NATIONAL FOREIGN ASSESSMENT CENTER

WASHINGTON, D. C. 20505

Director

NFAC 5057-79
20 September 1979

MEMORANDUM FOR: Director of Central Intelligence

25X1 SUBJECT : TNF Balance [redacted]

1. Per your discussion with the NIOs today, you may wish to mention to SecDef tomorrow that:

a. Europeans are increasingly divided over TNF modernization, and agreement on the modernization proposal by December is in jeopardy (see draft NFAC memo, Inclosure 1);

b. They are likely to be exposed to diverse views on the armament balance and the need for LRTNF modernization. E.g., the IISS TNF balance assessment, which has the Soviets holding only a narrow edge over NATO (1.1 to 1)--hardly an inducement for modernization. (See inclosure 2);

c. U.S. efforts to provide data more authoritative and supportive of modernization deserve continuing care lest inconsistent numbers, differing counting methods, or divergent terminology dilute our case. [redacted] 25X1

2. In that connection, the DoD Red-Blue briefing based on a NATO/IMS balance briefing needs to be reconciled with our ongoing work on an Interagency Intelligence Memorandum designed to provide a common data base on both Soviet and NATO Theater Nuclear Forces. While it may be too late to influence the Red-Blue briefing beyond a caveat that data therein will change as new information becomes available, we ought to be careful henceforth to assure we all sing from the same sheet of music, especially in advancing data to support appraisal of the armaments balance. [redacted]

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[redacted]

REVIEW ON 31 Dec 85
DERIVED FROM 9c, 9d

25X1

SUBJECT: TNF Balance [redacted]

NFAC 5057-79
20 September 1979

3. Our having thus far linked LRTNF arms control to the SALT process may, should prospects for SALT III diminsh, further jeopardize LRTNF modernization. We will keep a weather eye on that linkage. [redacted] 25X1

[redacted] 25X1A

Bruce C. Clarke, Jr.

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THE DIRECTOR OF CENTRAL INTELLIGENCE

WASHINGTON, D. C. 20505

National Intelligence Officers

NFAC 5024-79
20 September 1979

MEMORANDUM FOR: Director, National Foreign Assessment Center

25X1A FROM : [redacted]
National Intelligence Officer for Conventional Forces

SUBJECT : IISS on Europe's TNF Balance

1. The International Institute for Strategic Studies (IISS) recently published its annual assessment, The Military Balance 1979-1980. This year, joining the blossoming public debate on Theater Nuclear Force (TNF) modernization, IISS has included a section entitled "The Balance of Theater Nuclear Forces in Europe." Following summary FYI:

2. IISS finds rough equivalence:

	Warheads*	System** Utility
WTO	2244	1209
NATO	1811	1065
Ratio WTO/NATO	1.24	1.14

*Calculated from assumptions excluding strategic systems, SAM, ABM, ADM, WTO systems with Asian targets, and assessing materiel availability and allocations for conventional missions.

**Number of warheads degraded by a numerical index which is a function of survivability (ability to withstand attack), penetration (assurance of foiling defenses), and flexibility (range, accuracy, responsiveness, retargeting ease).

3. I have asked OSR to critique the IISS numbers and to prepare its own "balance assessment."

[redacted]

25X1A

IISS, The Military Balance 1979-1980, London, 1979

The Balance of Theatre Nuclear Forces in Europe

In any attempt to make an objective analysis of the balance of theatre nuclear systems in Europe the definitions and assumptions made are critical. Changes in these lead unerringly to very different conclusions as to the state of the balance. There are two approaches to summation. The first is to add together all the nuclear-capable theatre systems in the inventories of the super-powers and their allies, regardless of whether all of these are in a position to affect the equation – making thereby an assumption that all *might* be used in some future conflict. The second is to attempt to make a judgment as to the numbers that seem likely to be employed against land targets in the European Theatre, excluding therefore many systems which have a theoretical nuclear capability against land targets but whose primary missions lie elsewhere. The first appears a rather crude method, embodying a significant number of distortions and leading, we would argue, to conclusions which are at best suspect and at worst extremely misleading. However, the second approach, which is used here, is heavily dependent on the validity of the detailed assumptions made. It is certainly possible to disagree with a number of them and we shall be at pains to make quite clear what those assumptions are before entering the analysis. On the other hand there are clear limits as to how far one can proceed in this direction, for it leads towards the postulation of very specific scenarios which diverge rapidly. It is therefore useful to set out first some general assumptions which seem likely to hold good whatever the scenario. These will be followed by specific assumptions as to the constraints which states will face in deciding what systems to deploy to meet what threat.

General Assumptions

It must be made clear at the outset that this comparison is not concerned with short-range or battlefield delivery systems such as nuclear artillery or SSM with ranges of less than 100 miles. This is a very arbitrary boundary, since aircraft can clearly be used for the delivery of nuclear weapons on the battlefield; however, an examination of the numbers of artillery pieces which can fire nuclear shells is not particularly illuminating since the number of shells in the stockpile will say more than the number of guns. This examination is concerned with weapon systems of longer range up to, but not including, those whose ranges entitle them to be included in SALT. There is an important exception to this rule: some US SLBM, which are included in SALT totals are assumed to be diverted from the 'strategic' mission to the European Theatre. The first assessment is based on a count of separately targetable warheads

Perhaps the most questionable assumption is also the most important: it is that, with the exception already noted, all 'strategic' systems will be withheld for the 'strategic' mission and will be used for nothing else. Such an assumption acknowledges implicitly that, if there were to be a nuclear war in Europe, it would be quite distinct from a strategic nuclear exchange between the super-powers and that both the super-powers would not be inclined, in the initial phase, to use any of their intercontinental systems to affect the outcome of a conflict confined at that time to Europe. This may be unreal and, at least in the Soviet case, an unwarranted distinction to make, but it is made here in the interests of clarity.

Next, no attempt has been made to include any system whose primary mission is believed to be maritime. Excluded therefore are many Soviet submarine- and surface-launched nuclear cruise missiles, nuclear depth-charges and Naval Air Force (NAF) aircraft. Similarly a decision has been taken to exclude most American nuclear-capable carrier-borne aircraft on the grounds that the primary mission of American carrier task forces will be sea control in areas distant from the European Theatre. Some will be included, presumed to be those of the US Sixth Fleet in the Mediterranean. Nuclear-tipped SAM and ABM are not counted and nor are Atomic Demolition Munitions (ADM).

The assumptions made as to serviceability (i.e., the numbers of systems actually ready for use at any moment) are as follows:

- Naval vessels: 70 per cent. A figure that allows for refit and maintenance of a kind to preclude use in under one week. Where very small numbers of ships or boats are deployed, numbers will be rounded down rather than up. Britain for example, can never expect to maintain more than two submarines out of four on station. A lengthy period of warning would push this figure up to about 80 per cent.
- Aircraft: 80 per cent. This might be increased if there were prolonged warning, but major servicing and repair will decrease numbers in squadron service.
- Ballistic Missiles: 90 per cent. In the case of SLBM, this figure is compounded with the serviceability of the submarines where applicable.

Although it must be acknowledged that there will be some attrition of nuclear-capable systems before nuclear release, no attempt has been made to degrade figures on this account in the first assessment. Because in most cases each side will wish to retain a particular level of nuclear-capable systems against such time as nuclear release is given, they are likely, for example, to withdraw aircraft from action in any conventional phase to replace losses

on the ground of those earmarked for nuclear missions. And both will endeavour not to hazard nuclear systems before release; they will be hard to find and harder to attack.

No attempt has been made in the first balance to assess system reliability or their assurance of penetrating to their targets. Readers must make their own judgments of the likelihood of an aircraft surviving anti-aircraft fire and interceptor fighters, and this will be a function of numbers, avionics, weather, transit height and ECM. In the absence of ballistic missile defences (BMD), ballistic missiles can be presumed to penetrate, but their reliability will be significantly less than 100 per cent. Malfunctions will occur.

It has not been thought useful to assess total yields, throw-weight or bomber payloads. Assumptions have been made as to the numbers of gravity bombs or stand-off nuclear weapons that a particular type of aircraft can carry, but yields are variable. Total deliverable megatonnage is not considered to be very significant. Nor has any attempt been made to look at sortie rates or the reload capability of the different systems. It must be understood that some aircraft will surely survive to rearm, and the Soviet SS-20 launcher in particular is almost certain to be able to reload in due course with reserve missiles, as might the Western *Pershing*. Even some naval vessels could replenish in the unlikely event of a prolonged exchange. What then begins to matter is not the number of delivery systems deployed but the stockpile of nuclear warheads, and there is great uncertainty as to the numbers on hand on each side. It appears very likely that there are rather more warheads available to each side than there will be nuclear targets. Although there is considerable nervousness in Western Europe over the future reload capacity of the SS-20 in particular, it must be acknowledged that the number of *Poseidon* warheads allocated to SACEUR is an entirely arbitrary figure which, given the redundancy of American strategic second-strike systems which is generally believed to exist, could be raised to a substantially higher figure without difficulty. We have therefore excluded SS-20 reloads for the time being since it seems unlikely that these yet exist, as we have also excluded additional *Poseidon* warheads. We are assuming also that all warheads have been mated with their delivery system, i.e., that nuclear outloading has been completed.

Specific Assumptions

In the case of the Soviet Union and the Warsaw Pact states, we assume that:

- No Soviet central systems are targeted against Western Europe.
- One quarter of Soviet aviation and ballistic missiles (less SLBM) will be allocated to the Eastern Front and these are most unlikely, given the present state of Sino-Soviet relations, to be deployable westwards in the event of a war in Europe.
- No NAF aircraft and seaborne cruise missiles would be used against land targets.
- One half of medium bombers will be retained for the nuclear role.
- One quarter of Fighter Ground Attack (FGA) totals will be retained for the nuclear role. The multi-role aircraft are listed separately to show numbers assumed to have missions against ground targets.
- A number of ageing diesel-powered ballistic missile submarines (SSB) are assumed to be deployed in the Baltic and to be targeted against Western Europe.
- The long-range bomber force would be reserved for intercontinental missions and thus does not affect the theatre balance.
- A number of nuclear-capable non-Soviet Pact aircraft are assumed to have a nuclear role. Some *SCUD B* missiles are similarly counted for Pact members.

It must be admitted that any one of these assumptions could be invalid, or, if valid now, changed at short notice. However, there are limits in terms of overall flexibility. Systems designed for a maritime mission are of peripheral value for other missions; weapon characteristics are optimised for the maritime mission and many rely on over-the-horizon target acquisition and terminal guidance for striking naval targets – techniques inapplicable on land. Furthermore, nuclear missions require special training and short-service aircrew cannot switch easily from the non-nuclear to the nuclear mission. Retention of a higher proportion of aircraft for the nuclear role would begin to affect conventional capabilities to a marked degree. Finally, nuclear arming and release gear is presumed not to be scaled for every ground-attack aircraft, so there will be a quite distinct upper limit to the number of aircraft that could be re-roled at short notice.

The assumptions applicable to *Western* forces are of a rather different kind. We have already noted that the United States would be in a position to vary the commitment of her Central systems to the defence of Europe. Furthermore, a substantial number of strike aircraft are retained in the Continental United States. Some of these are formally dual-based and can be presumed to reach Europe as reinforcements; others are uncommitted but some at least must be considered as being available to NATO, although, as with the Soviet Union, it seems highly probable that there will be limits to crew training and nuclear arming and release gear for these aircraft. The following specific assumptions have been made:

- A total of 400 *Poseidon* warheads will be allocated to SACEUR; this number will be assured

from the much larger pool of missiles actually available.
- The A-6E and A-7E aircraft of two carrier task forces will be in range of Warsaw Pact or Soviet territory, and half of them will be available for nuclear missions, the other half having maritime missions.
- One French aircraft carrier could be in range of Pact territory, and half its complement of *Etendard* IVM aircraft would be retained for the nuclear role.
- All French land- and sea-based nuclear forces (less *Pluton*) must be counted, as must the whole force of *Mirage* IVA aircraft.
- All British sea-based strategic nuclear forces are counted as are the *Vulcan* bombers *in toto*.
- Half the British *Buccaneer* aircraft are presumed to be reserved for nuclear strike.
- One third of all Western nuclear-capable fighter ground-attack aircraft are listed as being retained for the nuclear role.
- Half the US FB-111A are assumed to be in reserve for nuclear strike.

Tables VII and VIII are compiled on the basis of the foregoing assumptions. They list the systems, their numbers and the factors by which gross numbers should be reduced, so as to arrive at the system numbers that we believe should be counted. The warheads that can be carried are then multiplied by these numbers to arrive at a figure for total deliverable warheads for each system. These are then summed by general category and overall in the column headed 'Total Number of Warheads assumed available'.

Therefore a first refinement of the figures gives a NATO total of 1,811 warheads available, and a WP total of 2,244, and this might stand as the current balance of *usable* warheads as opposed to the unrefined balance of nuclear delivery vehicles (NDV) where the gross totals appear much less equal 2,045 against 5,364. Yet even these somewhat refined figures are not entirely satisfactory, for it must be unrealistic to equate a modern mobile ballistic missile – such as the SS-20 – with a fighter of limited range and doubtful penetrative powers. It is necessary to try to say something about the quality (and therefore utility) of each system under discussion. We therefore intend to judge the usefulness of the systems based on the evaluation of a number of factors. The three factors thought to be significant are survivability, penetration and flexibility, and each has been given equal weight in the calculations. In specific scenarios this is unlikely to be fair, for survivability and assured penetration would tend more to deter a massive theatre-nuclear strike, whereas in a slower escalation, the value of flexibility (accuracy, selectivity and the ability to retarget rapidly) will be relatively more important. Nevertheless, there is value in assessing quality, and these three factors are generally assumed to be equally significant. This second calculation allows a comparison to be made between numbers and the usefulness of systems.

Survivability is a relatively straightforward factor to assess. It is assessed as the ability of a system to withstand conventional or nuclear attack, and this, in turn, is a compound of hardness and concealment. If there is high expectation that a system can never be found, it matters little that it has no inherent protection. It follows that survivability is to some extent a function of the range of the system, since the greater the range, the larger the area in which it can operate and the more difficult it will be to find and, even if found, more difficult to hit. A mobile system must be more difficult to target than one which is static or tied to fixed operating bases, such as an aircraft. Marking survivability against a maximum score of 0.33, this analysis will use the following figures for the survivability of launch vehicles before use:

SSBN, Mobile MRBM: 0.3.

SSB: 0.25 (SSB are easier to detect and track than SSBN because they are noisier).

SRBM: 0.2 (as they must operate in a relatively confined area to stay in range).

Long-range aircraft, carrier-based aircraft and fixed-base IRBM: 0.15.

Tactical aircraft (land-based) with hardened hangars: 0.1.

Tactical aircraft with no hardening: 0.05.

The second factor is penetration. In the absence of anything other than skeleton ballistic missile defences, there is a high degree of assurance that a ballistic missile will penetrate to its target. There is clearly no such assurance in the case of aircraft. Yet it is necessary to differentiate between modern high-performance aircraft with good ECM equipment and low-level performance and more elderly aircraft which can only fly high and have no means of deflecting enemy radars and missiles. A stand-off air-to-ground missile will also enhance the ability of an aircraft to strike its target. What one cannot assess is the effect of the attrition over time of enemy air defences, but it can be argued that this will be largely offset by the fact that attrition on the ground will also be higher over time. This effect has therefore been discounted in the figures which follow (also marked against a theoretical maximum of 0.33):

Ballistic missiles: 0.3.

Modern strike aircraft with good ECM, good performance at very low level or stand-off ASM: 0.2.

Aircraft with no terrain-following radar and no ECM fit: 0.1.

Elderly aircraft forced to penetrate at high level: 0.05.

The final factor is by far the most difficult to assess, for not only is the judgment likely to be the most subjective but it will be a compound of several

sub-factors. Flexibility is clearly a most valuable characteristic of any weapon system and it will have something to do with its responsiveness, with the ease with which it can be retargeted, range (because the longer the range, the greater the possible selection of targets) and accuracy. However, it would seem wrong to accord flexibility any greater weight than either survivability or penetrability and it too is marked out of a theoretical maximum of 0.33. We are aware that we have assessed Western systems on the assumption that a unified targeting plan exists and that there will not be political disagreements which might detract from the effectiveness of that plan. In the case of France, this assumption cannot be made but French forces have been counted against NATO totals and we have not degraded them in the table. In making the judgments which follow, it should be noted that it is not easy to communicate with submarines that remain submerged (and so it is not easy to redirect SLBM), that retargeting of land-based missiles depends upon communications that are resistant to interference and upon sophisticated computers, and that only aircraft with modern navigational aids have the ability to deliver their weapons accurately by day or night and in all conditions of visibility.

Modern strike aircraft: 0.15–0.3 (range dependent).
Modern MRBM: 0.25 (assumes data buffer system).
MRBM, IRBM, SRBM: 0.1–0.2 (range dependent).
SLBM: 0.10–0.15 (range and accuracy dependent).

In the tables, each of the three primary factors is assessed for every delivery system and they are considered to be additive, giving a highest possible score of 1.0. Obviously no system is perfect, but its general utility is measured by how nearly its 'quality index' approaches unity. This index is then used to modify the figures for the total numbers of deployable warheads in order to arrive at aggregates which reflect more realistically the *usefulness* of the nuclear systems in the inventories of NATO and the Warsaw Pact.

This second approximation tends to narrow the gap between the blocs. Whereas the first refinement gave the Warsaw Pact an advantage of 2,244 to 1,811 (a ratio of 1.24 : 1), the 'System Utility Figures' shown in the tables give the Warsaw Pact an assessment of 1,209 as against NATO's 1,065 – a ratio of 1.13 : 1. Given that there are a substantial number of variables, the errors inherent in the calculations are at least of the order of ±10 per cent. We therefore conclude that something very close to parity now exists between the Theatre Nuclear Forces of NATO and the Warsaw Pact, although it is moving in favour of the Warsaw Pact. It is important to stress that the Western figures include US *Poseidon* warheads whereas the Warsaw Pact figures do not include any Soviet central systems. Without *Poseidon*, the ratios are 1.59 and 1.58 to one in the Pact's favour.

However, we are bound to note that certain disturbances are likely to occur as a result of modernization. On the Warsaw Pact side we note that the deployment of something over 100 SS-20 missiles has already accounted for 17 per cent of total system utility. If the Soviet Union were to retire the SS-4 and SS-5 missiles, our calculations show that another 140 SS-20s would do the job of the 590 SS-4 and SS-5 missiles. Deployment above that figure would clearly indicate a significant enhancement of capability which would, before long, move the overall balance clearly away from parity. As we are as yet unaware of substantial retirements of the older missiles, there exists a danger that the balance might change by about 85 points per year, assuming an annual rate of introduction for SS-20 from now on of some 50 missiles per year.

In conclusion, it is necessary to reiterate the subjective nature of this examination and to stress that different assumptions will alter the balances derived. However, it would certainly require some very major displacements of the figures to show any substantial imbalance in terms of overall system utility. It is even doubtful in our view whether the adverse ratio in terms of the total numbers of warheads assumed to be deliverable is significant at present, but one must acknowledge that the introduction of new and more capable systems on the Soviet side could, if unconstrained, begin to produce a theatre nuclear advantage which will be used to legitimate a NATO response. One must also acknowledge that a substantial advantage, although unquantifiable, may lie with the tightly controlled Warsaw Pact when compared with the politically diverse Western Alliance. Co-ordinating the nuclear forces of many countries into an efficient strike plan, using all the systems listed in an optimal way, will present a major challenge to NATO.

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Table VII: Warsaw Pact Long- and Medium-range Nuclear Systems for the European Theatre

Category and type	Range (nm)	Inventory	Factors: Utilization	Factors: Serviceability	Factors: No. of warheads	Warheads assumed available	Indices: Survivability	Indices: Penetration	Indices: Flexibility	Quality index	System utility figure	Operating countries and Notes
IRBM												
SS-5 *Skean*	2,300	90	*0.75*	*0.9*	*1*	60	*0.15*	*0.3*	*0.2*	0.65	39	USSR
SS-20	3–4,000	120	*0.75*	*0.9*	*3*	243	*0.3*	*0.3*	*0.25*	0.85	206	USSR. Mobile, MIRV
MRBM												
SS-4 *Sandal*	1,200	500	*0.75*	*0.9*	*1*	337	*0.15*	*0.3*	*0.15*	0.6	202	
SS-N-4 *Sark*	300	27	*1.0*	*0.7*	*1*	16	*0.25*	*0.3*	*0.1*	0.65	10	USSR. On G-I-class SSB. Assumed deployed in Baltic only
SLBM												
SS-N-5 *Serb*	700	54	*1.0*	*0.7*	*1*	33	*0.25*	*0.3*	*0.1*	0.65	21	USSR. On G-II-, H-II-class SSB SSBN. Assumed deployed in Baltic only
SS-N-8	4,800	6	*1.0*	*0.7*	*1*	5	*0.25*	*0.3*	*0.15*	0.7	3	USSR. On 1 H-III-class SSBN. Assumed in Baltic and operational
SRBM												
Scud B SS-12	185 500	400	*0.75*	*0.9*	*1*	270	*0.2*	*0.3*	*0.1*	0.6	162	USSR
SCUD B	185	16	*1.0*	*0.9*	*1*	14	*0.2*	*0.3*	*0.1*	0.6	8	Bulgaria, Czechoslovakia, GDR, Hungary and Romania have *Scud*, but only GDR believed to have *Scud* B
Ballistic missile sub-totals		1,213				978					651	
Aircraft												
Tu-22M *Backfire* B	3,000+	50	*0.37*	*0.8*	*5*	74	*0.15*	*0.2*	*0.3*	0.65	48	USSR. Long Range Air Force ac only (Naval Air Force ac excluded)
Tu-16 *Badger*	1,650	318	*0.37*	*0.8*	*4*	376	*0.15*	*0.1*	*0.25*	0.50	188	USSR
Tu-22 *Blinder*	1,750	135	*0.37*	*0.8*	*3*	117	*0.15*	*0.15*	*0.25*	0.55	64	USSR
Su-19 *Fencer*	600	230	*0.19*	*0.8*	*2*	68	*0.1*	*0.2*	*0.15*	0.45	30	USSR
Su-17 *Fitter* C/D	325	640	*0.19*	*0.8*	*2*	194	*0.1*	*0.1*	*0.12*	0.32	62	USSR
MiG-23/-27 *Flogger* B/D	450	1,400	*0.19*	*0.8*	*1*	212	*0.1*	*0.2*	*0.15*	0.45	95	USSR
MiG-21 *Fishbed* J/K/L/N	350	1,000	*0.19*	*0.8*	*1*	152	*0.1*	*0.1*	*0.12*	0.32	48	USSR
Su-7 *Fitter* A	275	220	*0.19*	*0.8*	*1*	33	*0.1*	*0.1*	*0.12*	0.32	10	USSR
	275	115	*0.25*	*0.8*	*1*	23	*0.1*	*0.1*	*0.12*	0.32	7	Czechoslovakia, Poland
Su-20 *Fitter* C	325	35	*0.25*	*0.8*	*2*	14	*0.1*	*0.1*	*0.12*	0.32	4	Poland
Il-28 *Beagle*	1,400	5	*0.50*	*0.8*	*1*	2	*0.1*	*0.05*	*0.15*	0.3	1	Poland
MiG-23 *Flogger* B	450	3	*0.25*	*0.8*	*1*	1	*0.1*	*0.2*	*0.15*	0.45	1	Czechoslovakia
Aircraft sub-totals		4,151				1,266					558	
GRAND TOTALS		5,364				2,244					1,209	

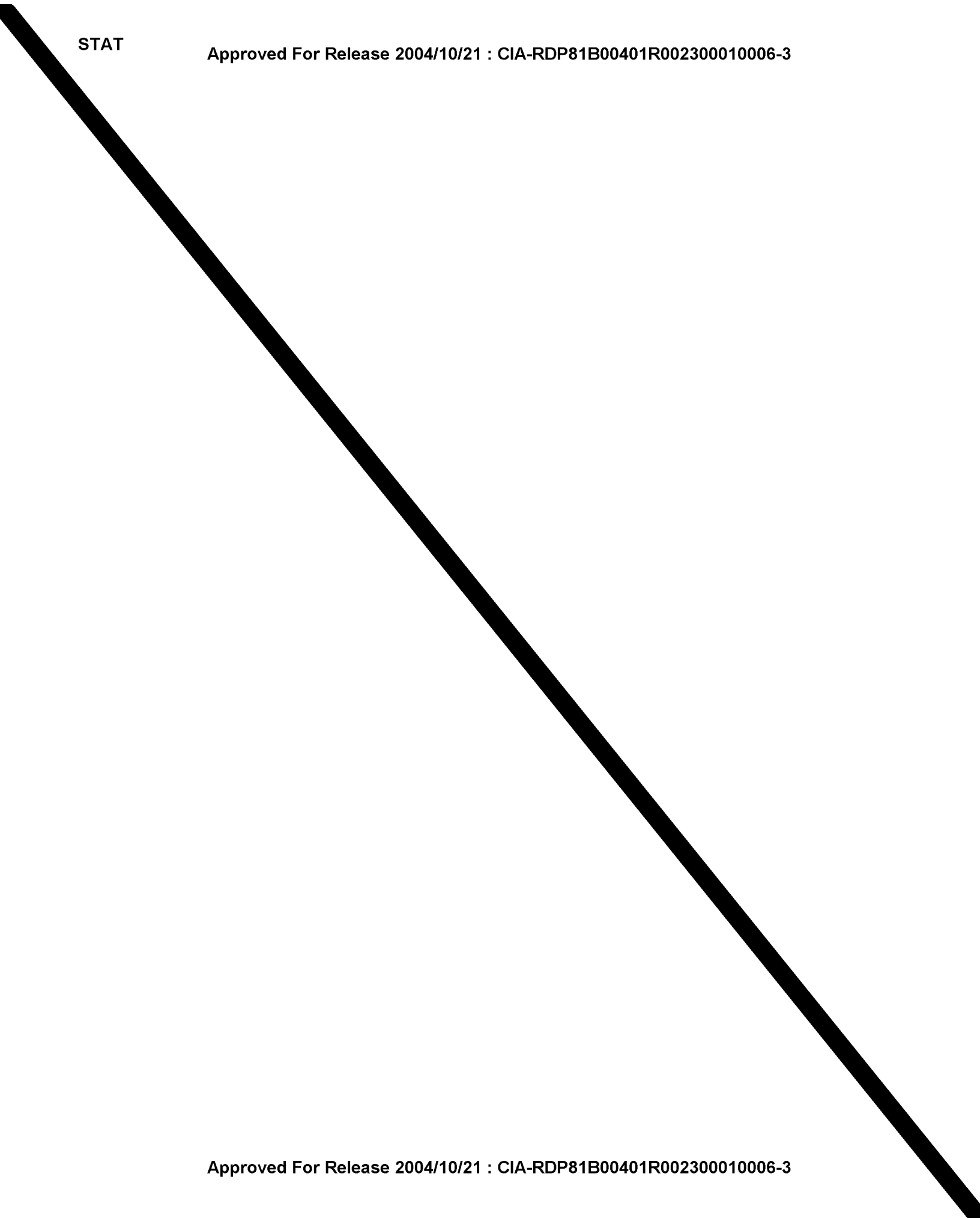
Table VIII: NATO Long- and Medium-range Nuclear Systems for the European Theatre

Category and type	Range (nm)	Inventory	Factors	Warheads assumed available	Indices	Quality index	System utility figure	Operating countries and Notes
IRBM								
MRBM								
SLBM								
SRBM								
Ballistic missile sub-totals								
Aircraft								
Aircraft sub-totals								
GRAND TOTALS								

Table VIII: NATO Long- and Medium-range Nuclear Systems for the European Theatre

Category and type	Range (nm)	Inventory	Factors: Utilization	Factors: Serviceability	Factors: No. of warheads	Warheads assumed available	Indices: Survivability	Indices: Penetration	Indices: Flexibility	Quality index	System utility figure	Operating countries and Notes
SLBM												
Polaris A-3	2,880	64[a]	*1.0*	*0.45*[a]	*1*	28	*0.25*	*0.3*	*0.1*	0.65	18	Britain. MRV counted as single warhead
M-20	3,000	64[a]	*1.0*	*0.45*[a]	*1*	28	*0.25*	*0.3*	*0.1*	0.65	18	France
IRBM												
SSBS S-2	1,875	18	*1.0*	*0.9*	*1*	14	*0.15*	*0.3*	*0.2*	0.65	9	France
SRBM												
Pershing	450	180	*1.0*	*0.9*	*1*	162	*0.2*	*0.3*	*0.15*	0.65	105	US, W. Germany US inventory in Europe 108; German 72 (under dual US–German control)
Ballistic missile sub-totals		326				232					150	
Land-based aircraft												
Vulcan B2	2,000	48	*1.0*	*0.8*	*4*	152	*0.15*	*0.15*	*0.3*	0.6	91	Britain. Range varies with flight profile
Buccaneer	500	50	*0.5*	*0.8*	*2*	40	*0.15*	*0.15*	*0.3*	0.6	24	Britain
Mirage IVA	2,000	33	*1.0*	*0.8*	*3*	78	*0.15*	*0.15*	*0.3*	0.6	46	France
F-4	1,400	175	*0.33*	*0.8*	*2*	92	*0.1*	*0.1*	*0.2*	0.4	36	W. Germany, Greece, Turkey
F-111E/F	2,925	156	*0.5*	*0.8*	*3*	186	*0.15*	*0.2*	*0.3*	0.65	120	US. 156 known to be based in Europe
FB-111A	3,000	66	*1.0*	*0.8*	*4*	208	*0.15*	*0.2*	*0.3*	0.65	135	US. Assumes half US inventory moved to Europe
F-4	1,400	324	*0.33*	*0.8*	*2*	170	*0.1*	*0.1*	*0.2*	0.4	68	US. European-based plus dual-based ac.
F-104	750	367	*0.33*	*0.8*	*1*	96	*0.1*	*0.1*	*0.15*	0.35	33	Belgium, W. Germany, Italy, Netherlands, Norway, Turkey
Jaguar	1,000	177	*0.33*	*0.8*	*1*	48	*0.1*	*0.1*	*0.15*	0.35	16	Britain, France
Mirage 5F	650	94	*0.33*	*0.8*	*1*	24	*0.1*	*0.1*	*0.12*	0.32	7	Belgium, France
Mirage IIIE	650	105	*0.33*	*0.8*	*1*	27	*0.1*	*0.1*	*0.12*	0.32	8	France
Carrier-based aircraft												
A-6E	800	20	*0.5*	*0.8*	*3*	24	*0.15*	*0.2*	*0.3*	0.65	15	US. Assumes 2 carriers in range and half strike ac used in nuclear role
A-7E	1,200	40	*0.5*	*0.8*	*1*	16	*0.15*	*0.1*	*0.3*	0.55	8	
Etendard IVM	350	24	*0.5*	*0.8*	*2*	18	*0.15*	*0.1*	*0.2*	0.45	8	Assumes 1 out of 2 carriers in range
Aircraft sub-totals		1,679				1,179					615	
Totals, less *Poseidon*		**2,005**				**1,411**					**765**	
US central systems												
Poseidon	2,800	(40)			*(10)*	400	*0.3*	*0.3*	*0.15*	0.75	300	Assumes 400 'central' US *Poseidon* warheads allocated to SACEUR Strike Plan
Totals, with *Poseidon*		**2,045**				**1,811**					**1,065**	

[a] Inventory figure of 64 represents SLBM complement of 4 SSBN. But no more than 2 SSBN are likely to be on patrol, and it is to their 32 SLBM that a 0.9 serviceability factor is applied.



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