADCOM was authorized direct communication with the Adjutants General of the States involved, and directed to "negotiate mutual agreements...for the alerting, assembling, manning, and ordering to fire" of ARNG on-site missile units pending orders into Federal service.

All this was easier said than done, as evidenced by the fact that as late as October of 1959, only two of the 14 States involved had signed the standard mutual agreement which ARADCOM had by then devised.<sup>17</sup> This sluggish progress toward solution of the patently primordial and interrelated problems of operational control and responsiveness can be attributed to three major and similarly interrelated factors: lack of appropriate command emphasis within ARADCOM; an unsuccessful DOD effort to secure a legislative solution; and resistance, which varied in degree from fierce to negligible, from the States.

The lack of adequate command emphasis within ARADCOM, at least initially, was apparent at both regional and command headquarters. Despite the DA directive of December 1967, ARADCOM did not even produce a DA-approved standard format for agreements, which were to be negotiated by ARADCOM's region commanders, until June of 1959.<sup>18</sup> Prior to that time, ARADCOM's region commanders had been on their own in reaching agreements with the States; and their approach to the

intensive negotiating process clearly necessary to produce legal agreements with 14 distinctive and at least quasi-sovereign States, was at best perfunctory. Some region commanders merely transmitted ARADCOM's standard format to Adjutants General with what the Chief of the NGB described, in the fall of 1959, as "an implied take it or leave it,"<sup>19</sup> and to his knowledge there was no instance, at least in the East, in which "an active Army general officer visited in the office of a state Adjutant General to resolve problems concerning the agreement."<sup>20</sup>

Such lethargy, if not deliberate, was not inconsistent with the less than enthusiastic views of ARADCOM's CG toward the whole concept of the ARNG on-site missile program. As late as August of 1959, General Hart was still advocating to DA that the Guard's on-site Ajax units be "relegated to the position of augmentation forces only"<sup>21</sup>--and substantiating his continued criticism of the Guard's operational responsiveness with the somewhat paradoxical observation that ARADCOM standard agreements had been concluded with only two States.

Some of ARADCOM's foot-dragging can be attributed to the fact that DOD, in November of 1958, had proposed a drastic legislative solution (86-10) to the problem of command and control. The key position proposed to bestow upon CINCONAD the power to "order to active duty involuntarily those National Guard units assigned an air defense

mission when, in his opinion, awaiting the declaration of a national emergency by the President would seriously limit air defense operations."<sup>22</sup>

So bold a solution would probably have satisfied even General Partridge, and would have made ARADCOM agreements with the States unnecessary. Such a solution would also have been of highly dubious constitutionality and, probably, politically unpalatable to the Eisenhower Administration<sup>23</sup>--not to speak of the States themselves. It was therefore not surprising that, on 30 April 1959, "top administration officials decided that it was possible to accomplish the purposes of the proposal by means other than legislation," and that "accordingly, this proposal was deleted from the legislative program."<sup>24</sup>

With the demise of DOD's legislative approach to the problem, DA understandably pressured ARADCOM to produce the mutual agreements required by the DA directive of December 1957. Replying to a DA letter from DCSOPS, General Hart in October of 1959 assured General Moore that "the problem of obtaining mutual agreements" was "a matter of personal concern" to him, and that he had directed ARADCOM's region commanders to "make this problem their immediate concern and to establish personal negotiation with the appropriate State Adjutants General at an early date."<sup>25</sup>

ARADCOM's "immediate concern," belated though it was,

proved to be highly beneficial. In October of 1959, when General Hart emphasized the importance of agreements to his region commanders during an ARADCOM commanders' conference, only Pennsylvania and Michigan, of the 14 states then involved in CONUS on-site air defense, had signed ARADCOM's standard agreement.<sup>26</sup> California, Washington, and New Jersey had signed modified versions of the standard agreement; "stop-gap" interim agreements had been signed by Massachusetts, Maryland, and Virginia; and six States--New York, Connecticut, Ohio, Wisconsin, Rhode Island and Illinois--had not signed any type of agreement. By 1 July 1960, and probably well before that date, agreements had been concluded with all 14 of the States, although some of these were interim or modified versions of ARADCOM's standard agreement.<sup>27</sup>

The grounds for objection by the States were as varied as the degrees of their resistance. In response to ARADCOM's initial approach in July of 1959, Maj. Gen. (later Lt. Gen.) Milton A. Reckord, the Adjutant General of Maryland and a high-powered official of the politically potent National Guard Association,<sup>28</sup> magisterially replied that "the proposed agreement is entirely unsatisfactory to me, and I must refuse to sign same."<sup>29</sup> In his view, ARADCOM's definition of operational control meant that peacetime "command of certain units of the National Guard of Maryland would virtually be

handed over" to ARADCOM. The language to which he objected read as follows:

Operational control as exercised by the active Army air defense commander is defined as follows: Those functions involving the conduct of inspections, exercises, and tests; the tactical employment of units and assigned personnel; the designation of objectives and the authoritative direction necessary to accomplish the mission. It does not include such matters as administration, discipline, internal organization and unit training.<sup>30</sup>

And to ARADCOM's stipulation that "upon the declaration of an air defense emergency, as determined by CINCNORAD...Army National Guard missile personnel and units will prepare for and conduct fire upon orders of the active Army air defense commander,"<sup>31</sup> General Reckord replied that "before firing a missile they (ARNG personnel) should definitely be in active federal service."<sup>32</sup>

Although General Reckord's objections were sufficiently assuaged to permit the conclusion of an interim agreement with Maryland, other States expressed concern about another major obstacle to agreement: the claims for damages and other tort actions which could result from the full-time participation of civilian technicians in air defense operations and training.<sup>33</sup> Because these technicians were employees of the States rather than of the Federal government, the States might find themselves subject to damage claims whose possible magnitude, in view of the ever-increasing lethality of air

defense weaponry, might become particularly onerous in carrying out what was, after all, a basically Federal mission.

A legislative approach to this problem resulted not only in its solution, but removal of a major stumbling block on ARADCOM's road to conclusion of agreements with all of the States involved in CONUS air defense. Developed by DOD in 1958, a bill to amend the Tort Claims Act was passed by the Congress and signed into law (P.L. 86-740) by President Eisenhower on 13 September 1960. This measure in general placed Guardsmen and air defense technicians on the same basis, with respect to claims arising from their performance of duty, as personnel of the regular armed services.<sup>34</sup> In so doing, it contributed greatly to the conclusion of standard agreements which granted to active Army air defense commanders DA's approved solution to the problem of command: operational control.

Other factors, by July of 1960, were also smoothing the path toward mutual ARADCOM-State satisfaction with this solution. The conversion of on-site ARNG units from Ajax to Hercules, already well into the planning stage by the summer of 1960, clearly called for preliminary resolution of the command and control problem. Although General Hart had strongly opposed the Guard's Hercules program,<sup>35</sup> one of his last acts, prior to his retirement in July 1960, was to establish an Office of Army National Guard and Reserve Affairs<sup>36</sup> at ARADCOM

headquarters. As first chief of this independent special staff section, Colonel Max E. Billingsley was specifically charged with revision of ARADCOM's standard agreement and elimination of the kind of extraneous verbiage, particularly as related to administration and logistics, which General Reckord had found objectionable.<sup>37</sup>

ARADCOM's revised agreement was approved by DA and the NGB in 1961, and--thanks largely to the prior resolution of the torts problem--found comparatively clear sailing with the States. By the end of 1962, all of the 16 States involved in the Hercules program had acceded to the standard agreement, and since that time there have been no major problems in this field.<sup>38</sup>

Because there have been no substantive differences between the several editions of the agreement from 1962 to the present, a summary of the present version<sup>39</sup> suffices to describe the salient features of the arrangement in effect throughout this period.

The mission of ARNG on-site units is to "operate continuously and effectively in the air defense system, under operational control of appropriate active Army air defense commanders." Operational control is defined to include functions involving the conduct of inspections, exercises, and tests; tactical employment; designation of objectives;

and "the authoritative direction necessary to accomplish the mission." Such direction specifically includes authority to establish states of alert and require full-time technicians, in the event of sudden attack prior to declaration of an air defense emergency by CINCNORAD/CONAD, to "initiate and conduct fire." Following declaration of an air defense emergency and as directed by the CG of ARADCOM, M-day personnel as well as technicians can be required to assemble and conduct fire as directed by the active Army air defense commander. Although command of on-site ARNG units rests with the Governors of the respective States prior to declaration of war or national emergency, the Governors agree not to divert these units from their air defense mission to "any other active state duty."<sup>40</sup> Thus, haltingly and somewhat traumatically, but to the eventual satisfaction of all concerned--DA, ARADCOM, and 16 States--a practical solution was devised to bridge the gap between constitutional principle and the pressing need for immediate responsiveness in air defense. As in other spheres of Federal-State relationships, pragmatism and compromise eventually prevailed over doctrinaire limits to State participation in air defense.

#### Technician Status: The Legal Limbo

Although legislative resolution of the claims issue

in 1958 was a major step forward in clarifying the legal status of the ARNG's air defense technicians, the murkiness of their status in other important areas continues to be a problem. Since their first appearance in the gun era, these civilian technicians have operated in what can be described as a legal limbo; and because they constitute the Guard's immediate capability in continental air defense and their opaque status has, on occasion, adversely affected their morale and operational readiness, this problem of legal status is of more than merely academic interest.

Legally, air defense technicians are not even defined as such. The authority under which they have always been employed<sup>41</sup> at least technically lumps them together with the more traditional categories of civilian "caretakers and clerks" of the National Guard. Although the Secretary of the Army is empowered to fix the salaries of such "caretakers and clerks" and to "designate the person to employ them," this authority was delegated, in July 1958, to State Adjutants General,<sup>42</sup> who may also establish duties and work hours and supervise and discharge employees, subject to law and the instructions of the Chief, NGB.

The pay of air defense technicians, like other civilian employees of the Army and Air National Guard, comes from federally appropriated funds.<sup>43</sup> Pay rates, since 1951, have

been generally equated with the General Schedule (GS) rates of the Federal Civil Service in the case of supervisory and highly skilled personnel, or determined by the Army-Air Force Wage Board in the case of such "blue-collar" occupations as launcher crewman, radar operator, or mechanic.<sup>44</sup>

Yet the fact that air defense technicians are paid from Federal funds does not make them Federal employees. Ever since a 1941 ruling of the Comptroller General of the United States,<sup>45</sup> civilian employees of the Army and Air National Guard have been considered, by the Departments of the Army and of the Air Force, to be employees of the States. In addition to delineating a legal dilemma in which Federal courts have ruled that air defense technicians are State employees and State courts have ruled to the contrary, this finding withheld from Guard civilian employees such Federal fringe benefits as participation in the Civil Service retirement system and Federal insurance programs. Although the average technician salary has always been reasonably attractive,<sup>46</sup> this paucity of fringe benefits can be assumed, in a pension-minded age, to have had other than beneficial effects upon morale.

The unceasing operational requirements of on-site air defense, when coupled with the fact that overtime pay is not authorized for civilian technicians,<sup>47</sup> combined to produce another problem which has been of abiding significance ever since ARNG missile units first assumed full-time missions in

the late 1950s. Although authorized equal compensatory leave for overtime work beyond the theoretical 80-hour, two-week pay period, technicians cannot always be granted such leave within the 60-day time limit prescribed by regulations.<sup>48</sup> In the ARNG Air Defense Task Organization, as in ARADCOM as a whole, uncompensated overtime has been the rule rather than the exception.

A prerequisite of employment for air defense technicians has always been, since the early gun days of the Guard's on-site programs, membership as a Guardsman in the unit selected for an on-site mission.<sup>49</sup> Viewed in conjunction with their patently military mission, this basic requirement contributes, if only psychologically and morally, to the uncertainty of the technicians' legal status. As the Chief of the NGB put it in 1960, these factors make it "quite apparent that not every freedom and privilege of ordinary civilian employment can be enjoyed by the National Guard technicians whose status is so colored by the military nature of their calling."<sup>50</sup>

Another corollary of this basic proviso is that an individual's grade and position within the civilian technician structure of the unit should be compatible with what, in the event of mobilization, his active military status within the federalized unit would automatically become. Thus, a technician normally is not placed over another technician who is his

senior in military rank.<sup>51</sup> Yet another aspect of the technician's quasi-military status is the obvious desirability of putting the civilian hat of unit "supervisor" and the military hat of ARNG unit "commander" on only one head; but there have been at least three cases, since the beginning of the Guard's on-site missile program, in which this desideratum has not been met.<sup>52</sup>

### "Labor" Relations

Quasi-military, quasi-civilian, neither Federal fish nor State fowl, the ambiguous status of air defense technicians has inevitably been reflected in isolated incidents which fortunately have not impeded progress toward constructive solution of the basic problem of identity.

The first and relatively mild of these incidents took place in the summer of 1960, when technicians of an ARNG unit of the Pittsburgh defense contacted an official of the Building Service Employees' International Union and requested a charter for the purposes of collective bargaining and settlement of "grievances concerning conditions of work."<sup>53</sup> When the Adjutant General of Pennsylvania met with this official--who apparently was well aware of the "unique nature" of technician employment to begin with--explanation of the fact that technician status was determined by Federal statute

sufficed to forestall issuance of a charter and nip this tentative organizing effort in the bud.

In September of 1961, however, the same union undertook a far more intensive and complex effort to organize technicians, this time in Seattle. A key figure in this effort was a former commander and supervisor of a Guard Ajax battalion in the Seattle defense, who in 1959 had been relieved as commander and discharged as supervisor, and who was now the local business agent for the Building Service Employees' International Union.<sup>54</sup> Beginning with the disgruntled adherence of a technician who had been displaced in the technician structure by an individual who was junior to him in technician grade but his senior in military rank,<sup>55</sup> a covert organizing effort succeeded in proselytizing some 60 percent of the battalion's technician personnel before its existence became known to the battalion supervisor. In the meantime, the operational readiness of the unit deteriorated to a point which, in the words of Brig. Gen. Horace L. Sanders, ARADCOM's 7th Region commander, was "inconsistent with the previous high level of performance of duty which has so impressed me during the earlier months of my association with these units."<sup>56</sup>

The next act in this unhappy drama unfolded when five of the disaffected individuals, an officer and four warrant officers, refused to reveal to the battalion supervisor either the identity or purpose of the organization they had joined. When four of these technicians were discharged from their employment with the battalion,<sup>57</sup> the union not only appealed for their reinstatement to the State Personnel Board, but directly to the Governor of Washington. Because the Governor (who received "letters of a threatening nature"<sup>58</sup> in addition to this appeal) refused to intercede, his name was subsequently inscribed on the "unfair list" of the AFL-CIO King County Labor Council.<sup>59</sup>

The administrative and judicial jungle into which this case entered yielded little in the way of clarifying the basic status of air defense technicians. Concerned about the possible effects of unionization upon combat readiness and "command functions," Hq ARADCOM queried the Army Judge Advocate General as to the legality of union membership for air defense technicians, and received an opinion which held that this was a matter to be determined by the State, since the individuals involved were "employees of the State of Washington."<sup>60</sup> For his part, the Adjutant General of Washington found no legal objection to unionization and issued "strict instructions" that technicians be assured

of their right to organize.<sup>61</sup> Although the State Personnel Board ordered reinstatement of the four technicians, this decision was overruled by the Thurston County Superior Court's finding that air defense technicians, contrary to the DA view, were "employees of the federal government and not subject to state civil service regulations."<sup>62</sup> When this finding was appealed by the State Personnel Board to the State Supreme Court, that body upheld the Adjutant General's authority to fire technicians, ruling that they were "not under the protection of State Civil Service law"; for the State of Washington, at any rate, this finding was final, and the efforts of the four technicians to obtain reinstatement came to naught.<sup>63</sup>

In April of 1962 the unpredictable but inexorable demands of constant readiness in air defense precipitated an incident in one battery of a dual ARNG site at Lido Beach, New York.<sup>64</sup> One of these batteries was on 15-minute alert status with the other in a back-up role, designated to assume "hot" status in the event of equipment outage in the alert battery. When such materiel failure repeatedly forced the recall of personnel in the back-up battery to assume advanced alert status, 14 technicians either refused to remain on or report to the site, and were immediately discharged by the ARNG battalion commander. Prompt action by New York National Guard authorities reconstituted the alert crews by TDY assignments of other ARNG personnel to the affected battery, and

permanent replacements were soon recruited. The efforts of the discharged employees to secure reinstatement through state courts were unsuccessful, again on the basic ground that they could not be considered to be employees of the State.<sup>65</sup> When they took their case to a Federal District Court, jurisdiction was again disclaimed on the ground that the technicians could not be considered to be Federal employees.

Overtime was the principal issue involved in the last of the four isolated incidents which have occurred since the beginning of the ARNG's participation in on-site air defense. The catalyst in this case was the disgruntlement of a technician employed at a site of the Washington-Baltimore Defense in Waldorf, Maryland, who, when denied leave to attend the funeral of President Kennedy in November of 1963, went "AWOL" for three days.<sup>66</sup> Upon his return, his battery supervisor placed him in leave status without pay. When the individual proceeded, while on site during duty hours, to solicit funds from other technicians for the purpose of retaining an attorney to look into their "federal rights" with respect to compensation for overtime, the battalion supervisor "forthwith discharged" him and immediately initiated the necessary paperwork for definitive termination of his employment.

Some 49 technicians of the ex-employee's unit then

petitioned a Federal Court of Claims for payment for overtime work which came to an average of some 896 hours each<sup>67</sup>-- an amount obviously impossible to compensate with leave within the time limit of 60 days. Predictably, the Federal court threw the case out on the ground that these technicians could not be considered employees of the Federal government.<sup>68</sup>

The plight of air defense technicians, as well as other ARNG "caretakers and clerks," has not been ignored by Federal authorities. For example, the Department of Labor extended workmen's compensation to technicians by administrative interpretation of the Federal Employees' Compensation Act,<sup>69</sup> and the Federal government has been paying, since 1954, the employer's cost of Social Security on behalf of National Guard technicians. Since 1961, the Federal government has also contributed the employer's share of the cost of State retirement systems, in those cases--of which there were eight as of late 1966<sup>70</sup>--where air defense technicians are eligible, under State laws, for participation in such systems. But the basic "identity crisis" of air defense technicians remains unresolved, and any lasting solution to this problem will clearly require Federal legislation.

In early 1967, such legislation was put into the hopper by Representative F. Edward Hebert of Louisiana, who on 10 January of that year introduced a bill (H.R. 2) which

includes, in its Title II, a "National Guard Technicians Benefits Act." Drafted by the NGB,<sup>71</sup> this bill, if enacted, would definitely serve to "clarify the status of National Guard technicians."<sup>72</sup>

To summarize its highlights, the proposed legislation would make Guard technicians employees of the Department of the Army (or Air Force) and of the United States, while continuing the requirement for Guard membership in the military grade required by the position and excluding positions from the competitive provisions of Federal Civil Service. The overtime problem would be met, in the specific case of air defense technicians, by authorizing additional "premium pay" which could not exceed, on an annual basis, 25 percent of an individual's base pay. All fringe benefits of the Federal Civil Service, with retroactive credit for service prior to enactment of the bill, would be extended to technicians; and the Federal government would continue to contribute the employer's share of State retirement costs in the event an individual technician should prefer to remain under a State system rather than electing the Federal Civil Service retirement system. A psychic fringe benefit would also be afforded by change of the misleading legal sobriquets of "caretakers and clerks" to the more prestigious title of "technician."

As Civil Service employees of the Federal government, technicians would be clearly barred from striking,<sup>73</sup> thus legally removing any possibility of the most direct and drastic threat to combat readiness. However, it may well be wondered whether Adjutants General, who would retain their authority to hire technicians, would continue to have a relatively free hand in firing them.

Given the weighty issues raised by this proposed legislation, it was not surprising that enactment had not yet been achieved as 1967 came to an end. Although passed by the House of Representatives on 20 February of that year, the Senate's Armed Services Committee on 7 November voted unanimously to defer action on this portion of H.R. 2 until the next session, thus permitting "a further review" of the "deeply complicated" questions it raised.<sup>74</sup> Unanimously conceding that "action on the technician problem should be completed as soon as possible," the Committee indicated that the impact of the proposed legislation on Federal-State relations, as well as the considerable cost and actuarial implications of the proposed retirement provisions, required additional review.

Pending the results of this review, technicians can only continue what has been, in truth, a search for identity.

That this frustrating quest has resulted in relatively few and isolated threats to the combat readiness of the Guard's on-site air defense units speaks well for the dedication of the vast majority of those upon whom rests the immediate capability of those units: the air defense technicians.

### Force Structure and Site Selection

In addition to the classic factors affecting the size and composition of any military establishment--of which budgetary limits, training base, technological capabilities, and strategic purposes spring most readily to mind--the structuring of the ARNG's on-site air defense force has required, since the inception of the program in 1951, numerous special considerations peculiar to the Guard identity of this force. Not all of these considerations posed major problems; but in their many-faceted entirety, they combined to produce a unique pattern which any future planning for Guard participation in air defense cannot afford to ignore.

Fundamental to on-site force structuring during the gun era was the fact that Guard participation was directed toward augmentation of active Army defenses, rather than full-time integration into these defenses. Even the "on-site" SSF gun

batteries, with their 15-man caretaker crews, were essentially augmentation forces. Apart from the relatively minor costs of these caretakers and of site maintenance,<sup>75</sup> the costs of the on-site aspect of ARNG participation differed but little from materiel and drill pay costs of Guard units assigned a more traditional, post-emergency role in air defense. The objective was to obtain as many trained units as possible for use only in an actual emergency. The major limiting factors were equipment availability (especially of fire direction materiel), training base, and State capabilities.

With the armistice in Korea and the subsequent advent of the Eisenhower Administration's "New Look" in defense policy, the active Army underwent a budgetary and manpower squeeze which later merged with plans for conversion of its Ajax units to Hercules to produce a new set of goals for Guard participation in air defense. By full-time manning of Ajax sites with technician crews of minimum strength, the Guard would not only ease the active Army's transition to a new weapon system, but effect significant savings in the budgetary and manpower spheres. As the Under-Secretary of the Army pointed out to his chief in 1960, full-time manning of ARNG missile sites by civilian technicians had permitted DA to present the Congress with savings in personnel costs, when compared with the active Army, of a "cost differential for each battalion which favors the National Guard in the sum

of \$403,000"; even more important, in his mind, were "the savings of 8,836 personnel spaces" for "very profitable use elsewhere" in the active Army.<sup>76</sup>

Despite these changes of objective, overall site availability presented no major problems. As the active Army's gun units converted to a lesser number of Ajax units, gun sites were turned over to the Guard's "on-site" units; and as active Army units converted from Ajax to a lesser number of Hercules units, their sites became available for subsequent occupancy by the Guard's Ajax units. And when Guard units were converted from Ajax to a lesser number of Hercules units, the sites of inactivated Guard units, as well as inactivated active Army Hercules units, became available. From the Guard's viewpoint, the primary requirement was that sites be in reasonable proximity to the population centers from which state air defense personnel, both technicians and their supporting M-day Guardsmen, must necessarily come.<sup>77</sup> However, the fact that some technicians currently commute to sites as distant as 50 miles from their homes indicates that the factor of proximity is not inflexible in application.<sup>78</sup>

Specific site selection, as distinct from overall site availability, posed serious problems, especially during the gun era of the Guard's participation.<sup>79</sup> Lags in Ajax site construction for active Army units often delayed and

sometimes cancelled scheduled Guard occupancy of former active Army gun sites, to the understandable resentment of States which had employed on-site caretaker personnel in anticipation of taking the sites over. Changes in objectives to be defended had similarly adverse effects. As an example, after Missouri organized two battalions for the defense of St. Louis and hired the necessary on-site caretaker personnel, St. Louis was dropped from the list of defended areas. Although St. Louis was later restored to grace and Missouri's two battalions eventually achieved on-site status in that defense,<sup>80</sup> the trauma of such stop-and-go changes might have been avoided by more thorough staff work in the selection of specific sites.

The unit inactivations and branch transfers which accompanied conversion to more advanced weapon systems and consequent changes in technical and tactical site criteria also could be painful. For example, the omission of Delaware's two on-site gun battalions from participation in the Guard's Ajax program brought, in 1958, a bitter protest from that State's Adjutant General.<sup>81</sup> Pointing out that the Delaware ARNG was "composed solely of Army Air Defense units" which, "since 1928 (had) come up from the old truck-mounted 75mm," General Scannell justifiably deplored "the loss of some 7,000 man-years of anti-aircraft

experience to the Army Air Defense Command." Noting that the officers and on-site caretakers of his two gun battalions had been school-trained in missiles at Fort Bliss, he requested assurances from ARADCOM that there would not be "a pressing requirement for troops with Air Defense training in this area two years hence, just after I have completed their conversion to mess-kit repair battalions or some other type unit." To this, ARADCOM could only refer General Scannell to the NGB for projections, which DOD alone could provide, of the overall composition of the reserve components, and remind him of the unpredictable impact of "events and budgetary appropriations" upon air defense programs.<sup>82</sup>

#### Technician Retention

Another and even more sensitive aspect of the problem of ARNG force structuring has been technician retention, a factor which became acutely important in planning the Guard's move from Ajax to Hercules. Highly trained and experienced, technicians are invaluable but relatively immobile air defense assets. Often concentrated in small communities close to or even on air defense sites,<sup>83</sup> technicians can also constitute a significant interest group on the local community scene.

A case in point is that of Terrell, Texas, currently a Hercules site for Battery "B" of the 4th Battalion, 132nd Artillery, a unit of the Dallas-Fort Worth Defense.<sup>84</sup> Like most of ARADCOM's units, this battery occupies a site located in a small community at some distance from the heart of the defended area: a fairly typical example, Terrell is about 30 miles from Dallas. Terrell has a population of about 16,000, most of them farmers and ranchers. There is a small aluminum products plant, employing about 150 workers. Another plant manufactures athletic equipment, and has about 100 employees. A small college, with a student body of about 600, and a State mental hospital, with a staff of about 900, round out Terrell's list of major non-military activities.

In this small community is embedded "B" Battery, with its 90 technicians earning an annual payroll in excess of \$600,000. Eighty of these technicians, with an average of three dependents per technician, reside in Terrell; most of this \$600,000 payroll is therefore spent in Terrell. In addition, the battery spends about \$25,000 annually on utilities, mostly electricity; and about \$10,000 a year goes to Terrell merchants for paint, lumber, and other items required for site maintenance.

In Terrell, air defense is big business. And the relationship between the community and its air defense unit is not exclusively economic: several of "B" Battery's technicians, for example, are active church leaders. Although the battery is big business in Terrell, the nexus which links the two is not confined to cash.

In this light, it is no surprise that the protection of technicians against the twin threats of technological unemployment and drastic redeployments has been a matter of legitimate concern not only to the technicians themselves, but to State administrations. This was particularly evident in the case of conversion from Ajax to Hercules missiles, which threatened the jobs of some 644 technicians.<sup>85</sup>

The gravity with which some states viewed this problem was fully manifested at a conference, held in the Pentagon on 7 December 1961, in which the DA-approved plan for 48 ARNG Hercules batteries was presented to the AGs (or their representatives) of the 14 states then participating in the Guard's air defense program.<sup>86</sup> When the ARADCOM representative presented the plan, he was "nearly thrown out on his ear" by the shock-waves which emanated from some of the States represented.<sup>87</sup> Although objections took the form of "desires" for additional Hercules batteries, the fact that most of the objecting States were to suffer a net loss in technician jobs, and

that allocation of additional units could absorb this loss, undoubtedly loomed large. No fewer than six states-- Maryland, Rhode Island, Massachusetts, Connecticut, Virginia, and Washington--flatly stated that they would withdraw from the program if their desire for additional units was not accomodated by a change of plan. Of these six states, four--Massachusetts, Connecticut, Virginia, and Washington--were programmed to lose approximately 100 technician spaces each, or about two-thirds of the entire anticipated loss.

Maj. Gen. Donald W. McGowan, then Chief of the NGB, at this point stepped into the breach. After a telephone conference on 15 December with Lt. Gen. Robert J. Wood, then CG of ARADCOM, and consultation with "certain key states,"<sup>88</sup> General McGowan on 21 December formally proposed to ARADCOM a solution designed to reduce "the heavy losses of trained personnel...under the present 48-battery plan" to "slightly under 200...currently employed technicians." This he proposed to do by granting an additional battery to each of the six states which had threatened to withdraw from the program, as well as moving a battery from the New York City Defense to Buffalo.

After obtaining General McGowan's agreement to deletion of the NGB proposal for an additional battery in Rhode Island, General Wood on 11 January 1962 obtained the



MAJ. GEN. DONALD W. MCGOWAN,  
Chief of the National Guard  
Bureau, 1959-1963

concurrence of CINCONAD to these changes,<sup>89</sup> and further planning for the Guard's conversion to Hercules was accordingly amended by the deletion of previously planned ARNG participation in Missouri and Minnesota. Given the DA position that "troop ceilings for ARADCOM had been established on the basis that the National Guard would assume operation of 48 batteries" and that it was up to ARADCOM to "negotiate to establish a satisfactory 48-battery program,"<sup>90</sup> General Wood had few, if any, alternatives to this solution. The lesson appears to be that planning for the Guard's overall force structure should go hand in hand with detailed selection of sites for Guard participation, and that such sites should be selected with close attention paid to the potent factor of technician retention.

#### The Rotation Base Requirement and the "50-Percent Rule"

For its part, the active Army had some parameters of its own which directly affected answers to the questions "How many ARNG units?" and "Where?"

As the Guard prepared to share Hercules defenses with the active Army, the latter's need for a rotation base in the CONUS came into sharp focus. Obviously, active Army air defense personnel would require appropriate berths upon

return from overseas tours in air defense; conversely, overseas air defense units required a stable, CONUS-based source of trained and experienced air defense personnel. Reminiscent of the old British regimental rotation system, in which different battalions of the same regiment shuttled back and forth between England and India, a rotation base was necessary to fully utilize the highly specialized skills of career air defense personnel by alternating individual assignments within the same weapon system at home and abroad.

This requirement, when combined with the active Army troop basis established for ARADCOM by DA, clearly imposed a limit upon the size of the ARNG's Air Defense Task Organization, CONUS. In an ARADCOM study addressed, in 1962, to the problem of determining "how far the Army can go in turning Hercules batteries over to the ARNG,"<sup>91</sup> the rotation base requirement was a major factor in the study's conclusion that 48 ARNG batteries was the practicable limit. Although estimates of the exact number of units required to maintain an active Army rotation base have changed since 1962,<sup>92</sup> the need itself remains.

What might be called the "50-percent rule" has also imposed at least theoretical limits upon the extent of ARNG participation in on-site air defense, limits which have affected the location of ARNG units as well as their number.

As enunciated in a G-3 presentation to an ARADCOM commanders' conference in 1958, this desideratum specified that "not more than 50% of the missile units in any defense should be National Guard."<sup>93</sup>

The source of this "rule" appears to have been the opposition of Lt. Gen. Charles E. Hart, CG of ARADCOM from 1957 to 1960, to the entire concept of integrated ARNG participation in missile-armed air defense--opposition based upon his doubts as to the responsiveness of Guard units in an emergency.<sup>94</sup> Its rationale, at least as understood by the NGB, was a "NORAD" conception that half of all the batteries in a particular area should have the capability of achieving and maintaining a fifteen-minute alert status 50% of the time"<sup>95</sup>--a capability which the technician structure of on-site ARNG Ajax units did not provide. Clearly, the impetus for this policy came from ARADCOM, rather than CONAD/NORAD or DA,<sup>96</sup> although the concurrences of these higher headquarters were obtained.<sup>97</sup>

It is equally clear that ARADCOM's desired restriction was not impervious to pressures generated by other factors in ARNG force structuring, particularly that of technician retention. As early as 1962, ARADCOM planning for the Guard's Hercules program was compelled to accept exceptions to the 50-percent rule in six of the Hercules defenses then

on the drawing boards.<sup>98</sup> As actually completed in April 1965, the program saw Guard units manning more than 50 percent of five defenses, a situation that has continued to the present day.<sup>99</sup>

Although the barrier of 50 percent has been breached and can no longer be described as a "rule," Army regulations have continued, since 1961, to require some degree of "mix" within a given defense. Since that date region commanders have been responsible, in the event an on-site Guard unit fails, "through lack of...technician personnel" to meet minimum readiness standards, for promptly correcting the deficiency--if necessary, by augmenting the Guard unit with active Army personnel from the affected defense commander's "own resources."<sup>100</sup> Although implementation of this proviso has never, to date, been required,<sup>101</sup> it patently presupposes the existence of active Army personnel resources within each defense. In effect, the 50-percent solution to this "mix" problem has been superseded by reliance upon the dexterity of ARADCOM's field commanders in manipulating active Army resources within defenses. Fortunately, the prompt and effective reaction of ARNG authorities to such rare and isolated incidents as occurred at Lido Beach has obviated any real test of this solution.

## Training

Because the payoff of training is performance, the generally enviable record compiled by ARNG units in mastering the requirements of active Army tests, evaluations, and inspections justifies the conclusion that no insuperable training problems were encountered in the successive phases of the Guard's on-site participation in air defense. This is not to say, however, that problems peculiar to the training of Guard personnel did not arise, particularly in the areas of active Army supervision; personnel aptitude and attitude; and on-site training.

As early as 1952, the assignment by DA to AFF of the responsibility for the supervision of training of the Guard's SSF units appeared somewhat questionable to ARAACOM, whose brochure for the important conference on Guard participation held in September of that year claimed "moral responsibilities" of ARAACOM for training support "beyond those spelled out" by DA.<sup>102</sup> By 1955 this view had crystallized into repeated ARAACOM recommendations to DA that CONARC, successor to AFF, be relieved of responsibility for supervision of training for on-site Guard units, and that this responsibility be assigned to ARAACOM.<sup>103</sup> Although CONARC "consistently objected"<sup>104</sup> to this change,

the logic of ARAACOM, as the headquarters which would assume command of SSF units in the event of their call to active duty, ultimately prevailed. At the beginning of 1956, and only after a high-level conference of the ARAACOM and CONARC CGs with the Vice Chief of Staff of the Army, ARAACOM received responsibility for "the supervision of the training of all National Guard non-divisional anti-aircraft units which are assigned specific CONUS anti-aircraft defense missions and which have qualified for and have been designated as Special Security Force units."<sup>105</sup> Training being a command and therefore a State responsibility, the discharge of this function perforce remained with State Adjutants General and commanders in the Guard's chain of command; but supervision of air defense training, for those ARNG units assigned specific missions in CONUS air defense, has since 1956 been the responsibility of ARAACOM and its successor, ARADCOM.<sup>106</sup>

The conversion from guns to Ajax and the full-time integration of Guard units into the continental air defense system, at a time when active Army units were themselves in the process of converting from Ajax to Hercules, posed training problems which were not limited to the complexities of coordinating and scheduling training for Guard personnel

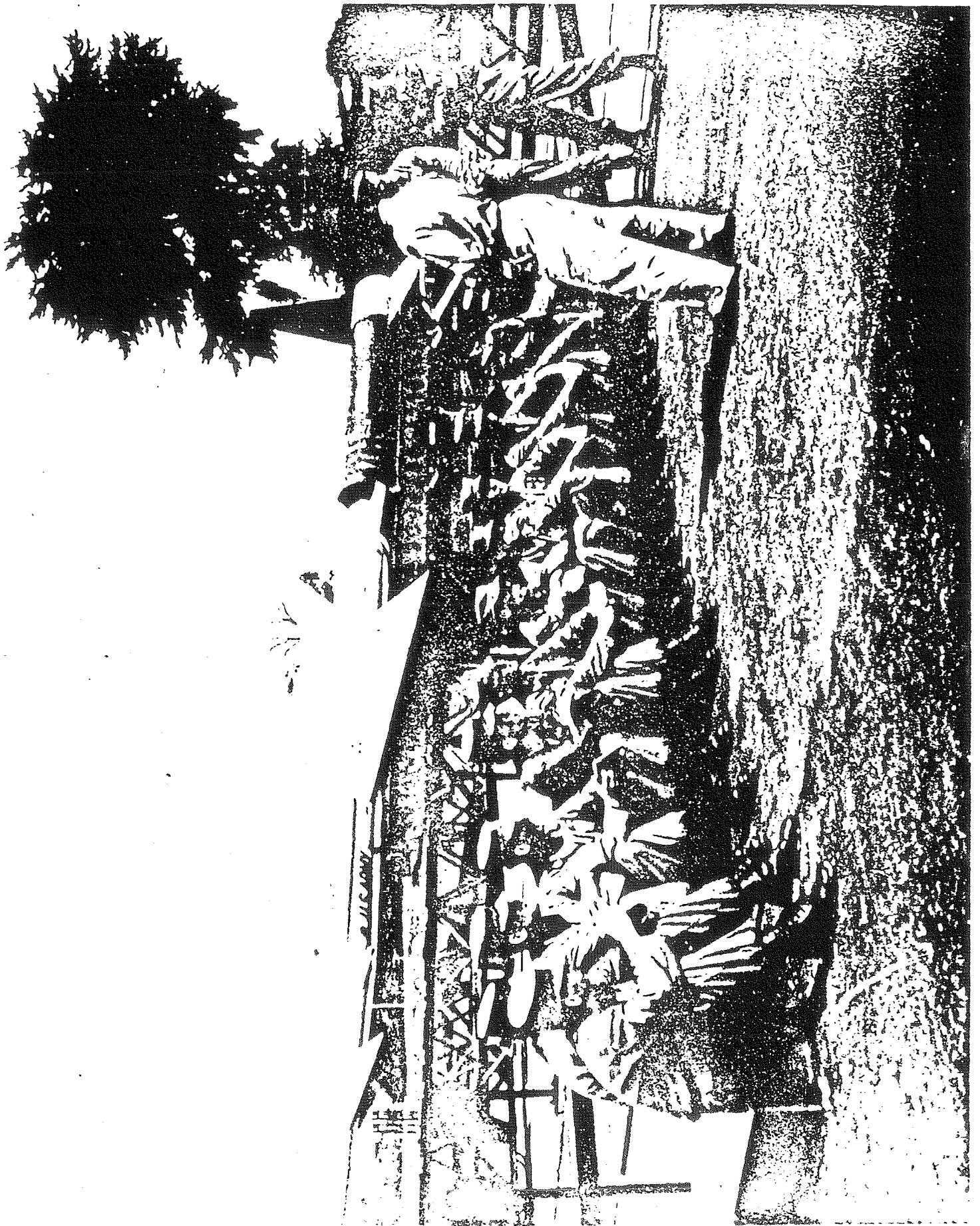
at Fort Bliss and other service schools. As often happens at the beginning of bold new departures, growing pains were experienced in the training of the Guard's first wave of missilemen--some of them of tangible, and others of intangible but no less discomfiting nature.

Although there is no practicable way of proving that the experience of California's trail-blazing 720th Missile Battalion was in fact typical of all the units that participated in the Guard's on-site Ajax program, the outstanding record of this unit after its assumption of a full-time, on-site role<sup>107</sup> suggests that the problems it encountered in training for this role were not unique. A major problem was the screening and selection of personnel for school training of specialists, operators, and crewmen, and subsequent unit package training at Fort Bliss.<sup>108</sup> In order to find personnel with the necessary potential for such training, a battery of aptitude tests was given to over 600 members of California's 234th AAA Group; but of the 191 officers and EM required, it was found that many had no desire to become full-time technicians, and outside recruiting became necessary to fill school quotas for many technician spaces.

That the 720th was not the only unit to be confronted with this aptitude problem is shown by the experience of 94 newly hired technicians of the 2d Missile Battalion,

202d Arty (Illinois ARNG) when, in the summer of 1959, they reported to Fort Bliss for training in Target Tracking Systems (TTS).<sup>109</sup> Of these 94 technicians, 83 percent failed to pass the pre-course examination, with the result that some of them had to be relieved or reassigned to different jobs within the unit. A basic cause of this failure was that 73 of the 77 individuals who had failed the examination had not received the required 120 hours of unit training prior to applying for employment as technicians--a deficiency in turn rooted in the inability of the FY 1959 budget to support early employment of technicians for on-the-job training prior to school training.

Another and more intangible problem that was met and overcome by the pioneering 720th was the need to stimulate, among officers and men alike, the sense of urgency and enthusiastic dedication necessary to full accomplishment of the training mission in armory drills and training assemblies.<sup>110</sup> This need, reflected by initially discouraging rates of absenteeism,<sup>111</sup> was forcefully underlined by the active Army brigade commander locally associated with the pioneering effort of the 720th.<sup>112</sup> It was acknowledged and reacted to with equally forceful command emphasis by General Beyers, the California ARNG brigade commander concerned, a key element of whose successful approach to the problem was the



ON-SITE AJAX TRAINING, 1959:  
Active Army instructor and  
Guardsmen of Michigan's Battery  
"C", 2nd Missile Battalion, 177th  
Artillery

threat of disciplinary action, to include relief from assignment, against repeated absentees.<sup>113</sup>

During the gun era, primary reliance for the on-site training of unit caretakers and M-day personnel alike was placed upon the efforts of active Army "host" units.<sup>114</sup> The results of this approach were generally successful,<sup>115</sup> but the approach itself was no longer fully applicable when Guard units assumed a full-time role in air defense. ARADCOM field commanders could, and did, continue to help ARNG units with on-the-job training courses which greatly facilitated the Guard's conversion to the Ajax system;<sup>116</sup> but the assumption of a full-time role by Guard units manned by school-trained technicians necessarily focused ARADCOM's supervisory responsibility for training upon the development of training directives and the conduct of inspections, evaluations, and exercises.<sup>117</sup>

In this area of evaluations, the Defense Combat Evaluation (DCE) posed a problem in that ARADCOM's initiation of the program in June 1966 was not accompanied by provision of adequate leadtime for ARNG planning. In order to meet ARADCOM's desire for participation of all ARNG personnel, M-day as well as technicians, in a tactical training evaluation designed to unfold over a period of up to 48 hours, ARNG unit commanders needed ample time to reserve for this purpose

appropriate chunks of the various kinds of training time available to them.<sup>118</sup>

This need was sharply emphasized by a DCE conducted in August 1966, only two months after initiation of the program in June. Because the ARNG battalion involved had already exhausted its statutory reservoir of time for annual active duty training (ANACDUTRA), the participation of M-day personnel in the DCE, far from being the desired maximum, was understandably nil.<sup>119</sup>

The solution to this problem required the provision of six months notice to ARNG units of scheduled DCEs, an informal policy promptly adopted, in September 1966, by Hq ARADCOM.<sup>120</sup> More importantly, it also required careful budgeting of available training time by ARNG commanders who, in addition to their other duties, must truly be "master-planners" in the field of personnel management.<sup>121</sup> This twofold solution produced, as shown by experience throughout FY 1967, a degree of Guard participation in DCEs which on average was commendable and, in many cases, outstanding.<sup>122</sup> And behind this participation was an intangible but ultimately governing factor: the dedication of M-day personnel who, in some cases at least, in all likelihood risked the ire of their civilian employers by their willingness to be weekday as well as weekend soldiers.

## Coordination and Cooperation

In retrospect as well as in current actuality, the Guard's on-site air defense program produces an impression of considerable complexity. This impression is founded in fact; and the inevitability of this complexity is ultimately attributable to the Constitution--more specifically, to the deliberate and characteristic fragmentation of authority and responsibility found in the militia clauses governing the National Guard.

Given the duality of the Guard's constitutional status and the need to exploit its peacetime potential for a full-time role in continental air defense, the multiplicity of authorities involved in the program and the consequent necessity for an extraordinary degree of coordination and cooperation have been striking facets of this complexity. In the counterpoint between Federal and State authority there have been many players, but no possibility of a single conductor with undivided authority and sole responsibility for harmonious orchestration of the whole.

The roster of players has indeed been lengthy: the Congress, with its purse-strings and statutes; the quasi-sovereign States, with their diverse capabilities and interests in the program; the NGB, a crucial "channel of communication"<sup>123</sup> between the States and DA; within DA,

the Chief of Staff, DCSOPS, and virtually all other major elements of the Army staff; beneath DA, ARADCOM and CONARC, with its ZI armies and schools, especially Fort Bliss; above DA, the Department of Defense and the JCS; beyond DA, CONAD/NORAD. All these have played parts in a program over which none could be the sole master. And underlying and complicating the program was the incessant theme of technological progress, with three movements, in little more than a decade, from one air defense weapon system to another by first the active Army and then, close behind, by the ARNG.

Inevitably, there were growing pains. More avoidably, there were failures of coordination.

Behind the uneven progression and unattained force goals of the on-site SSF gun program were factors which even the closest coordination of planning could not have overcome.<sup>124</sup> Delays in the scheduled turnover of active Army gun sites to the Guard were often caused by delays in the construction of active Army Ajax sites, which in turn were caused by the uncontrollable factor of strikes by construction workers. Difficulties in obtaining real estate for active Army Ajax sites also caused relatively unpredictable slippages in site-turnover schedules. But the fact that responsibility for obtaining suitable Guard sites was not clearly fixed until a review of the entire

program resulted, in October 1954, in a belated DA policy paper on this vital point,<sup>125</sup> reflected an avoidable lack of coordination on the part of the Army Staff.

The Guard's Ajax program also suffered from avoidable as well as unavoidable failures in high-level coordination, failures which resulted in "fraying patience of the States due to long delays, fluctuating policies and lack of firm planning guidance."<sup>126</sup>

An avoidable weakness was the grievous lack of communication between the two principals in the program within DA: ODCSOPS and the NGB. In a meeting between representatives of the two in the fall of 1956, the former's envoy admitted "the failure of ODCSOPS to coordinate actions concerning changes to the National Guard On-Site Program with the National Guard Bureau and the failure of ODCSOPS to inform the National Guard Bureau promptly of these changes after they were approved by the Chief of Staff."<sup>127</sup> Moreover, ODCSOPS at this time could not even clearly identify its tentatively programmed on-site non-active Army units as ARNG units, preferring--because of "pressure from an unidentified source outside DCSOPS"--to use the vaguer label "Reserve Component" for such units. This enigmatic lack of precision made it impossible, at a time when the Reserve Forces Act of 1955 was enlarging the USAR

side of the "Reserve Components" house,<sup>128</sup> for the NGB to inform the States of "firm National Guard missions."

Other and even less controllable causes, from the DA viewpoint, lay behind DA's "tentative" and "fast-changing plans" for the Guard's on-site Ajax program, causes which reflected fundamental limitations upon DA's ability to provide the States with the "stabilized advance planning knowledge" and "firm, long-range Department of the Army requirements" so deeply desired by the NGB.<sup>129</sup> Early in 1957, these unavoidable variables were vividly described by General Williston B. Palmer, then Vice Chief of Staff of the Army, to the Chief of the NGB, Maj. Gen. Edgar C. Erickson: 130.

...What appears to have been transpiring is a process of self-delusion all around, since no member of the Army staff, including the National Guard Bureau, and no State Adjutant General, is so naive as to believe that any agency of the US government can make long-range "commitments" which depend upon annual appropriations. We can make all of the plans, programs, and schedules we may wish, but every one of us knows that each year we learn at a very late minute whether we will get approval for requesting the money in the budget, and then we must go to Congress for the money.

...I particularly regret the unhappy position in which the Chief of the National Guard Bureau finds himself when these chickens come home to roost, as a result of his responsibility to represent the Secretary of the Army in dealings with the 52 Adjutants General of the States and territories.

Therefore I would be especially happy to work out with you a method by which we can make everything clear in the beginning and not find ourselves accused of "commitments" which never should have been considered firm commitments...

An overview of the Guard's on-site program since 1951 suggests that the conference method offered the efficacious kind of coordinating device sought by General Palmer. In a basically cooperative venture involving so many diverse participants, the conference was a demonstrably useful tool for the exposition and refinement of plans for subsequent collective action. Preliminary plans for the Guard's on-site gun program were presented in a high-level conference of all concerned in September 1952,<sup>131</sup> almost two years before the first ARNG gun unit actually achieved on-site SSF status. The plans of DA and ARADCOM for the Guard's 48-battery Hercules program, were presented, with explosive but productive results, in a conference which included all the States concerned, a full year before the formal dedication of the Guard's first Hercules battery in December 1962.<sup>132</sup>

A conspicuous gap in this list was the absence of a comprehensive conference during the planning phase of the Guard's Ajax program--an omission made doubly puzzling by the presumably known precedents of the gun era and the even greater requirement for understanding and coordination in

the far more revolutionary prospect of full-time Guard participation that lay ahead.

This omission cannot be attributed to lack of attempts, by ARADCOM as well as the NGB, to bring about a conference. Throughout the summer of 1957, the Chief of the NGB and ARADCOM's CG exchanged similar views on this common need, only to conclude that the "high rate of change" in "tentative plans" for the future of the ARNG in air defense barred any prospect of "productive results."<sup>133</sup> And as late as 1959, well after the 720th Missile Battalion's hard-won success as a guinea pig had turned lights green for full-scale implementation of the Guard's Ajax program--and despite General Hart's coolness toward the program--both ARADCOM and the NGB were still casting about, jointly but vainly, for means of obtaining "top-level definition of concepts and basic policies" for the program.<sup>134</sup> The understandably sketchy directive promulgated by DA in December 1957<sup>135</sup> had left unanswered questions which both of these key agencies could only hope, in default of a conference, to resolve by the normal processes of "coordinated staff action."<sup>136</sup> The conclusion that implementation of the Guard's Ajax program suffered from neglect of the conference method of planning coordination is inescapable.

Among the numerous organs for continuous and coordinated

staff action by the many headquarters involved since 1951 in the successive phases of the Guard's on-site program, ARADCOM's Office of Reserve Components is of particular interest to this study. Without denigration of the key roles played by State AGs and the pivotal importance of the NGB, ODCSOPS, and other elements of the Army staff, it is clear that the contributions of this relatively recent arrival on the scene of the ARNG's air defense effort have been healthily out of proportion to its small size.<sup>137</sup>

Subsequent to its somewhat belated birth in 1960 as the special staff agency of a field command charged, as early as 1957, with deployment planning for the Guard's Ajax program,<sup>138</sup> this office was not only instrumental in ARADCOM's large portion of the many planning efforts which culminated in the virtually flawless realization of the Guard's Hercules conversion schedule, but served also as a highly peripatetic trouble-shooter throughout this conversion program. From July 1963 through September 1965, for example, this small section conducted some 192 staff visits to ARNG units as they converted to the Hercules system, visiting each of the Guard's 48 batteries four times: once during the firing phase of its package training; once during its dual occupancy period with an active Army battery; on the day of its formal dedication and then, once again, six months thereafter.<sup>139</sup>

Without any doubt, the sine qua non which ultimately determined the outcome of all the plans for the Guard's on-site program since 1951 was the incoercible cooperation of the States and their volunteer Guardsmen. Here was the make-or-break assumption upon which all planning was necessarily based. As ARAACOM's CG pointed out at the beginning of the gun era, the active Army could "provide the guidance, the assistance, and the equipment"; but "the real burden" lay upon "the National Guard organization, down to the man who pulls the lanyard," sustained by the "unqualified support and faith of the public."<sup>140</sup> A decade later, as the Guard's conversion to a full-time role in missile air defense achieved completion, the record was such that ARADCOM's CG was moved to pay tribute to "the harmonious and cooperative spirit displayed by the Army National Guard."<sup>141</sup> Projected into the new and ceaselessly demanding role of continental air defense, this intangible essential of spirit continued to reflect all that was best in the Guard's ancient heritage of service.

#### Notes

<sup>1</sup>Art. I, Sec. 8.

<sup>2</sup>Art. II, Sec. 2.

<sup>3</sup>Although active Army commanders were granted authority to supervise "operational training" of ARNG on-site SSF units, such authority fell far short of operational control. See p. 44 above.

<sup>4</sup>According to DOD Summary, 1954, no fewer than three members of the detachment were on site at all times.

<sup>5</sup>Ltr, NGB to State AGs, 20 Nov 52, sub: Integration of National Guard Antiaircraft Artillery Units into the Army Antiaircraft Defense of the Continental United States, NGB File No. NG-CO 325.4.

<sup>6</sup>Ltr, DA, to CGs of Continental Armies, 21 Nov 51, sub: Subdelegation to Continental Army Commanders of Authority to Order Certain Units of the NG into Active Military Service, AGAO-S 325 63-M.

<sup>7</sup>At that time, 5th Region encompassed Michigan, Indiana, and parts of Wisconsin, Illinois, and Ohio, with headquarters at Fort Sheridan, Illinois.

<sup>8</sup>Dtd 18 Nov 57, sub: Use of National Guard to Man NIKE Sites, ADF- CG 325. Unless otherwise noted, all quotations in this paragraph are from this letter.

<sup>9</sup>Address in Oklahoma City, 14 Nov 57.

<sup>10</sup>All quotations in this and the following paragraph are from this letter, dated 2 Jul 59, an information copy of which also went to the JCS.

<sup>11</sup>See Memo, General Partridge to Lt. Gen. Charles E. Hart, 17 Apr 59, sub: Utilization of Reserve and National Guard Forces, which gives the date of this correspondence as 2 Dec 58. The fact that the NGB was well aware of these efforts is shown by NGB Conference Proceedings, 1960, p.10.

<sup>12</sup>Ibid.

<sup>13</sup>Comment on routing slip attached to ibid.

<sup>14</sup>Personal Ltr, 1 May 59.

<sup>15</sup>The information and quotations in this paragraph are drawn from a DA memorandum, 18 Aug 59, sub: Employment of National Guard Units, forwarded for the signature of Dewey Short, Asst Secretary of the Army (Manpower, Personnel and Reserve Forces) by the DCSOPS, DA, Lt. Gen. J.E. Moore.

<sup>16</sup>DA Deployment Policies, 1957. All quotations in this paragraph are from this source.

<sup>17</sup>ARADCOM Commanders' Conference Brochure, 12 Oct 59,  
p. IV-8. The two States were Pennsylvania and Michigan.

<sup>18</sup>ARADCOM's format was forwarded to region commanders in a letter dated 24 Jun 59, sub: Mutual Agreements Between USARADCOM Region Commanders and State Adjutants General, ADGCD. It is of interest to note that ARADCOM did not coordinate this format with NORAD/CONAD, the joint headquarters to whose operational control ARADCOM itself was subject. See personal Ltr of the NGB liaison officer to ARADCOM, Lt. Col. Lewis H. Kirk, Jr., to Maj. Gen. Donald W. McGowan, then Chief of the NGB, 16 Oct 59.

<sup>19</sup>Ltr, Maj. Gen. Donald W. McGowan to Lt. Col. Lewis H. Kirk, 2 Oct 59.

<sup>20</sup>Ibid.

<sup>21</sup>Ltr to Lt. Gen. James E. Moore, DCSOPS, DA, 20 Aug 59.

<sup>22</sup>Ltr, General Maxwell D. Taylor to Lt. Gen. Charles E. Hart, 5 Jun 59.

<sup>23</sup>Indirect support for this view is provided by the fact that the Eisenhower Administration dropped an effort to dissuade Congress from requiring maintenance of the ARNG at 400,000 men because, "according to one of Eisenhower's congressional liaison men," such effort was judged "not worth the carnage." See Martha Derthick, The National Guard in Politics op. cit., p. 136.

<sup>24</sup>Ltr, General Maxwell Taylor to Lt. Gen. Charles E. Hart, 5 Jun 59. According to an Interv of 12 May 68 with Brig. Gen. Howard E. Michelet, who in the spring of 1959 briefed President Eisenhower on this problem of command and control, several of the President's advisers convinced their chief that no legislation would be required, as the mutual-agreements approach, in their view, would be well within the emergency powers of the Presidency.

<sup>25</sup>Ltr, 14 Oct 59.

<sup>26</sup>ARADCOM Commanders' Conference Brochure, 12 Oct 59, p. IV-8.

<sup>27</sup>Interv with Colonel Max E. Billingsley, 29 Feb 68. Colonel Billingsley became the first chief of ARADCOM's Office of Army National Guard and Reserve Affairs (now the Office of Reserve Components) on 1 Jul 60.

<sup>28</sup>A member of the House Armed Service Committee staff in 1960 described General Reckord as "the most powerful man I have seen in fourteen years...he had tons of connections and no hesitation to use them." See Derthick, op.cit., p.96.

<sup>29</sup>Ltr to Maj. Gen. W.H. Hennig, CG of ARADCOM's 2d Region, 5 Aug 59.

<sup>30</sup>ARADCOM Standard Mutual Agreement, edition of 24 Jun 59, para 3e. The definition given in the current edition of the agreement, dated 3 Aug 65, is virtually identical.

<sup>31</sup>Ibid.

<sup>32</sup>Ltr to General Hennig, 5 Aug 59.

<sup>33</sup>Interv with Colonel Max E. Billingsley, 29 Feb 68. Unless otherwise noted, the information in this and the following paragraph is based upon this source and upon an undated draft of an NGB study on the historical background of the ARNG missile program.

<sup>34</sup>Although submitted by DOD as an amendment to the Federal Tort Claims Act, the measure was ultimately enacted as a separate National Guard Claims Act. Its major provisions authorized administrative settlement of claims in amounts up to \$5,000, with a proviso for departmental referral to the Congress of claims in excess of that amount. See 74 STAT, 878, 32 U.S.C. 715.

<sup>35</sup>See General Hart's letters to General Maxwell D. Taylor and Lt. Gen. James E. Moore, dated 1 May 59 and 20 Aug 59, respectively.

<sup>36</sup>Established on 10 May 60, this office was renamed Office of Reserve Components, its present designation, on 2 Nov 60.

<sup>37</sup>See General Reckord's Ltr to General Hennig, 5 Aug 59. See also Ltr, Maj. Gen. Donald W. McGowan, Chief, NGB to Lt. Col. Lewis H. Kirk, NGB Liaison Officer to ARADCOM, 2 Oct 59, in which "many states" (in addition to Maryland) were reported to feel that the mutual agreement format contained "a great deal of unnecessary language concerning administration, supply, and other matters which should not be part of an agreement."

<sup>38</sup>Interv with Colonel Max E. Billingsley, 1 Mar 68.

<sup>39</sup>ARADCOM Reg 130-10, sub: Standard Mutual Agreement for Employment of On-Site Army National Guard Missile Units, 3 Aug 65, with two changes dated 8 Nov 65 and 18 Nov 65. Unless otherwise indicated, the information in the following paragraph comes from this source.

<sup>40</sup>Two precedents indicate that this proviso can be somewhat elastic when civil disturbances become acute. During the Watts riot in 1965 and the Detroit riot in 1967, State authorities requested ARADCOM to temporarily release on-site ARNG personnel of units not in air defense alert status. Although these units were not actually used in riot control duties, ARADCOM granted the request in each of these cases. Interv with Colonel Max E. Billingsley, 1 Mar 68.

<sup>41</sup>Sec. 709, Title 32, U.S. Code. Unless otherwise indicated, the information in this paragraph is drawn from this law.

<sup>42</sup>NGR 51, 8 Jul 58, sub: Army and Air National Guard Technicians, para.2.

<sup>43</sup>Although directly and technically paid by the States, technician pay originates in Federal funds (Budget Program 3700, formerly BP 7600) which are allocated to the States by the NGB.

<sup>44</sup>DA G.O. No. 96, 9 Nov 51.

<sup>45</sup>21 Comp. Gen. 305 (1941).

<sup>46</sup>In 1958, for example, the average salary of air defense technicians appears to have been \$5,100 per year, according to Incl 1, Cost Data, to Summary Sheet, ODCSOPS to CofS, 19 Dec 58, OPS SW ADO 6. By 1966, their average yearly compensation, including Social Security employer contributions, was \$7,176, according to an NGB Fact Sheet, 30 Nov 66, sub: ARNG Air Defense Operation, NG-AROTA. The attractiveness of such a salary can be assumed, however, to vary in accordance with the technician's location, among other variables. To a school-trained radar technician who finds himself on a site in the vicinity of a commercial electronics plant, for example, other fields may well appear greener. According to an Interv with Colonel Max E. Billingsley, 1 Mar 68, the fact that most technicians resist such temptations can be attributed to expectations of legislation providing for retirement benefits, as well as loyalty to unit.

<sup>47</sup>NGR 51, 8 Jul 58, para 27.

<sup>48</sup>Ibid.

<sup>49</sup>For the earliest official statement of this requirement, see the NGB's policy letter, 20 Nov 52, sub: Integration of National Guard Antiaircraft Artillery Units into the Army Antiaircraft Defense of the Continental United States, NG-CO 325.4. This requirement expanded the legal requirement (Sec. 709, Title 32, U.S.C.) for at least one "caretaker" in a unit to be a military member of the unit.

<sup>50</sup>Ltr, Maj. Gen. D.W. McGowan to Maj. Gen. Anthony J.D. Biddle, AG of Pennsylvania, 25 Aug 60.

<sup>51</sup>Ibid.

<sup>52</sup>As of 17 Oct 67, three of the ARNG's 17 on-site battalions were commanded by ARNG officers who were not the supervisors of these battalions in the technician structure. Interv, Colonel Max E. Billingsley, 17 Oct 67.

<sup>53</sup>Ltr, Maj. Gen. Anthony J.D. Biddle, AG of Pennsylvania, to Maj. Gen. Donald W. McGowan, Chief of NGB, 8 Jul 60, as quoted in Gen. McGowan's reply of 25 Aug 60. The information in this paragraph is based upon this source and upon Ltr, Gen. McGowan to CG, USARADCOM, 13 Oct 61.

<sup>54</sup>Unless otherwise noted, the information in this and the following two paragraphs is based upon a memo for record of the AG of Washington, 23 May 62, sub: Chronological Sequence of Events in the Campaign by Local 6, Building Service Employee's International Union to Organize National Guard Missile Site Technicians, hereafter cited as Washington AG Memo, May 62. See also telg, ADH 52, 300615Z, Sep 61, CG 7th Region ARADCOM to CG ARADCOM.

<sup>55</sup>When a DA-directed change in technician manning structure authorized both a commissioned and warrant officer in the launcher area, the warrant officer, who was too old to qualify for a commission, was downgraded from launcher area supervisor to assistant and replaced by a former enlisted technician who had graduated from Army OCS and been commissioned a 2d Lt.

<sup>56</sup>This view, quoted in Washington AG Memo, May 1962, was shared by the State AG. According to the Seattle Post Intelligence for 1 Jun 62, General Haskett "revealed" that

"half of the (4) National Guard Nike missile sites in Washington were unable to do their full job for a while recently," and that "the situation 'most certainly' affected the military security of the state."

<sup>57</sup>According to an article in the Seattle Post Intelligence, 1 Jun 62, the union claim that the union membership of these individuals was the reason for this action was countered by the State AG's assertion that the deteriorating maintenance situation in the unit showed that these technicians, who "were supposed to supervise maintenance," had "failed to carry out their supervisory duties fully." In view of this conflict, it is of interest to note that none of the other technicians who joined the union lost their jobs.

<sup>58</sup>Washington AG Memo, May 62.

<sup>59</sup>Ibid.

<sup>60</sup>Ltr, JAG to CG, USARADCOM, 4 Oct 61, sub: Union Organizing Activities at National Guard On-Site Batteries, State of Washington.

<sup>61</sup>Washington AG Memo, May 62. See also the telg cited in n.54 above.

<sup>62</sup>See the Seattle Times, 30 Aug 62.

<sup>63</sup>Ibid., 28 Mar 63. The finality of this decision was confirmed by Tel Interv with Colonel Gerald J. Maguire, State Air Defense Officer of Washington, 31 May 68.

<sup>64</sup>The information in this paragraph is based upon Telg, CG 1st Region ARADCOM to CGARADCOM ADAGC 4-1938-2, 071433Z Apr 62, as well as Ltr, CGARADCOM to CINCNORAD, 10 Apr 62, and briefing by Colonel Max E. Billingsley to ARADCOM Commanders' Conference, 22-25 Sep 64, sub: ARNG Personnel Management.

<sup>65</sup>The information in this paragraph was provided by Colonel Charles J. McClure, State Air Defense Officer of New York, in a Tel Interv on 8 Mar 68.

<sup>66</sup>Unless otherwise noted, the information in this and the following paragraph is based upon Ltr, Air Defense Officer of Maryland to CG 35th Arty Bde (AD), 22 Apr 64, sub: Newspaper Report of Technician Overtime.

<sup>67</sup>An inclosure to Ltr, Air Defense Officer of Maryland to Lt. Col. J.A. Lighthall of Hq 1st Region, ARADCOM, 14 Aug 64, shows that overtime for these technicians ranged from a high of 1440 hours to a low of 180 hours.

<sup>68</sup>Ltr, Maj. Gen. Winston P. Wilson, Chief, NGB, to Lt. Gen. Milton A. Reckord, AG of Maryland, 28 May 65.

<sup>69</sup>Unless otherwise noted, the information in this paragraph comes from the useful summary of technician fringe benefits contained in the letter cited in n.50 above.

<sup>70</sup>NGB Fact Sheet, 30 Nov 66, sub: ARNG Air Defense Operation, NG-AROTA.

<sup>71</sup>Interv, Colonel Max E. Billingsley, 18 Oct 67.

<sup>72</sup>Title II, H.R. 2, 90th Congress, 1st Session. The information in the following paragraph is from this source.

<sup>73</sup>Sec. 7311, Title 5, U.S.C.

<sup>74</sup>Press release, Senate Armed Services Committee, 7 Nov 67.

<sup>75</sup>At its financial height as FY 1957 ended, the Guard's on-site gun program cost \$11,216,194 for 1,759 air defense technicians and \$1,506,215 for site maintenance and improvement. In sharp contrast, the FY 1967 cost for air defense technicians alone was \$36,338,420 for 5,043 personnel. See NGB Report for FY 1957 and FY 1967, pp.21, 38 and p.22, respectively.

<sup>76</sup>Memo, Hugh M. Milton, II to the Secretary of the Army, 6 Apr 60, sub: National Guard On-Site NIKE Battalions.

<sup>77</sup>DOD Summary, 1954, pp.3-4.

<sup>78</sup>See draft, 1 May 67, of Appendix IV to Annex E, National Guard Participation, SAM-D Weapons Effectiveness Study, p.E-IV-7.

<sup>79</sup>Summary of Proceedings, National Guard Anti-aircraft Artillery Conference Held at Pentagon, Washington, D.C., 30 Nov 54, pp.1-3. The information in this paragraph is based upon this source, hereafter cited as Conference Proceedings, Nov 54.

<sup>80</sup>As of September 1956, the 201st and 202d AAA Battalions (both 90-mm gun) were on site at St. Louis and St. Charles, respectively, but neither unit had achieved SSF status. See Annex D, Task Organization, to AA-OP-US (1956).

<sup>81</sup>Ltr, Maj. Gen. Joseph J. Scannell to Maj. Gen. W.H. Hennig, CG of ARADCOM's 2d Region, 21 Oct 58. This protest was tempered by General Scannell's full recognition of the fact that "exigent circumstances" required on-site units to be "tied to certain locations." See his Ltr to Maj. Gen. Parmer W. Edwards, 20 May 58.

<sup>82</sup>Reply of General Hennig to ibid., as suggested in an undated Ltr from Maj. Gen. Parmer W. Edwards, Deputy Commander of ARADCOM, to the latter.

<sup>83</sup>Residence of technicians on site in government-owned family housing was authorized by DA Ltr to Chief of NGB and CGs, 26 May 58, sub: Policies for Deployment of Army National Guard On-Site Battalions, AGAM-P(M) 370.5, DCSOPS.

<sup>84</sup>Information in this and the following two paragraphs was obtained by Tel Interv on 19 Apr 68 with Capt. Jack E. Davenport, the commander/supervisor of this unit.

<sup>85</sup>Staff Study, Office of Reserve Components, Hq ARADCOM, 6 Nov 61, sub: Retention of Army National Guard Technicians, ADSN, Tab B.

<sup>86</sup>DF, Office of Reserve Components, to CofS, Hq ARADCOM, 11 Dec 61, sub: Trip Report, ADSN. Unless otherwise indicated, the information in this paragraph is based on this source.

<sup>87</sup>Interv with Colonel Max E. Billingsley, 17 Oct 67.

<sup>88</sup>Ltr, General McGowan to General Wood, 21 Dec 61. The information in this paragraph is based on this source.

<sup>89</sup>See General Wood's Ltr to CINCONAD, 29 Dec 61, sub: National Guard Conversion to Hercules, ADSN, and CINCONAD's reply, 11 Jan 62, same sub, CPPP-PL.

<sup>90</sup>DF, Office of Reserve Components to CofS, Hq ARADCOM, 13 Dec 61, sub: Trip Report, ADSN.

<sup>91</sup>Staff Study, Plans Div, G-3, Hq ARADCOM, 2 Oct 62, sub: Conversion of Hercules Batteries to ARNG, ADGCF.

<sup>92</sup>See, for example, the Nike Hera Study, 1967.

<sup>93</sup>ARADCOM Commanders' Conference Brochure, 13 Oct 58,  
p.IV-11.

<sup>94</sup>See pp.197-198 above.

<sup>95</sup>Draft NGB Study, apparently dated 24 Jan 61, sub:  
Missile Units, Background of the Program.

<sup>96</sup>ARADCOM Commanders' Conference Brochure, 13 Jan 58,  
p.VI-7.

<sup>97</sup>Staff Study, Plans Div, Hq ARADCOM, 2 Oct 62, sub:  
Conversion of Hercules Batteries to ARNG.

<sup>98</sup>Ibid.

<sup>99</sup>See Fact Sheet, DCSOPS, Hq ARADCOM, sub: 1967 Status of  
CONUS Defenses, ARNG Fire Units to Total Fire Units. The  
five defenses are: New England; Washington-Baltimore;  
Hampton Roads; Niagara-Buffalo; and Seattle.

<sup>100</sup>AR 135-10, 20 Sep 61, sub: Reserve Components, Mini-  
mum Standards for the Status of Readiness of Reserve Compo-  
nent Units. This edition of the regulation is still in  
effect.

<sup>101</sup>Interv with Colonel Max E. Billingsley, 17 Oct 67.

<sup>102</sup>AAA Units in Defense, p.12.

<sup>103</sup>See Tab B, Chronology of Events Concerning Responsi-  
bility for National Guard AA Program, to DF, G-3 to CofS,  
ARAACOM 5 Dec 55, sub: ARAACOM Reply to CONARC 1 June  
1955 Letter on National Guard, ADOAA-3, P&O.

<sup>104</sup>Ibid.

<sup>105</sup>See ibid. and Ltr, DA to Chief of NGB and CGs, ARAACOM  
and CONARC, 11 Jan 56, sub: Reassignment of Responsibilities  
for Supervision of Training of National Guard Non-Divisional  
Anti-aircraft Units, AGAM-P(M) 353, DCS OPS. The partici-  
pants in the conference referred to were: General Williston  
B. Palmer, Vice Chief of Staff of the Army; General John E.  
Dahlquist, CG, CONARC; and Lt. Gen. Stanley R. Mickelsen, CG  
ARAACOM.

106 When the gun era ended and the SSF evolved into a full-time partner of ARADCOM as the "ARNG Air Defense Task Organization, CONUS," the wording of this basic principle was necessarily altered, but the principle itself remained. See, for example, Ltr, DA to CG, ARADCOM, 5 Mar 62, sub: Policies for National Guard Participation in CONUS Air Defense, AGAMP(M) 322, DCSOPS, and AR 130-10, 11 Mar 65, sub: Army National Guard Air Defense Program. In both of these basic policy documents, the important proviso was added that active Army supervision of training would be exercised through ARNG command channels.

107 See, for example, the achievements of this unit--now the 4th Missile Bn, 251st Arty--as reflected in Chart 14 on p. 176 above. Not noted in the chart is the fact that this unit was the high-scoring battalion (of four or more fire units) in annual service practice for the period 1 January-30 June 1961, less than three years after the unit went on site.

108 Briefing by Lt. Col. Julian A. Phillipson, CO of the 720th Missile Bn, to Maj. Gen. Edgar C. Erickson, Chief, NGB, and others, 30 Mar 58. The remaining information in this paragraph is drawn from this source; from a memo for record by Lt. Col. Joseph E. Doyle, advisor to the 234th AAA Gp, apparently written in October or November of 1957, sub: Plan for Test as National Guard NIKE Battalion; and from an interview with Lt. Col. Neil E. Allgood, a member of the 720th at the time and now CO of the battalion, 18 Mar 68.

109 Ltr, Maj. Gen. Donald W. McGowan, Chief of Army Division, NGB, to Lt. Gen. Charles E. Hart, CG of ARADCOM, 6 Jul 59. The information in this paragraph is from this source.

110 See Ltr, Hq 6th Region, ARADCOM, to the AG of California, 23 Sep 57, sub: Nike Conversion Training, 720th AAA Missile Battalion, SARC-3NG 325, which emphasized the need to "stimulate enthusiasm on the part of the enlisted men" and "the appearance of enthusiasm by battery officers in training and all other activities."

111 In contrast to a prescribed goal of not less than 90 percent, average drill attendance for 1957 was 83.3 percent, according to the briefing cited in n.108 above.

112 See Ltr, Brig. Gen. W.A. Perry, CO of 47th AAA Bde,

to Brig. Gen. Clifford F. Beyers, 21 Sep 57, sub: National Guard Conversion Training, BRCG 353.

<sup>113</sup>Ltr, Brig. Gen. Clifford F. Beyers, CG of the 720th's parent 114th AAA Bde, to COs of 234th AAA Gp and 720th AAA Msl Bn, 4 Oct 57, sub: National Guard Conversion Training. By March of 1958, average drill attendance had risen to "better than 90 percent," according to the briefing cited in n. 108 above.

<sup>114</sup>See pp. 46-47 above.

<sup>115</sup>See p. 62 above, as well as Conference Proceedings, Nov 54, p. 3.

<sup>116</sup>See Ltr, Maj. Gen. Edgar C. Erickson, Chief, NGB, to Lt. Gen. Charles E. Hart, CG of ARADCOM, 8 Apr 58.

<sup>117</sup>As successive examples of these responsibilities, see Ltr, DA to Chief of NGB and CGs, 7 Sep 62, sub: Policies for National Guard Participation in CONUS Air Defense, AGAM-P(M) 322, DCSOPS, Sec. II, Training, to Annex A; and ARADCOM Reg 130-1, 18 Jul 66, sub: Army National Guard, Air Defense Program, CONUS, Sec. V, Training.

<sup>118</sup>In addition to the 15 days allotted for annual active duty training (ANACDUTRA), 48 drill periods are available.

<sup>119</sup>DF, DCSOPS to Office of Reserve Components, Hq ARADCOM, 19 Sep 66, sub: Comment on Hampton Roads Defense.

<sup>120</sup>Interv, Colonel Max E. Billingsley, 17 Oct 67.

<sup>121</sup>Briefing, Office of Reserve Components to ARADCOM Commanders' Conference, 22-25 Sep 64, sub: ARNG Personnel Management.

<sup>122</sup>Interv with Maj. Robert F. Elliott, a member of ARADCOM's DCE team throughout FY 1967.

<sup>123</sup>PL 85-599, 85th Congress, as summarized in NGB Report FY 1959, p. 4.

<sup>124</sup>Unless otherwise noted, the information in this paragraph is based upon an NGB briefing to the Adjutants General Conference, 4 Nov 54, sub: Summary of National Guard AAA Program.

<sup>125</sup>Ltr, DA to Chief of NGB and CGs, 18 Oct 54, sub: National Guard Antiaircraft Onsite Program, AGAC-C(M) 601, G-3. Continental Army commanders were made responsible for "the preparation of programs for construction in each defense area based on requirements determined by Army Anti-aircraft Command and the states, submission of these programs to Department of the Army for approval, and guidance of the...Corps of Engineers in execution of the construction and land acquisition." The adoption of the turnover solution, by which active Army gun sites were transferred to the ARNG, in practice obviated the need for land acquisition.

<sup>126</sup>Ltr, Maj. Gen. Donald W. McGowan, Chief, Army Division, NGB, to Lt. Gen. Stanley R. Mickelsen, 2 Jul 57.

<sup>127</sup>Unless otherwise noted, the information in this paragraph is from NGB Memo for Record by Colonel Charles A. Young, 5 Oct 56, sub: Changes to the National Guard AA Program. The OCDCSOPS representative was Colonel Samuel McC. Goodwin, of that office's Plans Directorate.

<sup>128</sup>For a detailed description of the political context of this and other developments affecting the National Guard in 1956, see Derthick, op.cit., pp.119-122, 136-139.

<sup>129</sup>Memo, Chief of NGB to Chief of Staff, DA, undated copy probably written in Jan 57, sub: Conference National Guard Affairs.

<sup>130</sup>Personal Ltr dated 1 Feb 57.

<sup>131</sup>See pp. 107, 225-226 above.

<sup>132</sup>DF, Office of Reserve Components to CofS, Hq ARADCOM, 11 Dec 61, sub: Trip Report, ADSN.

<sup>133</sup>See Ltrs, Lt. Gen. Stanley R. Mickelsen, CGARADCOM, to Maj. Gen. Edgar C. Erickson, Chief of NGB, 7 Jun 57; Maj. Gen. Donald W. McGowan, Chief of Army Division, NGB, to General Mickelsen, 2 Jul 57; and Mickelsen to Erickson, 15 Jul 57. The quotations are from Ltr, Erickson to Mickelsen, 30 Aug 57.

<sup>134</sup>See Ltr, Erickson to Hart, 8 Apr 59, and Hart's reply of 22 Apr 59. The quotations are from the latter.

<sup>135</sup>See pp. 93-94 above.

136 Ltr, Maj. Gen. D.W. McGowan, Chief of NGB, to General Hart, undated copy probably written in July or August 1959.

137 Since its establishment on 10 May 1960, this office has had the same chief, Colonel Max E. Billingsley, a Regular Army officer, and two other officers, one from the Guard and one from the USAR.

138 DA Ltr, DA Deployment Policies, 1957.

139 DF, Office of Res Comps to CofS, Hq ARADCOM, 10 Jan 64, sub: Accomplishments During CY 1963 and Planned Actions During CY 1964, ADSN, supplemented by Interv with Colonel Max E. Billingsley, 17 Oct 67.

140 Remarks of Lt. Gen. John T. Lewis in unpaginated Brochure of the Army Antiaircraft Conference, 18 Sep 52.

141 Ltr, Lt. Gen. Robert J. Wood to Maj. Gen. Donald W. McGowan, Chief of NGB, 10 Mar 61.

## CHAPTER VI

### Conclusions

#### A New Departure

Viewed as an entity, the ever-evolving role of the Army National Guard in the peacetime air defense of the continental United States constitutes a unique phenomenon. The annals of no other major Western power can offer an historically valid precedent for this venture.

In one of the few historical summaries of the ARNG on-site program still extant, the somewhat conjectural statement is made that "the origin of the concept for utilization of the ARNG in an active air defense role may date from British and German employments of military auxiliaries during World War II."<sup>1</sup> If the Guard's on-site role can be defined as the full-time participation, in time of at least technical peace, of "organized militia"<sup>2</sup> in air defense under the operational control of active Army authority, even a brief survey of German and British experience shows that any resemblance of this role to such experience is at best superficial. This is true even when the political factor of American federalism, with its reflection in the dual status of the National Guard and consequent complications of command and control, is excluded from comparative consideration.

Any comparison of American federalism and the spurious federal structure of the Third Reich is not only an exercise in fatuity, but unnecessary to demonstrate the absence of a parallel between German experience with anti-aircraft auxiliaries and the ARNG program. Even if Guardsmen were wrongfully considered to be equivalent to the Heimatflak<sup>3</sup>--a motley horde of Hitler Youth, women, men too old for front-line service, Croats, and Russian prisoners of war who supplemented the regular AAA forces of the Luftwaffe<sup>4</sup>--there would be no valid parallel. Use of these auxiliaries was not initiated until 1943, long after the outbreak of war; before the war, German air defense was the exclusive province of the regular forces, first the Army and then, after 1935, the Luftwaffe.<sup>5</sup> The contrast with the ARNG program, wherein full-time Guard personnel man air defense sites 24 hours a day before the outbreak of war, is obvious.

Analysis of British experience also fails to yield any real precedent for the ARNG's on-site program. It is true that Britain's Territorial Army, which is far closer to the National Guard of the U.S. in concept, organization, and spirit than the Third Reich's para-military forces ever were, was responsible for manning the United Kingdom's AAA defenses before as well as during World War II.<sup>6</sup> The manner in which the prewar phase of this responsibility was carried out,

however, presents a contrast rather than a parallel to the American program.

Largely obsolete materiel of World War I vintage was not tactically deployed on site but stored at locations usually at some distance from the drill-hall, or armory, of the unit.<sup>7</sup> Even after the outbreak of war and as late as the end of 1940, attempts to position equipment in tactically desirable locations met with the protests of irate golfers, polo players, and landowners--protests which, vented as they were through sympathetic Members of Parliament, were "in nearly all cases...entirely successful."

Although an emergency deployment during the Munich Crisis in September of 1938 brought out some 50,000 Territorials to man AAA defenses, only 126 guns were put into position, often with improper mixes of ammunition and fuze and without predictors; the Government admitted in Parliament that "half (of these guns) would not have been able to engage enemy aircraft if these had appeared." When the crisis was over, the unpaid Territorials returned to their civilian jobs, "badly out of pocket." Even after the outbreak of war, the volunteer members of Territorial gun and searchlight crews continued to live at home and commute to their sites; "the wealthier members of the unit either financed the poorer members, or gave them lifts in their

cars." The state of training in these Territorial units was indicated by the fact that it was not until "later on in the War, when the country became accustomed to the noise of guns (that) what was known as 'on site' practice was permitted..."

Neither German nor British experience, it is clear, can provide a valid precedent or parallel for the on-site air defense program of the Army National Guard of the United States. When General J. Lawton Collins in 1951 took the first step toward "preferential treatment" for selected AAA units of the National Guard, he was breaking new ground; and from the subsequent development of the program emerged a truly unique phenomenon.<sup>8</sup>

#### Major Achievements

The conclusion that this unprecedented experiment has been a success rests upon three pillars of demonstrated fact.

The first of these has been the high quality of Guard performance. No objective scrutiny of ARNG performance data gleaned by the evaluations of Headquarters ARADCOM can yield any interpretation other than success. Indeed, on balance and with due allowance for the growing pains experienced at the outset of the Ajax phase of the Guard's on-site missile

program, ARNG performance has more than matched that of ARADCOM's active Army component, particularly in the vital areas of shooting ability and, as reflected by the limited samples provided by ARADCOM evaluations, operational readiness. Bearing in mind that this performance has been achieved by units which currently constitute 43 percent of the Nike Hercules defense of the CONUS, quantity has combined with quality to produce a major Guard contribution to national security.

A second species of success has been the smooth transition from one weapon system to another effected, in coordinated tandem, by first the active Army and then the Guard. The Guard has kept in step with the rapid pace of air defense technology. The fact that it has been one step behind the active Army has been deliberate: by taking over an established weapon system of the active Army, the Guard has helped to keep the CONUS air defense guard up while the active Army moved on to a more advanced weapon system. In doing so, the Guard itself has spanned the same weapons spectrum as the active Army, moving, in less than a decade, from a gun system that shot 25-pound projectiles up to 36,000 feet onward to a nuclear-capable missile system that reaches an ionospheric ceiling more than 30 miles high. Because the end of such metamorphoses is not yet in sight, it is "comforting," as a

former ARADCOM CG once noted, to reflect on the fact that the past challenges of rapid technological change have not found the Guard wanting.<sup>9</sup>

Lastly, there can be no doubt that the Guard's air defense program has resulted in significant Federal savings, not only in funds but in active Army personnel spaces; and the quality of Guard performance proves that these savings have been gained at no expense to air defense capabilities.

Precise calculations of all the dollars saved since the inception of the Guard's CONUS air defense program are probably impossible, owing to the absence of detailed cost data from the gun era of Guard participation and the uncertain bases of the cost comparisons computed during the Ajax phase of the program. Nevertheless, it is clear that substantial monetary savings have been realized; and the conservative cost accounting used in the most recent and comprehensive comparison of ARNG and active Army costs, which yields an annual saving of \$212,000 for each of 48 ARNG Hercules batteries, could probably be legitimately expanded to show even greater savings.<sup>10</sup>

The personnel space savings realized by the active Army have been timely as well as significant. The exigencies of New Look economies and Viet-Nam emergencies alike have been eased for the active Army by the Guard's air defense program:

every Guard technician on site has meant, in the long run, that an additional combat soldier could be made available for overseas duty without lowering the air defense guard of the homeland or increasing the authorized strength ceilings of the active Army. In the contemporary era of "flexible response" to an international situation in which the classic capabilities of ground combat forces have proved to be at a premium, such personnel savings have been of perhaps even greater value than the monetary advantages derived from the Guard's participation in continental air defense.

#### Cooperative Federalism in National Security

In a brief but penetrating essay on American federalism, Daniel J. Elazar defines "cooperative federalism" as "the sharing of responsibilities for given functions by the federal and state governments," as distinct from a more commonly held concept of "dual federalism" that "implies a division of functions between governments as well as a division of governmental structures."<sup>11</sup> Tracing the pragmatic tradition of cooperative federalism back to the joint Federal-State canal-construction projects of the early nineteenth century and even further, to the Bank of North

America established by the Confederation Congress in 1784, Elazar finds that the architects of this tradition, "avoiding the premises of legalistic thought...did not view the two planes (of Federal and State government) as rivals, but as partners in government who were to share responsibility for a wide range of activities for the mutual benefit of the nation as a whole and for its constituent states."<sup>12</sup>

In its political dimension, the participation of the Army National Guard in peacetime air defense is a novel but consistent extension, in the field of national security, of this little-known but venerable tradition of cooperative federalism. The fact that air defense is basically a Federal mission, and that the original impetus for State participation therein came from the Federal Government rather than from the States (as has usually been the case), does not change the conclusion that the Guard's on-site air defense program has provided a distinguished and heartening example of cooperative federalism in action.

Nor does the fact that numerous States have found it to be in their enlightened self-interest to share in the accomplishment of the air defense mission alter the incoercible, cooperative, and voluntary basis of their effort, or detract from its value. And the fact that

several States, during the Guard's conversion to the Hercules system, aggressively sought greater shares than those planned for them--and clearly prevailed in this sometimes querulous quest--shows that a State's voluntary participation in air defense, once obtained, can be more than counted on to continue. Such obdurate consistency of cooperation can pose problems of its own, as active Army deployment planners ruefully discovered in 1962; but over-cooperation is perhaps better, in the long run, than non-cooperation.

#### Lessons Learned

The most salient lessons that can be learned from the record of planning and implementation in the Guard's successive waves of CONUS air defense deployments can be summarized under three generalized headings: relative immobility, in a legal and socio-economic rather than tactical sense; permanence; and professionalism.

Unlike active Army units, which can be activated and deployed with virtually untrammelled freedom to follow the dictates of purely military necessity, successful exploitation of the Guard's air defense potential requires careful assessment of many non-military factors. A particular State's potential supply of high-aptitude applicants for employment

as technicians; the proximity of desired sites to population centers; commuting distances; availability of low-cost or government housing; legal obstacles to the use of one State's troops in another State, and to command of the troops of one State by officers of another State--such factors impose limits upon the utilization of Guard forces not found, to a similar extent, in the active Army. These limits are not imposed by recruitment possibilities, as technicians can be recruited from every corner of a particular State, and even from out of State, for the manning of a particular site;<sup>13</sup> but welfare, morale, and family considerations combine with the other factors noted to limit the practicability of Guard deployments to locations which are within reasonable proximity of population centers.

As the resolution of the technician-retention problem in the Hercules phase of the program forcefully demonstrated, the participation of a particular State in the program, once established, is as permanent as almost anything can be on the ever-shifting scene of Federal-State relationships. Units can and have been moved within a State; but an overall deployment plan that proposes to eliminate or seriously reduce the established technician strength of a particular State is sure to encounter serious and probably successful resistance. A corollary of this principle is that the technicians of those States long established in the Guard's air defense program must first be "taken care of," in any proposed changes,

before breaking ground in States new to the program.

Finally, the high degree of professionalism attainable-- and in fact attained--by ARNG technicians is, of all the salient lessons learned, perhaps the most valuable. Even if no monetary or active Army personnel savings had been realized from the Guard's air defense program, the capital of specialized skills and experience built up by the program would make of it a major contribution to national security. Nurtured in active Army schools, tested by active Army yardsticks, and sharpened by the unbroken experience which results from stability of job and unit assignment the active Army component of ARADCOM cannot hope to match, these skills have become an indispensable asset in the life-or-death business of contemporary air defense. By dedicated and indisputably professional performance as well as active Army policy, the Guard's on-site units have become organically inseparable members of an ARADCOM team which embodies, in the ceaseless reality of round-the-clock readiness, the One-Army concept.

In this highly specialized professionalism there may well be a lesson of pointed pertinence for the Guard itself. Martha Derthick, in her study of the Guard as a political phenomenon, observes that the validity of its "claim to primacy as a reserve force" is in the long run dependent upon its "capacity...to adapt to environmental circumstances,"

rather than upon its declining political influence.<sup>14</sup> If "environmental circumstances" can be interpreted to include the threat of aerospace attack against the United States, the Guard has shown, by its highly professional response to the unremitting requirement for continental air defense, its capacity to adapt to a vitally important "environmental circumstance." The pattern of the Guard's future must here remain unstudied. But the Guard's past contributions to the air defense of the United States can be known; and this record has been such that planning for national security, in this area of unprecedented and total danger, can ignore it only at the nation's peril.

#### Notes

<sup>1</sup>Fact Sheet, OCDCSOPS, DA to CofS, 4 Aug 59, sub: Background and Status, ARNG On-Site Program, 1950-1959, OCDCSOPS/OPS SW ADO-11.

<sup>2</sup>See AR 320-5, 23 Apr 65, sub: Dictionary of United States Army Terms.

<sup>3</sup>Home AAA Forces.

<sup>4</sup>According to a post-war intelligence report prepared in August 1945 at the direction of General Carl Spaatz, CG of U.S. Strategic Air Forces in Europe, such auxiliaries comprised some 44 percent of a total AAA strength, as of 1 April 1945, of 656,000. Of these 288,000 auxiliaries, about 75,000 were school-boy Luftwaffenhelfer (Air Force Assistants) drawn from the ranks of the Hitler Youth and averaging about 16 years of age. Approximately 15,000 women performed secretarial and other staff-type duties. The contingent of Croatian soldiers numbered about 12,000, and approximately

45,000 Russian PWs were recruited, on a voluntary basis, for AAA service. The balance of 141,000 auxiliaries consisted of Labor Service (Reichsarbeitsdienst) workers, whose average age was about 55, and who performed AAA duties on a three-shift basis. All these auxiliaries of the Heimatflak were under Luftwaffe command. It is of interest to note that this heterogeneous and part-time force contributed to German AAA efforts which this authoritative report acknowledges to have been significant: for example, "many more (U.S.) bombers were lost to flak than to fighters" and "from June to August 1944...12,687 of our bombers were damaged by flak and only 182 by fighters"; also, "analysis has shown that bomb accuracy on missions unopposed by flak was 10 times greater than when opposed." See "German Ground Defenses," The Contribution of Air Power to the Defeat of Germany (unpublished MS. prepared by ACofS, A-2, Hq U.S. Air Forces in Europe, 7 August 1945), Sections 2,4, and 6.

<sup>5</sup>See Horst-Adalbert Koch, Flak: Die Geschichte der Deutschen Flakartillerie, 1935-1939 (Bad Nauheim: Verlag Hans-Nenning Podzun, 1954) for a history of German AAA prior to World War II.

<sup>6</sup>During World War I, British AAA defenses were until 1917 manned by civilian volunteers enrolled in the Royal Navy Volunteer Reserve Corps; after 1917, troops of the Regular Army took over. At the outbreak of World War II, approximately 69,000 Territorial Army men were organized into an A.A. Command of seven AA divisions, all of which were under the command of Regular Army officers, with a small nucleus of Regular administrative and maintenance personnel, amounting in all to about 1,000 officers and men in each battery and regiment. The A.A. Command was under the operational control of a Royal Air Force command, the Air Defense of Great Britain. Recalling General Maxwell Taylor's suggestion for the use of WACs in 1951, it is of interest to note that some 170,000 women of the A.T.S. (Auxiliary Territorial Service) after 1941 served in "mixed batteries" of Britain's A.A. Command during World War II, performing every job except the actual firing of guns. One of these A.T.S. in the A.A. Command was Corporal Mary Churchill, the Prime Minister's daughter. See the authoritative account by General Sir Frederick Pile, Commander-in-Chief of Britain's Anti-Aircraft Command from 1939 to 1945, Ack-Ack, Britain's Defence Against Air Attack During the Second World War (London: George G. Harrap & Co., Ltd.,

1949), pp. 43-97, for a detailed description of British attempts to achieve an effective AA defense prior to World War II, and the problems and achievements of the command during that war.

<sup>7</sup>The information in this and the following paragraph is drawn from ibid., pp.71-75, 81-82, 85, 91, 97, and 104.

<sup>8</sup>Like the major Western powers, the Soviet Union fails to offer a precedent for the ARNG on-site air defense program. During World War II, AAA home defenses were manned by active Army troops under a regional or local air defense command which controlled all air defense weapons, aircraft as well as AAA. This principle has been continued under the current system, in which the P.V.O. (Protiv-Vozdushnaya Oborona) constitutes an independent arm composed of AAA divisions and divisions of fighter aircraft, headed up by a Deputy Minister of War. See Generalleutnant A.D. Walter Schwabedissen, The Russian Air Force in the Eyes of German Commanders (USAF HISTORICAL STUDIES NO. 175, 1960), pp.32-33, for a description of Soviet AAA organization during World War II. Information on current Soviet air defense organization was obtained from DCS J-2, Hq NORAD.

<sup>9</sup>See address of Lt. Gen. Robert J. Wood to the 1960 meeting of the National Guard Association.

<sup>10</sup>See pp. 115-117 and n. 116, Chapter III above for the detailed rationale behind this conclusion.

<sup>11</sup>"Federal-State Collaboration in the Nineteenth-Century United States," reprinted from the Political Science Quarterly, No. 79 (June 1964) in Aaron Wildavsky, ed., American Federalism in Perspective (Boston: Little, Brown and Company, 1967), p.221.

<sup>12</sup>Ibid., p.194.

<sup>13</sup>Btry "B" of Missouri's 3d Bn, 128th Arty, a unit of the Kansas City defense, provides a case in point. Technicians for this battery, which went on site 35 southeast of Kansas City in February 1964, came from all over Missouri, and some from States as distant as Louisiana, Michigan, and Illinois: only one came from Kansas City itself. Interv with Maj. Giles A. Bax, a former CO of this unit, 5 Jun 68.

<sup>14</sup>Op.cit., pp.178-179. In another work on the same subject, Derthick demonstrates that among the "intrinsic attributes" of the Guard's political power have been "predominant values in American society" which are manifested as "a bias in favor of dispersion of power and a bias against military professionalism." Nonetheless, "the decline of antimilitarism in American society since World War II has robbed the Guard of (this) major environmental advantage," and "the concept that the Guard should safeguard the liberties of American citizens by checking the military power of the professional army has been relegated to the closet of our quaint constitutional lore." There is a strong possibility, which Derthick outlines without reference to the ARNG's air defense program, that the Guard's "increasing professionalism," which is "in keeping with contemporary trends," may combat reductions in the Guard's "contemporary political appeal." See Martha Derthick, "Militia Lobby in the Missile Age," Samuel P. Huntington, ed., Changing Patterns of Military Politics, (Glencoe: The Free Press of Glencoe, Inc., 1962), pp.193, 196. If Derthick's prognosis proves to be sound, the professionalism of Guard performance in continental air defense may paradoxically prove to be of pathfinding significance for the political as well as military potency of the entire National Guard.

## Appendix A

### Chronology of Major Developments Related to the Role of the ARNG in Air Defense

#### 1947

- 23 October - Flight of 48 B-29-type aircraft (TU-4 "Bull" bombers) observed in USSR.
- 17 December - Air Defense Command granted authority by Hq USAF to employ fighter and radar forces of Strategic Air Command, Tactical Air Command, and the Air National Guard in an emergency.

#### 1948

- 24 February - Climax of Communist coup in Czechoslovakia.
- 11 March - Convocation of Key West conference on service roles and missions.
- 21 April - DOD order assigning USAF primary responsibility for air defense; Army to provide air defense forces "as required."
- 1 December - Establishment of Continental Air Command by USAF, with Air Defense Command and Tactical Air Command as subordinate operational commands.

#### 1949

- 23 September - Announcement by President Truman of detection of Soviet nuclear detonation, 26-29 August.

#### 1950

- 25 June - Communist invasion of South Korea.
- 1 July - Activation of Army Antiaircraft Command (ARAACOM).
- 1 August - Collins-Vandenberg Agreement on employment of antiaircraft artillery. Callup of National Guard units initiated.

1951

- 10 January - General J. Lawton Collins, Army Chief of Staff, directed G-3 study of "Preferential Treatment of Selected National Guard (AAA) Units."
- 10 April - ARAACOM assumed command of all antiaircraft units allocated to air defense of CONUS.
- 30 November - ARAACOM plan for exploitation of ARNG's anti-aircraft potential submitted to DA.

1952

- 26 February - ARAACOM granted authority by DA to coordinate planning for utilization of ARNG antiaircraft units.
- 19 September - Pentagon conference on ARNG participation in air defense of CONUS.

1953

- 6 July - Publication of DA criteria for designation of ARNG antiaircraft units as Special Security Force.
- 9 November - DA published policy directive for AA defense of CONUS, to include ARNG participation.

1954

- 25 March - Implementation of ARNG on-site program commenced with deployment of Btry "A", 245th AAA Bn (120-mm gun) in New York City defense.
- 30 May - First active Army Ajax unit (Btry "B", 36th AAA Bn) became operational at Fort Meade, Md.
- 1 September - Continental Air Defense Command (CONAD) established as unified command by Joint Chiefs of Staff.

1955

- 10 February - Study of military personnel space savings initiated by Hq ARAACOM.

14 July - ARAACOM reaction to DA's suggestion for use of Reserve troops in air defense submitted.

1956

21 September - Twenty-three SSF ARNG gun battalions on site as of this date.

1957

27 March - ARAACOM redesignated U.S. Army Air Defense Command (acronym USARADCOM changed to ARADCOM 1 May 1961).

26 April - California accepted mission to test ARNG capability for full-time manning of a Nike Ajax battalion and designated 720th AAA Bn as test unit.

17 May - DA published plan for test of ARNG Ajax battalion. Active Army's 865th Missile Bn designated by ARADCOM to train, test (and eventually turn over its sites to) 720th AAA Bn.

1 June - Redesignation of 720th as missile battalion.

July - Beginning of individual specialist school training for technicians of the 720th at Fort Bliss.

8 October - ARNG gun mission terminated by DA.

26 December - Publication of DA policy directive for full-time participation of ARNG Ajax units in continental air defense.

1958

April - Beginning of specialist troop training for technicians of the 720th at Fort Bliss.

May - Beginning of unit package training for 720th at Fort Bliss.

12 May - U.S.- Canadian agreement on establishment of combined North American Air Defense Command (NORAD).

- 30 June - First active Army Hercules unit (Btry "A", 2d Missile Bn, 57th Arty) became operational in Chicago defense.
- 23 July - Technicians of 720th report to sites of active Army's 865th Missile Bn (redesignated 4th Missile Bn, 62d Arty) for on-site training.
- 14 September - Turnover of 865th's Los Angeles defense sites to 720th Missile Bn.

1959

- 1 January - Termination of executive agency control of CONAD by USAF and transfer of control to the Joint Chiefs of Staff.
- 30 April - DOD's legislative approach to solution of command and control of ARNG air defense units abandoned and reliance placed upon conclusion of mutual agreements between ARADCOM and States.

1960

- 7 September - ARNG air defense conference received NGB assurance of firm DA commitments for an on-site ARNG force of 76 Ajax fire units.
- 13 September - Protection against claims and other tort actions extended by law (P.L. 86-740) to technicians and other Guardsmen in cases arising from performance of duty.

1961

- 1 March - Completion of ARNG Ajax program with assumption of operational status by Btry "B", 1st Missile Bn, 126th Arty (Wisconsin) in Milwaukee defense.
- November - Completion of ARADCOM program for active Army Hercules units. ARADCOM receipt of DA message establishing requirement for ARNG Hercules program.
- 7 December - Pentagon conference on ARNG 48-battery Hercules program.

1962

- 5 March - Publication of DA directives for full-time participation of ARNG Hercules units in continental air defense.
- 2 May - Publication of ARADCOM schedule for conversion of ARNG Ajax units to Hercules.
- 22 October - CINCONAD increased air defense alert status in response to Cuban crisis.
- 11 December - Implementation of ARNG Hercules program commenced with assumption of operational status by Btry "A," 1st Missile Bn, 70th Arty (Maryland) in the Washington-Baltimore defense.

1964

- 18 November - Formal retirement of ARNG's last Ajax missile.

1965

- 14 April - Completion of ARNG Hercules program with assumption of operational status by Btrys "A" and "B," 1st Missile Bn, 137th Arty (Ohio) in Cincinnati-Dayton defense.

1967

- 20 February - A bill (Title II to H.R. 2) to "clarify the status" of National Guard technicians passed the House of Representatives, but Senate action was deferred on 7 November "until the next session."
- 18 September - Secretary of Defense McNamara announced the decision to deploy the Sentinel anti-ballistic missile system against the Chinese Communist threat.

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CS 322 (10 Jan 51)

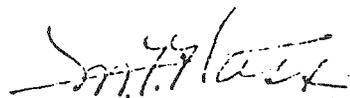
10 January 1951

MEMORANDUM FOR: ASSISTANT CHIEF OF STAFF, G-3

SUBJECT: Preferential Treatment of Selected National Guard Units

1. The Chief of Staff desires that Antiaircraft Units of the National Guard, that are to be employed for the defense of the major target areas in the United States, be brought up to 85% strength and be provided with full equipment.
2. It is requested that a study be submitted, without delay, for approval of the Chief of Staff indicating how this may be accomplished. The study should indicate any change in legislation which will be required and an estimated schedule of when units will meet the required personnel strength and equipment status.
3. In the event that a change in legislation is required to permit preferential treatment of the National Guard Antiaircraft Units, it is suggested that such change be so worded so that it can ultimately be applied also to any other selected National Guard Units which it may be desirable in the future to accord the same preferential treatment.
4. Assistant Chief of Staff G-3 is designated to monitor this study and the Judge Advocate General will prepare that portion of the study relating to a required change, if any, in legislation.

BY DIRECTION OF THE CHIEF OF STAFF:

M. F. HASS  
 Colonel, GSC  
 Secretary of the General Staff

Copy to: JAG

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Appendix C

On-Site Gun Battalions of the ARNG Special Security Force  
as of  
21 September 1956

Source: Annex A, Task Organization, AA-OP-US(56)

<u>State</u>	<u>Unit</u>	<u>Type</u>	<u>Location</u>	<u>Defense</u>
California	271st AAA Bn	90-mm gun	San Francisco	San Francisco
	728th AAA Bn	90-mm gun	Alameda	
	730th AAA Bn	90-mm gun	San Diego	San Diego
Connecticut	211th AAA Bn	90-mm gun	Bridgeport	Hartford-Bridgeport
	283d AAA Bn	90-mm gun	Bridgeport	Westover AFB
Massachusetts	704th AAA Bn	90-mm gun	Boston	Boston-Providence
	772d AAA Bn	90-mm gun	Boston	
New Jersey	109th AAA Bn	90-mm gun	Newark	New York City
New York	245th AAA Bn	120-mm gun	Brooklyn	
Ohio	177th AAA Bn	90-mm gun	Youngstown	Youngstown
	179th AAA Bn	90-mm gun	Lakewood	Cleveland
	182d AAA Bn	90-mm gun	Canton	Youngstown
Pennsylvania	707th AAA Bn	90-mm gun	Philadelphia	Philadelphia
	708th AAA Bn	90-mm gun	Pittsburgh	Pittsburgh
	709th AAA Bn	90-mm gun	Philadelphia	Philadelphia
	724th AAA Bn	90-mm gun	Pittsburgh	Pittsburgh
Rhode Island	243d AAA Bn	90-mm gun	Providence	Boston-Providence
	705th AAA Bn	90-mm gun	Providence	
Virginia	125th AAA Bn	120-mm gun	Alexandria	Washington-Baltimore
	615th AAA Bn	90-mm gun	Norfolk	Norfolk
	710th AAA Bn	90-mm gun	Newport News	
Washington	240th AAA Bn	120-mm gun	Seattle	Seattle
	770th AAA Bn	120-mm gun	Seattle	

Appendix D

On-Site Nike Ajax Units  
of the  
ARNG Air Defense Task Organization, CONUS  
as of  
26 June 1961

Source: ARADCOM Organization Chart, 1st  
Quarter FY 1962, Compiled 26 Jun  
61 by G-3 Section, Hq ARADCOM,  
and ARADCOM Test Forms 85, sub:  
ARNG On-Site Data

<u>State</u>	<u>Unit(Btry/Bn/Rgt)</u>	<u>Opnl Date</u>	<u>Location</u>	<u>Defense</u>
California	Hq/1/250		Fort Scott	San Francisco
	A/1/250	24 Jul 59	Berkeley	
	C/1/250	24 Jul 59	Newark	
	Hq/2/250		Fort Funston	
	B/2/250	24 Jul 59	Fort Scott	
	D/2/250	24 Jul 59	Daly City	
	Los Angeles	Hq/4/251		Long Beach
		A/4/251	14 Sep 58	Long Beach
		B/4/251	14 Sep 58	Torrance
		C/4/251	14 Sep 58	Playa del Rey
		D/4/251	14 Sep 58	Playa del Rey
		Connecticut	Hq/1/242	
A/1/242	5 Jan 61		Milford	
B/1/242	5 Jan 61		Westport	
Hq/1/192			West Hartford	
A/1/192	5 Jan 61		Portland	
B/1/192	5 Jan 61		Simsbury	
Illinois	Hq/1/202		Chicago	Chicago
	A/1/202	28 Sep 60	Mundelein	
	B/1/202	23 Sep 60	Palatine	
	C/1/202	28 Sep 60	Mundelein	
	D/1/202	23 Sep 60	Fort Sheridan	
	Hq/2/202		Chicago	
	A/2/202	17 Dec 59	Hegewisch Sta.	
	B/2/202	17 Dec 59	Naperville	
	C/2/202	17 Dec 59	Worth	
D/2/202	17 Dec 59	Hegewisch Sta.		

<u>State</u>	<u>Unit (Btry/Bn/Rgt)</u>	<u>Opnl Date</u>	<u>Location</u>	<u>Defense</u>
Maryland	Hq/1/70		Towson	Washington-Baltimor
	A/1/70	1 Mar 60		
	D/1/70	23 Sep 59	Fork	
	Hq/2/70		Owings Mills	
	A/2/70	1 Mar 60	Granite	
	C/2/70	16 Jun 60	Gaithersburgh	
	D/2/70	23 Sep 59	Cronhardt	
	Hq/3/70		Suitland	
	A/3/70	14 Jun 60	Waldorf	
	B/3/70	21 Jun 60	Upper Marlboro	
Massachusetts	Hq/1/241		Boston	Boston-Providence
	A/1/241	18 Aug 59	Blue Hills	
	B/1/241	18 Aug 59	Needham	
	Hq/2/241		Cheldea	
	C/2/241	18 Aug 59	Beverly	
	D/2/241	18 Aug 59	Reading	
Michigan	Hq/1/177		Detroit	Detroit
	A/1/177	12 Oct 60	Wyandotte	
	B/1/177	6 Nov 59	River Range Park	
	C/1/177	6 Nov 59	Wyandotte	
	Hq/2/177		Dearborn	
	A/2/177	25 Oct 60	Birmingham	
	C/2/177	6 Nov 59	Auburn Heights	
	D/2/177	6 Nov 59	Marine City	
New Jersey	Hq/1/254		Summit	New York City
	B/1/254	25 Sep 59	Summit	
	C/1/254	27 Jun 60	Leonardo	
	D/1/254	25 Sep 59	Wayne	
	Hq/2/254		Bellmawr	Philadelphia
	A/2/254	1 Oct 60	Pitman	
	B/2/254	1 Oct 60	Marlton	
New York	Hq/1/212		White Plains	New York City
	A/1/212	1 Jun 60	Spring Valley	
	B/1/212	1 Jun 60	White Plains	
	Hq/1/245		Huntington, L.I.	
	A/1/245	1 Jun 60	Huntington, L.I.	
	B/1/245	1 Jun 60	Hicksville	

<u>State</u>	<u>Unit(Btry/Bn/Rgt)</u>	<u>Opnl Date</u>	<u>Location</u>	<u>Defense</u>
	Hq/1/244		Brooklyn	
	C/1/244	5 Dec 60	Lido Beach	
	D/1/244	5 Dec 60	Lido Beach	
	Hq/2/106		Buffalo	Niagara-Buffalo
	A/2/106	4 Aug 60	Orchard Park	
	B/2/106	4 Aug 60	Fort Niagara	
	C/2/106	4 Aug 60	Fort Niagara	
	D/2/106	4 Aug 60	Orchard Park	
Ohio	Hq/1/137		Cleveland	Cleveland
	B/1/137	24 Jan 61	Cleveland	
	C/1/137	24 Jan 61	Warrensville Sta.	
Pennsylvania	Hq/2/166		Worchester	Philadelphia
	A/2/166	30 Apr 60	Worchester	
	B/2/166	30 Apr 60	Bristol	
	Hq/3/166		Paoli	
	B/3/166	30 Apr 60	Paoli	
	C/3/166	30 Apr 60	Chester	
	Hq/1/176		Rural Ridge	Pittsburgh
	A/1/176	6 Aug 59	Bryant	
	D/1/176	6 Aug 59	Rural Ridge	
	Hq/2/176		Carnegie	
	B/2/176	6 Aug 59	Hickman	
	C/2/176	6 Aug 59	Elizabeth	
Rhode Island	Hq/2/243		Providence	Boston-Providen
	B/2/243	6 Dec 60	North Kingston	
	D/2/243	6 Dec 60	Foster Center	
Virginia	Hq/1/280		Vienna	Washington-Baltimc
	A/1/280	23 Sep 59	Lorton	
	D/1/280	23 Sep 59	Fairfax	
	Hq/4/111		South Norfolk	Norfolk
	B/4/111	30 Sep 59	Nansemond	
	C/4/111	23 Sep 59	Kempsville	
	Hq/5/111		Newport News	
	B/5/111	1 Mar 60	Foxhill, Hampton	
	C/5/111	1 Mar 60	Hampton	
Washington	Hq/2/205		Issaguah	Seattle
	A/2/205	24 Jun 59	Kenmore	
	B/2/205	24 Jun 59	Cougar Mountain	

<u>State</u>	<u>Unit(Btry/Bn/Rgt)</u>	<u>Opnl Date</u>	<u>Location</u>	<u>Defense</u>
	Hq/3/205		Kent	
	B/3/205	24 Jun 59	Midway	
	C/3/205	24 Jun 59	Clalla	
Wisconsin	Hq/1/126		Milwaukee	Milwaukee
	A/1/126	9 Feb 61	Muskego	
	B/1/126	1 Mar 61	Milwaukee	

Appendix E

On-Site Nike Hercules Units  
of the  
ARNG Air Defense Task Organization, CONUS  
as of  
1 February 1967

Source: ARADCOM Forms 85, sub: ARNG On-Site  
Data, and Office of Reserve Components,  
Hq ARADCOM, Fact Sheet, 1 Feb 67, sub:  
ARNG-Air Defense

<u>State</u>	<u>Unit(Btry/Bn/Rgt)</u>	<u>Opnl Date</u>	<u>Location</u>	<u>Defense</u>
California	Hq/1/250		Fort Scott	San Francisco
	A/1/250	28 Jun 63	Pacifica	
	B/1/250	28 Jun 63	Castro Valley	
	Hq/4/251		Fort MacArthur	Los Angeles
	A/4/251	28 Jun 63	Stanton	
	B/4/251	23 Apr 64	Point Vincente	
	C/4/251	23 Apr 64	Brea	
	D/4/251	28 Jun 63	Fort MacArthur	
Connecticut	Hq/1/192		Cromwell	New England
	B/1/192	14 Aug 64	Cromwell	
	D/1/192	14 Aug 64	Ansonia	
Illinois	Hq/1/202		Arlington Hts.	Chicago- Milwaukee
	A/1/202	23 Aug 63	Homewell	
	B/1/202	23 Aug 63	Addison	
	C/1/202	23 Apr 64	Lemont	
	D/1/202	23 Apr 64	Northfield	
Maryland	Hq/1/70		Granite	Washington-Baltimor
	A/1/70	11 Dec 62	Annapolis	
	B/1/70	11 Dec 62	Granite	
	C/1/70	11 Dec 62	Waldorf	
	D/1/70	11 Dec 62	Phoenix	
Massachusetts	Hq/1/241		Natick	New England
	A/1/241	14 Aug 64	Lincoln	
	B/1/241	14 Aug 64	Hall	

<u>State</u>	<u>Unit(Btry/Bn/Rgt)</u>	<u>Opnl Date</u>	<u>Location</u>	<u>Defense</u>
Michigan	Hq/1/177		Detroit	Detroit
	A/1/177	9 Feb 63	Utica	
	B/1/177	9 Feb 63	Inkster	
	C/1/177	9 Feb 63	Carleton	
Missouri	Hq/3/128		Pleasant Hill	Kansas City
	A/3/128	15 Feb 64	Lawson	
	B/3/128	15 Feb 64	Pleasant Hill	
New Jersey	Hq/7/112		Livingston	New York- Philadelphia
	A/7/112	18 Oct 63	Lumberton	
	B/7/112	24 Apr 63	Livingston	
	C/7/112	24 Apr 63	South Plainfield	
New York	Hq/2/209		Lancaster	Niagara- Buffalo
	A/2/209	24 Apr 63	Grand Island	
	B/2/209	24 Apr 63	Lancaster	
	Hq/1/244		Roslyn	New York- Philadelphia
	A/1/244	19 Jun 64	Amityville	
	B/1/244	19 Jun 64	Rocky Point	
	C/1/244	19 Jun 64	Orangeburg	
Ohio	Hq/1/137		Wilmington	Cincinnati- Dayton
	A/1/137	14 Apr 65	Felicity	
	B/1/137	14 Apr 65	Oxford	
	C/1/137	9 Feb 63	Fairview Park	Detroit- Cleveland
Pennsylvania	Hq/2/166		Warrington	New York- Philadelphia
	A/2/166	9 Oct 64	Warrington	
	B/2/166	9 Oct 64	Warrington	
	Hq/2/176		West View	Pittsburgh
	A/2/176	18 Oct 63	West View	
	B/2/176	18 Oct 63	Corapolis	
C/2/176	18 Oct 63	Dorseyville		
Rhode Island	B/2/243	23 Aug 63	North Smithfield	New England
Texas	Hq/4/132		Duncanville	Dallas- Fort Worth
	A/4/132	16 Feb 64	Denton	
	B/4/132	16 Feb 64	Terrell	

<u>State</u>	<u>Unit(Btry/Bn/Rgt)</u>	<u>Opnl Date</u>	<u>Location</u>	<u>Defense</u>
Virginia	Hq/4/111		Deep Creek	Hampton Roads
	A/4/111	30 Aug 63	Lorton	
	B/4/111	4 Dec 64	Deep Creek	
	C/4/111	4 Dec 64	Denbigh	
Washington	Hq/2/205		Redmond	Seattle
	A/2/205	9 Oct 64	Redmond	
	B/2/205	9 Oct 64	Vashon	
Wisconsin	B/2/126	19 Jun 64	Waukesha	Chicago- Milwaukee

Appendix F

ARNG Air Defense Technician Structure --  
Nike Ajax System

Notes

1. Military grades of O, WO, and E denote officer, warrant officer, and enlisted positions, respectively. Wage grade "NGC" denotes a classified National Guard position to which nation-wide pay scales, identical to those established by law for equivalent general-schedule (GS) positions of the Federal Civil Service, apply. "NGW" denotes a National Guard position for which pay is established by local Federal wage boards in conformity with conditions existing within local industry, which may vary within a particular state. "NGW-S" denotes a position for which pay is established in the same manner as for an NGW position, but according to a higher scale appropriate to the supervisory function. See NGR 51, Chap. 3, Sec. I.

2. "P" indicates requirement for participation in package training; "S" indicates requirement for individual school specialist training; "T", troop training; "AIT," advanced individual training; "OJT," on-the-job training.

3. Source: Ltr, DA to CGs and NGB, 15 Mar 60, sub: Policies for Army National Guard CONUS Air Defense Units, AGAM-P (M) 322 DCSOPS.

<u>LEVEL OR UNIT</u>	<u>TITLE</u>	<u>NUMBER AUTHORIZED</u>	<u>MILITARY GRADE</u>	<u>WAGE GRADE</u>	<u>TRAINING REQUIREMENT</u>
State	Air Defense Officer	1	O	NGC-12	
	Administrative Specialist	1	WO/E	NGC-6	
Defense	Defense Supervisor (Authorized in each defense having four or more on-site batteries from two or more battalions, providing the State had missile units on site in two defenses.)	1	O	NGW-S-9	

<u>LEVEL OR UNIT</u>	<u>TITLE</u>	<u>NUMBER AUTHORIZED</u>	<u>MILITARY GRADE</u>	<u>WAGE GRADE</u>	<u>TRAINING REQUIREMENT</u>
Battalion Hq & Hq Battery	Battalion Supervisor	1	O	NGW-S-8	S, P (or equiv)
	Operations Supervisor	1	O	NGW-S-7	S, P (or equiv)
	Bn Missile Supervisor	1	O	NGW-S-7	S, P
	Guided Missile Fire Control Assistant	1	WO	NGW-13	S, P
	Guided Missile Materiel Assistant	1	WO	NGW-13	S, P
	Chief Fire Control Mechanic	1	E	NGW-12	S, P
	Electronics Materiel Chief	1	E	NGW-12	S, P
	Operations Sergeant	1	E	NGW-10	OJT
	Administrative Specialist	1	E	NGC-6	OJT
	Guided Missile Installations Electrician	1	E	NGW-10	S
	Chief Radar Mechanic	1	E	NGW-12	S
	Radar Operator	1	E	NGW-8	OJT

TOTAL 12

<u>LEVEL OR UNIT</u>	<u>TITLE</u>	<u>NUMBER AUTHORIZED</u>	<u>MILITARY GRADE</u>	<u>WAGE GRADE</u>	<u>TRAINING REQUIREMENT</u>
Firing Battery Hq Sec.	Battery Supervisor	1	O	NGW-S-7	S, P (or equiv)
	Ordnance Supply Specialist	1	E	NGW-8	OJT
	Administrative Specialist	1	E	NGC-6	OJT
	Wheeled Vehicle Mechanic	1	E	NGW-10	OJT
	Utility Repairman - Crewman	1	E	NGW-8	OJT
	Medical Aidman	1	E	NGW-6	AIT
	Utility Repairman	1	E	NGW-6	OJT
				TOTAL	7
Firing Battery Fire Control Platoon	Fire Control Supervisor	1	O	NGW-S-6	S, P (or equiv)
	Guided Missile Fire Control Assistant	1	WO	NGW-13	S, P
	Chief Fire Control Mechanic	1	E	NGW-12	S, P
	Fire Control Mechanic	1	E	NGW-12	S, P
	Ordnance Supply Specialist	1	E	NGW-8	OJT, P, T
	Guided Missile Installations Electrician	1	E	NGW-10	S

<u>LEVEL OR UNIT</u>	<u>TITLE</u>	<u>NUMBER AUTHORIZED</u>	<u>MILITARY GRADE</u>	<u>WAGE GRADE</u>	<u>TRAINING REQUIREMENT</u>
	Senior Fire Control Operator	2	E	NGW-11	P, T
	Fire Control Operator	3	E	NGW-10	P, T
	Asst Fire Control Operator	7	E	NGW-5 or 6	P, T
	Switchboard Operator - Crewman	1	E	NGW-6	P, T
TOTAL					19
Firing Battery Launcher Platoon	Launcher Area Supervisor	1	O	NGW-S-6	S, P
	Guided Missile Materiel Asst	1	WO	NGW-13	S, P
	Electronic Materiel Chief	1	E	NGW-12	S, P
	Materiel Chief	1	E	NGW-12	S, P
	Assembly Sergeant	1	E	NGW-12	S, P
	Guided Missile Installations Electrician	1	E	NGW-10	S
	Ordnance Supply Specialist	1	E	NGW-8	OJT, P, T
	Firing Panel Operator	1	E	NGW-8	P, T
	Launcher Section Chief	3	E	NGW-11	P, T

<u>LEVEL OR UNIT</u>	<u>TITLE</u>	<u>NUMBER AUTHORIZED</u>	<u>MILITARY GRADE</u>	<u>WAGE GRADE</u>	<u>TRAINING REQUIREMENT</u>
	Firing Panel Operator	3	E	NGW-8	P, T
	Launcher Helper	7	E	NGW-5 or 6	P, T
	Generator Operator - Crewman	1	E	NGW-6	P, T

TOTAL 22

Appendix G

ARNG Air Defense Technician Structure --  
Nike Hercules System

Notes

1. See n. 1, Appendix F, for explanation of military and wage grade abbreviations.

2. Asterisk denotes requirement for individual school training in the Nike system. MOS qualification for other positions to be met by on-the-job training, service school training, or comparable military or civilian experience, was determined by the State Adjutant General or his authorized representative in accordance with pertinent directives.

3. "Alert requirement" denotes percentage of fire units required to be on 15-minute alert status within the battery's prospective parent defense.

4. "Improved Kit with ABAR (or HIPAR)" denotes the possession by a fire unit of additional radar equipment designed to improve the unit's capability to acquire targets and determine ranges in an environment in which enemy electronic countermeasures (ECM) are employed.

5. Source: Ltr, DA to CGs and NGB, 5 Mar 62, sub: Policies for National Guard Participation in CONUS Air Defense, AGAM-P (M) 322 DCSOPS.

STATE LEVEL

<u>TITLE</u>	<u>NUMBER AUTHORIZED</u>	<u>MILITARY GRADE</u>	<u>WAGE GRADE</u>
Air Defense Officer*	1	O	NGC-12
Administrative Specialist	1	WO/E	NGC-6

(For a state having only one battery in the on-site program. augmentation for a Supervision, Training, and Operational Readiness Evaluation Team was authorized. This team consisted of three school-trained personnel: a Missile Supervisor, O, NGW-S-10; a Guided Missile Fire Control Assistant, WO, NGW-S-7; and a Guided Missile Materiel Assistant, WO, NGW-S-7.)

BATTALION HQ & HQ BATTERY

<u>TITLE</u>	<u>MILITARY GRADE</u>	<u>WAGE GRADE</u>	<u>NUMBER AUTHORIZED</u>	
			<u>BN OF 2 BTRYS</u>	<u>BN OF 3 OR 4 BTRYS</u>
Battalion Supervisor*	O	NGW-S-11	1	1
Operations Supervisor*	O	NGW-S-10	1	1
Battalion Missile Supervisor*	O	NGW-S-10	1	1
Administrative Supply Supervisor*	O	NGW-S-8	1	1
Fire Control Assistant*	WO	NGW-S-7	1	1
Materiel Assistant*	WO	NGW-S-7	1	1
Chief Fire Control Mechanic*	E	NGW-12	1	1
Electronics Materiel Chief*	E	NGW-12		1
Operations Sergeant	E	NGW-10		1
Supply Sergeant	E	NGW-10	1	1
Administrative Specialist	WO/E	NGC-6	1	1
TOTALS			9	11

(For any battalion equipped with a radar set AN/MPQ-36, two additional technicians were authorized: a Chief Radar Mechanic\*, E, NGW-12; and a Radar Operator, E, NGW-8.)

FIRING BATTERY HQ SECTION

<u>TITLE</u>	<u>MILITARY GRADE</u>	<u>WAGE GRADE</u>	<u>NUMBER AUTHORIZED</u>
Battery Supervisor*	O	NGW-S-10	1
Wheeled Vehicle Mechanic Crewman	E	NGW-10	1
Supply Specialist	WO/E	NGW-8	1
Administrative Specialist	WO/E	NGC-6	1
Medical Aidman	E	NGW-6	1
<b>TOTAL</b>			<b>5</b>

(For a State having only one battery in the on-site program, two additional technicians were authorized if the battery was equipped with a radar set AN/MPQ-36: a Chief Radar Mechanic\*, E, NGW-8; and a Radar Operator, E, NGW-8.)

FIRING BATTERY FIRE CONTROL PLATOON

<u>TITLE</u>	<u>MILITARY GRADE</u>	<u>WAGE GRADE</u>	<u>NUMBER AUTHORIZED BY ALERT REQUIREMENT</u>		
			<u>60%</u>	<u>66 2/3%</u>	<u>75%</u>
Fire Control Supervisor*	O	NGW-S-8	1	1	1
Fire Control Assistant*	O	NGW-S-7	2	2	2
Chief Fire Control Mechanic*	E	NGW-12	1	1	1
Fire Control Mechanic*	E	NGW-12	2	2	2
Senior Fire Control Operator	E	NGW-11	3	3	4
Fire Control Operator	E	NGW-10	6	7	8

<u>TITLE</u>	<u>MILITARY GRADE</u>	<u>WAGE GRADE</u>	NUMBER AUTHORIZED BY ALERT REQUIREMENT		
			<u>60%</u>	<u>66 2/3%</u>	<u>75%</u>
Engineer Missile Equipment Specialist*	E	NGW-10	1	1	1
Ordnance Supply Specialist*	E	NGW-8	1	1	1
Assistant Fire Control Operator	E	NGW-5 or 6	11	12	14
TOTALS			28	30	34

FIRING BATTERY LAUNCHER PLATOON  
(24-hour manning for one section only)

<u>TITLE</u>	<u>MILITARY GRADE</u>	<u>WAGE GRADE</u>	NUMBER AUTHORIZED BY ALERT REQUIREMENT		
			<u>60%</u>	<u>66 2/3%</u>	<u>75%</u>
Launcher Area Supervisor*	O	NGW-S-8	1	1	1
Materiel Assistant*	WO	NGW-S-7	2	2	2
Platoon Sergeant*	E	NGW-12	1	1	1
Electronics Materiel Chief	E	NGW-12	1	1	1
Section Chief	E	NGW-11	4	4	4
Engineer Missile Equipment Specialist*	E	NGW-10	1	1	1
Ordnance Supply Specialist	E	NGW-8	1	1	1
Firing Panel Operator	E	NGW-8	6	6	6
Senior Launcher Crewman	E	NGW-6	4	4	4
Launcher Crewman	E	NGW-6	8	8	8

<u>TITLE</u>	<u>MILITARY GRADE</u>	<u>WAGE GRADE</u>	NUMBER AUTHORIZED BY ALERT REQUIREMENT		
			<u>60%</u>	<u>66 2/3%</u>	<u>75%</u>
Generator Operator	E	NGW-6	2	2	3
Launcher & Assembly Helper	E	NGW-5	4	4	6
TOTALS			35	35	38

FIRING BATTERY AUGMENTATION

<u>TYPE</u>	<u>TITLE</u>	<u>MILITARY GRADE</u>	<u>WAGE GRADE</u>	NUMBER AUTHORIZED BY ALERT REQUIREMENT		
				<u>60%</u>	<u>66 2/3%</u>	<u>75%</u>
A. Improved Kit with HIPAR	Chief Fire Control Mechanic*	E	NGW-12	1	1	1
	Fire Control Mechanic*	E	NGW-12	2	3	3
	Fire Control Operator*	E	NGW-10	4	4	4
TOTALS				7	8	8
B. Improved Kit with ABAR	Chief Fire Control Mechanic*	E	NGW-12	1	1	1
	Fire Control Mechanic*	E	NGW-12	1	1	2
	Fire Control Operator*	E	NGW-10	3	3	3
	Senior Radar Operator*	E	NGW-10	1	1	1

<u>TYPE</u>	<u>TITLE</u>	<u>MILITARY GRADE</u>	<u>WAGE GRADE</u>	NUMBER AUTHORIZED BY ALERT REQUIREMENT		
				<u>60%</u>	<u>66 2/3%</u>	<u>75%</u>
	Radar Operator*	E	NGW-10	2	2	2
				<hr/>	<hr/>	<hr/>
TOTALS				8	8	9
				<u>PER BATTERY</u>		
C. Security Squad	Asst Squad Leader	E	NGC-5	1		
	Senior Security Guard	E	NGC-5	1		
	Security Guard	E	NGC-5	2		
				<hr/>		
				TOTAL	4	
D. Additional Launcher Section	Asst Section Chief	E	NGW-6	1		
	Senior Launcher Crewman	E	NGW-6	1		
	Launcher Helper	E	NGW-6	7		
				<hr/>		
				TOTAL	9	

<b>ORE SCORE SHEET</b> <b>NIKE FIRE CONTROL AREA</b> <small>(ARADCOM Reg 350-1-5)</small>				ORGANIZATION  _____ BTRY, _____ BN, _____ ARTY				DATE	
<b>I - STATE OF ALERT TEST</b>									
<b>1. TARGET ACQUISITION</b>									
TOLERANCE LOPAR	250	230	220	210	200	190	180	170	
SCORE	0	10	20	30	50	70	90	NONOP	
TOLERANCE HIPAR/ABAR	340	330	320	310	300	290 <sup>2</sup>	280	270	
SCORE	0	10	20	30	50	70	90	NONOP	
<b>2. SYSTEM ACQUIRE AND TRANSFER TIME</b>									
TOLERANCE	15								
SCORE	0								
<b>3. TARGET TRACKED</b>									
TOLERANCE	190	180	170	160	150	140	130		
SCORE	0	10	20	30	50	90	NONOP		
<b>4. MISSILE ACQUIRED</b>									
TOLERANCE	ACQUIRE		NON - ACQ						
SCORE	0		NONOP						
<b>5. STATE OF ALERT</b>									
TIME - 20 MINUTE	SAT	UNSAT							
TIME - 5 MINUTE	SAT	UNSAT							
SCORE	0	NONOP							
<b>II - SYSTEM CHECKS</b>									
<b>6. COMPUTER DYNAMICS COURSE 2</b>									
TOLERANCE	NORMAL	ABNORMAL PLOT			UNSATISFACTORY				
SCORE	0	20			NONOP				
<b>7. SIMULTANEOUS TRACKING TEST</b>									
TOLERANCE TTR	.5	.6	.7	.8	.9	1			
X SCORE SP	0	10	30	50	70	NONOP			
Y SCORE SP	0	10	30	50	70	NONOP			
H SCORE SP	0	10	30	50	70	NONOP			
X SCORE LP	0	10	30	50	70	NONOP			
Y SCORE LP	0	10	30	50	70	NONOP			
H SCORE LP	0	10	30	50	70	NONOP			
TOLERANCE TRR	.5	.6	.7	.8	.9	1			
X SCORE	0	5	10	15	20	25			
Y SCORE	0	5	10	15	20	25			
H SCORE	0	5	10	15	20	25			
<b>TRR SCORE</b>									
	A-LONG	A-SHORT	B-LONG	B-SHORT					
X SCORE									
Y SCORE									
H SCORE									
TOTAL									
<b>TRR SYNCHRONIZATION</b>									
	A-LONG	A-SHORT	B-LONG	B-SHORT					
SCORE									

8. LEVEL, COLLIMATION, ORIENTATION CHECK AND RANGE ZERO								
A. LEVEL								
TOLERANCE	10	12	14	16	18	20		
A DIVISIONS SCORE	0	10	20	50	80	NONOP		
B DIVISIONS SCORE	0	10	20	50	80	NONOP		
B. COLLIMATION								
TOLERANCE	.2	.3	.4	.5	.6			
AZ SCORE	0	5	20	60	NONOP			
EL SCORE	0	5	20	60	NONOP			
C. ORIENTATION CHECK								
TOLERANCE	5	10	15	20	25			
X SCORE	0	10	20	50	80	NONOP		
Y SCORE	0	10	20	50	80	NONOP		
H SCORE	0	10	20	50	80	NONOP		
D. RANGE ZERO								
TOLERANCE	5	7	8	9	10	12	15	20
TTR SHORT	0	5	10	15	25	50	75	NONOP
TTR LONG	0	5	10	15	25	50	75	NONOP
TTR A-SHORT	0	5	7	10	12	15	20	25
TTR A-LONG	0	5	7	10	12	15	20	25
TTR B-SHORT	0	5	7	10	12	15	20	25
TTR B-LONG	0	5	7	10	12	15	20	25

### III - EQUIPMENT CHECKS

9. ANGLE SENSITIVITY				
TOLERANCE	1	2	3	4
MTR AZ SCORE	0	20	80	NONOP
MTR EL SCORE	0	30	90	NONOP
TTR AZ SCORE SP	0	20	60	NONOP
TTR EL SCORE SP	0	20	60	NONOP
TTR AZ SCORE LP	0	20	60	NONOP
TTR EL SCORE LP	0	20	60	NONOP
10. TRACKING RADARS RECEIVER SENSITIVITY				
TOLERANCE	17	16	15	14
MTR SUM SCORE	0	20	60	NONOP
TTR SUM SCORE	0	20	60	NONOP
TOLERANCE	11	10	9	8
MTR AZ SCORE	0	20	60	NONOP
MTR EL SCORE	0	20	60	NONOP
TTR AZ SCORE	0	20	60	NONOP
TTR EL SCORE	0	20	60	NONOP
11. ELECTRONIC CROSS ORIENTATION				
TOLERANCE	CENTERED	OFF-TARGET		
SCORE LOPAR	0	5		
SCORE HIPAR/ABAR	0	5		
12. TARGET AFC				
RATING	SAT	BREAK-LOCK	UNSAT	
SCORE LP	0	20	NONOP	
SCORE SP	0	20	NONOP	

13. RF INTERRUPT SWITCH												
RATING		SATISFACTORY				UNSATISFACTORY						
SCORE		0				10						
14. RADAR RF TEST SET												
RATING		OPERATIONAL				NONOPERATIONAL						
SCORE		0				NONOP						
15. TRR AFC												
RATING		SAT		BREAK-LOCK			UNSAT					
MAGNETRON "A" SP		0					25					
MAGNETRON "B" SP		0					25					
MAGNETRON "A" LP		0					25					
MAGNETRON "B" LP		0					25					
16. TRR RECEIVER SENSITIVITY												
TOLERANCE		55	58	60	62	64						
A-SHORT SCORE		0	5	10	15	25						
A-LONG SCORE		0	5	10	15	25						
B-SHORT SCORE		0	5	10	15	25						
B-LONG SCORE		0	5	10	15	25						
PANORAMIC		60	62	64	66	70						
SCORE		0	5	10	15	20						
17. REMOTE TRANSMITTER CONTROL												
RATING		SATISFACTORY				UNSATISFACTORY						
SCORE		0				10						
18. PRESENTATION SYSTEMS												
RATING		SATISFACTORY				UNSATISFACTORY						
SCORE		0										
19. LOPAR RECEIVER SENSITIVITY												
TOLERANCE		48	49	50	51	53	55					
MAIN SCORE		0	20	30	50	75	NONOP					
AUX SCORE		0	5	10	15	20	25					
TOLERANCE		10	9	8	7	6						
JS SCORE		0	5	10	20	25						
20. LOPAR AFC TRACKING CHECK												
RATING		SAT		BREAK-LOCK			UNSAT					
SCORE		0					NONOP					
21. MOVING TARGET INDICATOR												
		MTI			SECTOR DIMENSION							
RATING LOPAR		SAT		UNSAT	SAT		UNSAT					
SCORE		0		NONOP	0		10					
		COHO/MTI-1			NON-COHO/MTI-2							
RATING HIPAR/ABAR		SAT		UNSAT	SAT		UNSAT					
SCORE		0		NONOP	0		NONOP					
22. AJD - IS - PROCESSOR												
		AJD		IS				PROCESS				
		DISPLAY		AJD OFF		AJD ON		AJD OFF		AJD ON		
RATING		SAT	UNSAT	SAT	UNSAT	SAT	UNSAT	SAT	UNSAT	SAT	UNSAT	
SCORE		0	NONOP	0	5	0	5	0	5	0	5	

23. MINIMUM DISCERNIBLE SIGNAL MEASUREMENT				
A. ABAR WITH ECCM MODIFICATION				
TOLERANCE (LIN)	-102	-103	-102	-101
SIMPLEX SCORE	0	6	12	20
DIPLEX 1 SCORE	0	3	6	10
DIPLEX 2 SCORE	0	3	6	10
TOLERANCE (MTI)	-102	-103	-102	-101
SIMPLEX SCORE	0	6	12	NONOP
DIPLEX 1 SCORE	0	3	6	NONOP
DIPLEX 2 SCORE	0	3	6	NONOP
TOLERANCE (DF)	-102	-103	-102	-101
SIMPLEX SCORE	0	6	12	NONOP
DIPLEX 1 SCORE	0	3	6	NONOP
DIPLEX 2 SCORE	0	3	6	NONOP
TOLERANCE (IAGC)	-102	-103	-102	-101
SIMPLEX SCORE	0	6	12	NONOP
DIPLEX 1 SCORE	0	3	6	NONOP
DIPLEX 2 SCORE	0	3	6	NONOP
TOLERANCE (LOG)	-102	-103	-102	-101
SIMPLEX SCORE	0	6	12	NONOP
DIPLEX 1 SCORE	0	3	6	NONOP
DIPLEX 2 SCORE	0	3	6	NONOP
B. ABAR WITHOUT ECCM MODIFICATION				
TOLERANCE	-102	-103	-102	-101
SIMPLEX SCORE	0	20	50	NONOP
DIPLEX 1 SCORE	0	15	30	NONOP
DIPLEX 2 SCORE	0	15	30	NONOP
C. ABAR WITH PARAMETRIC AMPLIFIERS				
TOLERANCE (LIN)	-103	-107	-106	-105
SIMPLEX SCORE	0	6	12	20
DIPLEX 1 SCORE	0	3	6	10
DIPLEX 2 SCORE	0	3	6	10
TOLERANCE (LOG)	-105	-107	-106	-105
SIMPLEX SCORE	0	6	12	NONOP
DIPLEX 1 SCORE	0	3	6	NONOP
DIPLEX 2 SCORE	0	3	6	NONOP
TOLERANCE (IAGC)	-102	-107	-106	-105
SIMPLEX SCORE	0	6	12	NONOP
DIPLEX 1 SCORE	0	3	6	NONOP
DIPLEX 2 SCORE	0	3	6	NONOP
TOLERANCE (DF)	-102	-107	-106	-105
SIMPLEX SCORE	0	6	12	NONOP
DIPLEX 1 SCORE	0	3	6	NONOP
DIPLEX 2 SCORE	0	3	6	NONOP
TOLERANCE (MTI)	-102	-107	-106	-105
SIMPLEX SCORE	0	6	12	NONOP
DIPLEX 1 SCORE	0	3	6	NONOP
DIPLEX 2 SCORE	0	3	6	NONOP

24. HIPAR REMOTE CONTROL CHECKS/ABAR VIDEO PRESENTATION CHECK				
RATING	SATISFACTORY		UNSATISFACTORY	
SCORE	0			
25. ECCM CONSOLE				
RATING	SATISFACTORY		UNSATISFACTORY	
SCORE	0			
26. HIPAR SENSITIVITY CHECK				
TOLERANCE	DATA	-1	-2	-3
SCORE: S, DF & FAGC OFF	0	5	15	25
SCORE: DF & FAGC ON	0	5	15	25
SCORE: DF, FAGC & MTI ON	0	5	15	25
SCORE: S, DF, FAGC & MTI ON	0	5	15	25
27. FUIF RANGE CALIBRATION CHECK				
RATING	SATISFACTORY		UNSATISFACTORY	
SCORE	0		10	
28. PLOTTING BOARDS				
RATING	SATISFACTORY		UNSATISFACTORY	
SCORE	0			
29. AG TRANSMISSION AND COMMUNICATIONS				
RATING	SATISFACTORY		UNSATISFACTORY	
SCORE	0		10	NONOP
30. MISSILES ACQUIRED				
NON ACQUIRE	0	1	2	3
SCORE	0	15	40	NONOP
MANUAL ACQUIRE	0	1	2	3
SCORE	0	5	10	15
31. IFF/SIF				
RATING	SATISFACTORY		UNSATISFACTORY	
SCORE	0		NONOP	
32. CREW PERFORMANCE				
RATING	SUPR	EXC	SAT	UNSAT
SCORE	0	25	50	100
33. FIRE CONTROL AREA SCORE AND STATUS				
SCORE	STATUS			
	OPERATIONAL		NON-OPERATIONAL	
REMARKS				

ORE SCORE SHEET NIKE LAUNCHING CONTROL AREA <i>(ARADCOM Regulation 350-1-5)</i>		ORGANIZATION _____ STRY, _____ BN, _____ ARTY						DATE	
ITEM	SCORE	A		B		C		TOTAL	
		ITEM NON-OP	SCORE	ITEM NON-OP	SCORE	ITEM NON-OP	SCORE		
1. TIME TO LAUNCH _____ MINUTES									
2. FLIGHT SIMULATOR									
3. FIRING SIMULATOR									
4. MISSILE ACQUIRE AND COMMAND									
5. MISSILE AND BOOSTER									
6. LAUNCHER									
7. SCI, ELEVATOR AND CONVERTER									
8. CREW PERFORMANCE									
						<b>TOTAL</b>			
<b>LAUNCHING CONTROL STATUS</b>						<b>OPERATIONAL</b>		<b>NON-OPERATIONAL</b>	
<b>CREW PERFORMANCE</b>		<b>SUPERIOR</b>		<b>EXCELLENT</b>		<b>SATISFACTORY</b>		<b>UNSATISFACTORY</b>	
<b>REMARKS</b>									

Appendix I

Criteria For REDCON C1

<u>AREA</u>	<u>1965 Criteria</u>	<u>1967 Criteria</u>
A. Training	1. Operational Satisfactory ratings in Army Training Test, ORE, SNAP, and training inspections and evaluations.	1. 90 percent of refresher training in individual mandatory subjects completed.
	2. Satisfactory in most recent TPI within 13 months.	2. 10 points for quarterly OREs, maximum of 3 points per ORE for last 3 OREs.
	3. Satisfactory in major exercise participation within 13 months.	3. 120 hours of participation in air defense combat readiness training exercise within last 13 months.
		4. Satisfactory in most recent TPI within 13 months.
		5. Satisfactory in most recent annual service practice.
B. Logistics	1. 90 percent on hand of 90 percent of reportable items of full TOE equipment.	1. 90 percent on hand of 90 percent of reportable items of full TOE equipment.
	2. Total missile system in operational status not less than 85 percent of the time.	2. Total missile system in operational status not less than 85 percent of the time.
	3. For Class I, III, V unit loads, 90 percent fill of 95 percent of authorized load.	3. For Class I, III, V unit loads, 90 percent fill of 95 percent of authorized load.

4. For Class II and IV prescribed load list (PLL) of repair parts, 0-10 percent of reportable items at zero balance.

OR

15 days of supply of authorized stockage list (ASL) of repair parts on hand.

5. Satisfactory in most recent CMMI in 13 months.

4. For prescribed load list (PLL) of repair parts, 0-10 percent of reportable items at zero balance.

OR

14 days of supply of authorized stockage list (ASL) of repair parts on hand.

5. Satisfactory in most recent CMMI in 13 months.

Source: AR 220-1, Unit Readiness, editions of 28 July 1965 and 20 February 1967

Appendix J

Chiefs of the National Guard Bureau (NGB)  
and  
Commanding Generals (CGs) ARAACOM/ARADCOM\*  
1950-1967

Chiefs, NGB

Maj. Gen. Raymond H. Fleming  
Acting Chief, 1950-1951  
Chief, 1951-1953

Maj. Gen. Earl T. Ricks  
Acting Chief, 1953

Maj. Gen. Edgar C. Erickson  
1953-1959

Maj. Gen. Winston P. Wilson  
Acting Chief, 1959

Maj. Gen. Donald W. McGowan  
1959-1963

Maj. Gen. Winston P. Wilson  
1963-

CGs, ARAACOM/ARADCOM

Maj. Gen. Willard W. Irvine  
1 July 1950-27 April 1952

Lt. Gen. John T. Lewis  
1 May 1952-30 September 1954

Lt. Gen. Stanley R. Mickelsen  
1 October 1954-31 October 1957

Lt. Gen. Charles E. Hart  
1 November 1957-31 July 1960

Lt. Gen. Robert J. Wood  
1 August 1960-13 April 1962

Maj. Gen. Philip H. Draper, Jr.  
Acting CG, 14 April 1962-  
20 May 1962

Lt. Gen. William W. Dick, Jr.  
Acting CG, 21 May 1962-  
19 August 1962  
CG, 20 August 1962-  
29 August 1963

Lt. Gen. Charles B. Duff  
30 August 1963-31 July 1966

Lt. Gen. Robert Hackett  
1 August 1966-

\*ARAACOM established 1 July 1950 by DA GO No. 20, 29 June 1950;  
redesignated USARADCOM 27 March 1957 by GO No. 16, 22 March  
1957; acronym changed to ARADCOM 1 May 1961 by Change 1 to  
AR 320-50, 21 February 1961.

## Bibliographical Note

Like most ventures into unexplored fields of relatively recent military history, this study is based upon a miscellany of letters, telegrams, summary sheets, disposition forms, memorandums, reports, studies, plans, and briefing and conference notes which have somehow survived the gauntlet of records-destruction regulations.

Though not comprehensive, the most varied and seminal files of such documents discovered by the writer were those proffered by the Office of Reserve Components, Hq ARADCOM. Except for the gun era of Guard participation in CONUS air defense and the early phases of the Guard's Ajax program, key policy and planning papers were either present in these files, or memos for record provided invaluable leads to missing parts of the puzzle.

Through the generous efforts of the National Guard Bureau, such clues led to location in the National Archives of the Department of the Army staff studies and memoranda which document, during the tenure of General J. Lawton Collins as Army Chief of Staff, the inception of the Guard's unique role in air defense. Resultant Department of the Army and ARAACOM/ARADCOM operations plans were provided by the National Personnel Records Center of the General Services Administration, St. Louis. Remaining gaps

in documentation of Department of the Army policy for the Guard's gun program were filled by the State Air Defense Officer of Ohio, Colonel Thomas A. Herzog, whose search of pertinent files in the office of Ohio's Adjutant General proved to be discerning as well as productive.

The private papers of Brig. Gen. Clifford F. Beyers, Commanding General of California's 114th AAA Brigade at the time of the 720th Missile Battalion's experimental entry into a full-time role in on-site air defense in 1958, provided an uniquely authoritative source of detailed information on this pivotal development. These 37 pages of legal-size graph paper, upon which General Beyers' pen and pencil painstakingly recorded the 720th's progress along its pioneering path, constitute a lode which any student of this subject must fully mine. These invaluable papers were unearthed through the efforts of Lt. Col. Neil E. Allgood, Commanding Officer of California's 4th Missile Battalion, 251st Artillery, who contributed many other documents, of DA as well as ARADCOM and unit origin, too numerous to list here in detail.

The historical source files of the Office of the Historian, Hq ARADCOM, yielded most of the correspondence between Commanding Generals of ARAACOM/ARADCOM and higher authorities, as well as the command reports and commanders'

conference notes and brochures noted throughout this study. The files of other staff elements of Hq ARADCOM provided the score-sheets which served as sources for the largely graphical approach of this attempt to evaluate the Army National Guard's performance in air defense. Specifically, these sources were found in the files of the Directorate of Evaluations, DCSOPS; of the Inspector General; and of the Directorate of Materiel Readiness, DCSLOG.

Where files failed, interviews perforce were made to serve. The numerous witnesses who obligingly resolved enigmas, either in person or by telephone or letter, are identified in notes. Here there is space to acknowledge the contributions of only three of these mentors: Colonel Max E. Billingsley, who compressed almost a decade of experience as Chief of ARADCOM's Office of Reserve Components into four reels of recording tape; Lt. Col. Neil E. Allgood; and William I. King, now a retired Colonel, whose cooperative correspondence provided otherwise unobtainable information on the background of the Guard's Ajax program.

Secondary works on this subject are at best sparse. A 1967 bibliography of publications germane to the National Guard as a whole, Civilian in Peace, Soldier in War (DA Pamphlet 130-2), lists only five brief magazine articles on the Guard's role in air defense. No books, apparently, have been written on this subject.

Of tangential interest are three published works which add, albeit obliquely, to a true appreciation of the distinctiveness of the Army National Guard's contribution to continental air defense. Two of these are by Martha Derthick. Although her studies at no point reflect awareness of the Guard's record in air defense, they manifest considerable acuity in her chosen field: the Guard's role in politics. These two studies are The National Guard in Politics (Cambridge: Harvard University Press, 1965), and "Militia Lobby in the Missile Age: The Politics of the National Guard," in Samuel P. Huntington, ed., Changing Patterns of Military Politics (Glencoe: The Free Press of Glencoe, 1962). For anyone interested in any aspect of the Guard, these studies provide penetrating analyses of the political factors which rightfully and inevitably impact upon the Guard's military functions. The third of these works is General Sir Frederick Pile's amiable reminiscence, Ack-Ack: Britain's Defence Against Air Attack During the Second World War (London: George G. Harrap & Co. Ltd, 1949). This book is more than a sprightly and highly informative account of Britain's uneven anti-aircraft effort in an era of great need. If only indirectly, it suggests that Americans are not as blind as others have been to the virtually apocalyptic dangers which continue to threaten free societies.

## Glossary

AA -----	Antiaircraft
AAA -----	Antiaircraft Artillery
AADCP -----	Army Air Defense Command Post
AAOC -----	Antiaircraft Operations Center
ACofS -----	Assistant Chief of Staff
AC&W -----	Aircraft Control and Warning
AD -----	Air Defense
ADAD -----	Air Defense Artillery Director
ADC -----	Air Defense Command (USAF)
AFB -----	Air Force Base
AFF -----	Army Field Forces
AG -----	Adjutant General
AGI -----	Annual General Inspection
ANACDUTRA -----	Annual Active Duty for Training
ANG -----	Air National Guard
AR -----	Army Regulation
ARAACOM -----	Army Antiaircraft Command
ARADCOM -----	Army Air Defense Command
ARNG -----	Army National Guard
Arty -----	Artillery
ASP -----	Annual Service Practice
A.T.S. -----	Auxiliary Territorial Service
ATT -----	Army Training Test
AW -----	Automatic Weapons
Bde -----	Brigade
Bn -----	Battalion
BRL -----	Bomb Release Line
BSSC -----	Battle Staff Support Center
CBR -----	Chemical, Biological, Radiological
CG -----	Commanding General
CINC -----	Commander in Chief
CMMI -----	Command Maintenance Management Inspection
CO -----	Commanding Officer
CofS -----	Chief of Staff
CONAD -----	Continental Air Defense Command
CONARC -----	Continental Army Command
CONUS -----	Continental United States
CY -----	Calendar year

DA -----	Department of the Army
DASA -----	Defense Atomic Support Agency
DCE -----	Defense Combat Evaluation
DCS -----	Deputy Chief of Staff
DCSOPS -----	Deputy Chief of Staff for Military Operations
DCSLOG -----	Deputy Chief of Staff for Logistics
D-day -----	The day on which an operation commences or is due to commence. This may be the commencement of hostilities or any other operation.
DF -----	Disposition Form
DOD -----	Department of Defense
ECM -----	Electronic countermeasures
EM -----	Enlisted man (men)
FY -----	Fiscal year
G-1 -----	Personnel section (or chief) of a divisional or higher staff
G-3 -----	Operations and training section (or chief) of a divisional or higher staff
G-4 -----	Supply section (or chief) of a divisional or higher staff
GO -----	General Order
HAWK -----	Surface-to-air guided missile for defense against low-altitude air and missile attack
How -----	Howitzer
Hq -----	Headquarters
IFC -----	Integrated Fire Control
IG -----	Inspector General
Ind -----	Indorsement
Interv -----	Interview
JAG -----	Judge Advocate General
JCS -----	Joint Chiefs of Staff
Ltr -----	Letter
MDAP -----	Military Defense Assistance Program
M-day -----	The day on which mobilization is to begin
mm -----	Millimeter
MOS -----	Military Occupational Specialty



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