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~~(PHOENIX EYES ONLY)~~

OPR: HQ SAC/XP  
DATE: 11 SEPT 91  
CLASS. BY: MULT SOURCES  
DECLASS ON: OADR

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1891 ✓

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# FORCE STRUCTURE REVIEW

OPR: HQ SAC/XPA  
24 AUG 1991

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# NUCLEAR WEAPONS REQUIREMENTS

- A METHODOLOGY PRIMER

OPR: XP

CLASSIFIED BY: MULT. SOURCES

DECLASSIFY ON: OADR

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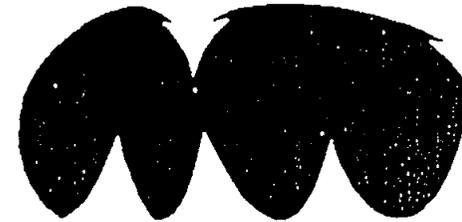
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## Determining Force Needs

The starting points

- Who do you target?
- What do you hold at risk?
- How many "targets" do we have?
- What quality of weapons do we need?
- What quantity of weapons do we need?
- What about a "reserve"?
- How do we hedge against uncertainty?



94 NPR !

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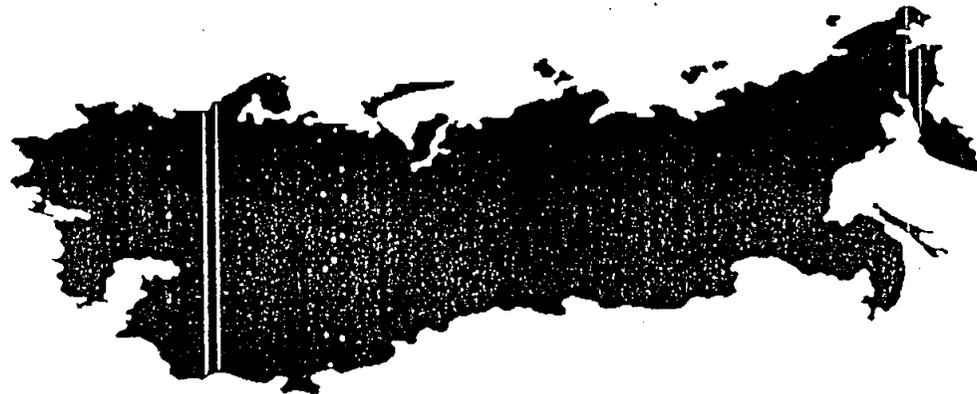
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## Who do you target?

For the near term, the Soviet Union remains the only nation capable of destroying our society.



ROT

Handle the Soviet Union and you can deter all other potential threats.

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## Determining Future Requirements

Working out how much is enough

- Step 1: How many installations must we target?
- Step 2: How many aim points (DGZs)?
- Step 3: Do we need "special weapons" due to hardness or timing requirements?
- Step 4: How many weapons do we need to be sure enough will arrive on target?
- Step 5: How much of a "reserve force" do we need?
- Step 6: How do we hedge against uncertainty in the future?

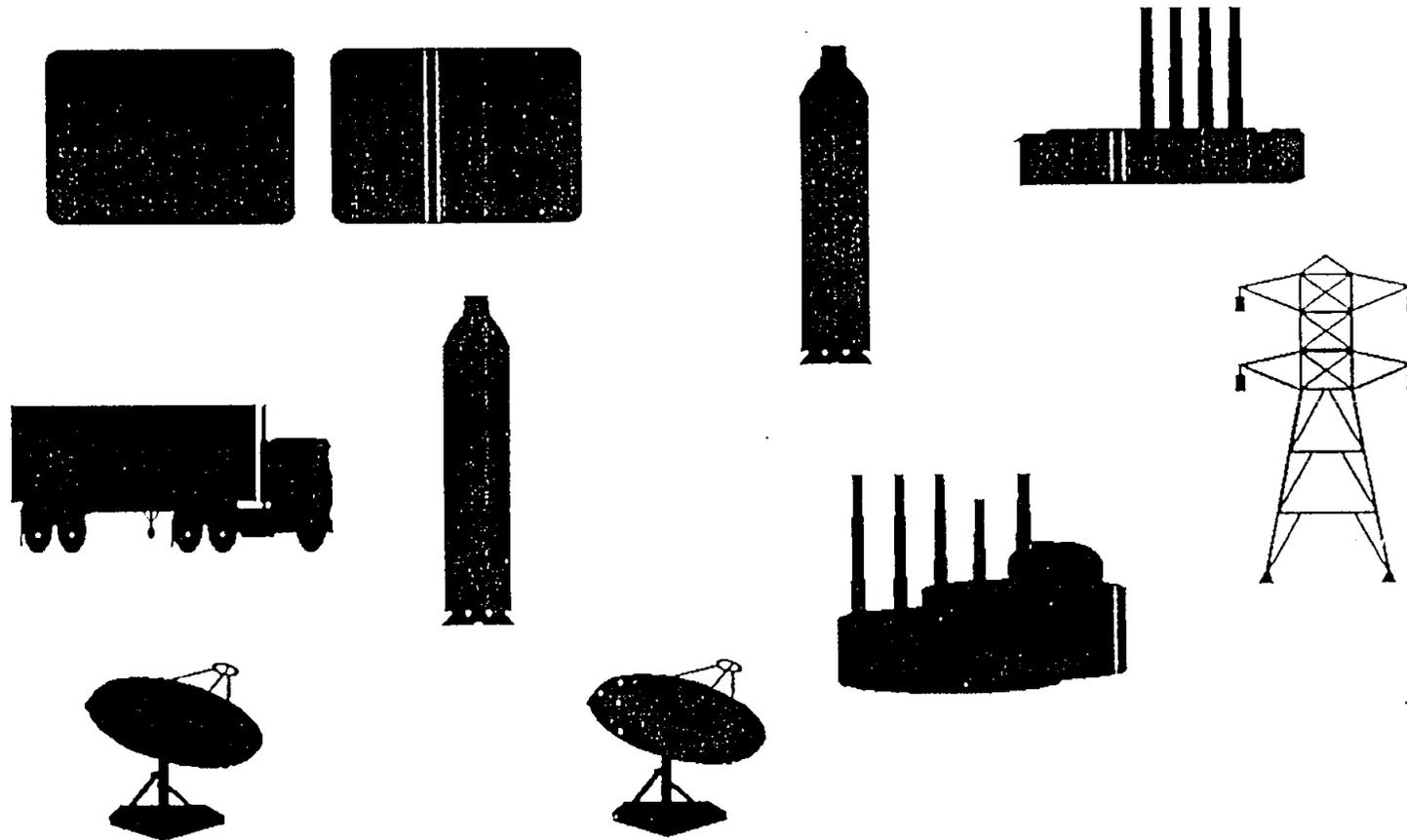
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# Step 1

How many installations?

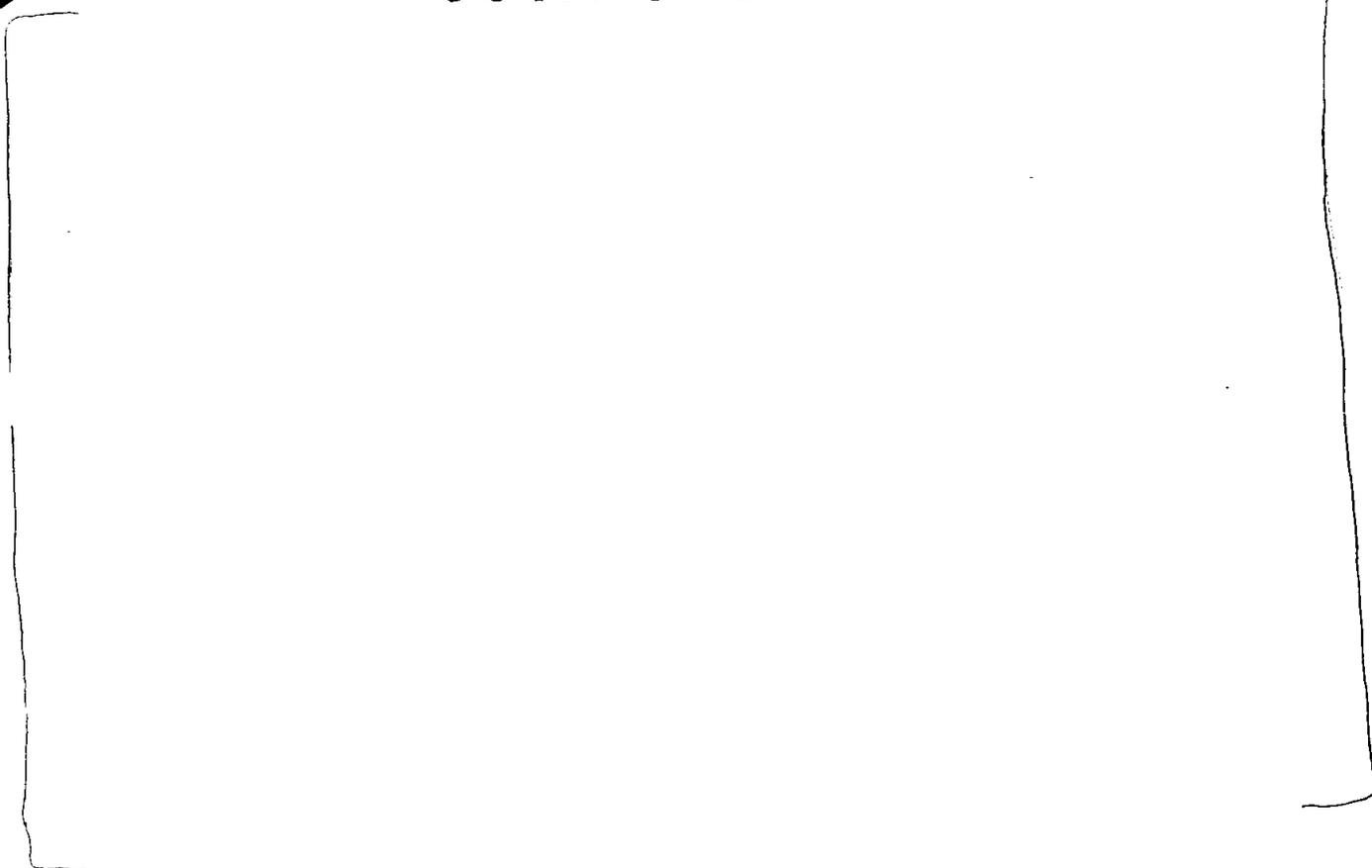


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# SIOP INSTALLATIONS

USSR ONLY



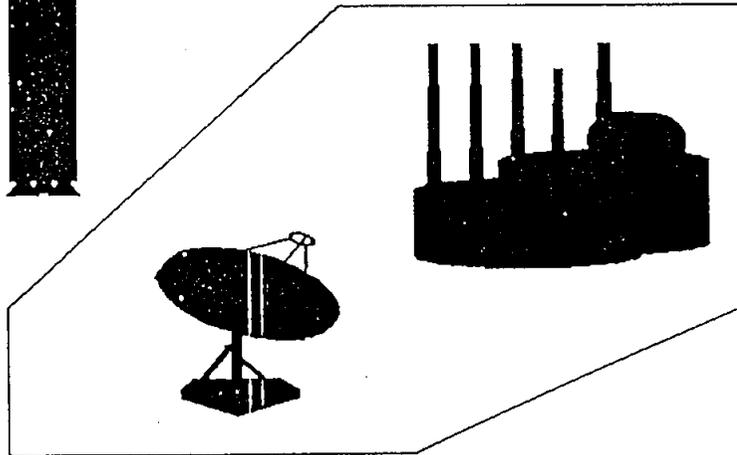
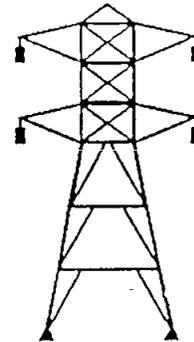
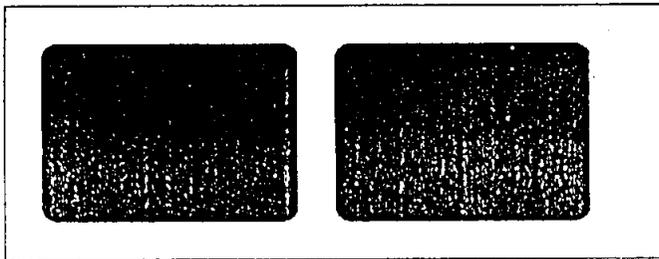
B1  
USSC

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## Step 2

How many aim points?



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TARGET BASE  
SOVIET UNION ONLY



B1  
USSR

B1

7 SIOP #

• DGZ DATA FOR 6, 6A, 6B, 6F, 6G, ARE EXTRAPOLATIONS WORKING TO GET DATA

~~SECRET~~

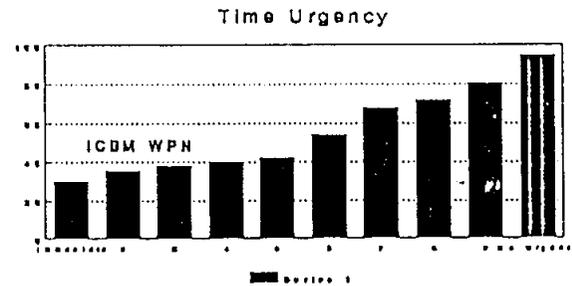
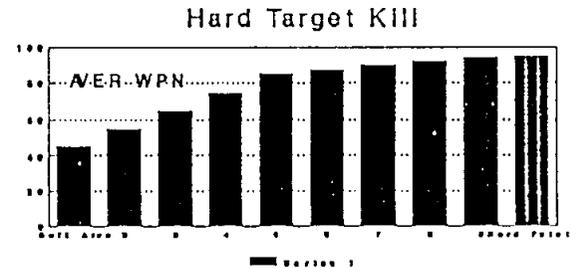
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### STEP 3

## Special Weapons

- \* Given the high quality of today's weapons, we can generally assume that if any weapon arrives, it will accomplish the task required
- \* Those few situations that call for qualities beyond the average weapon are handled by exception

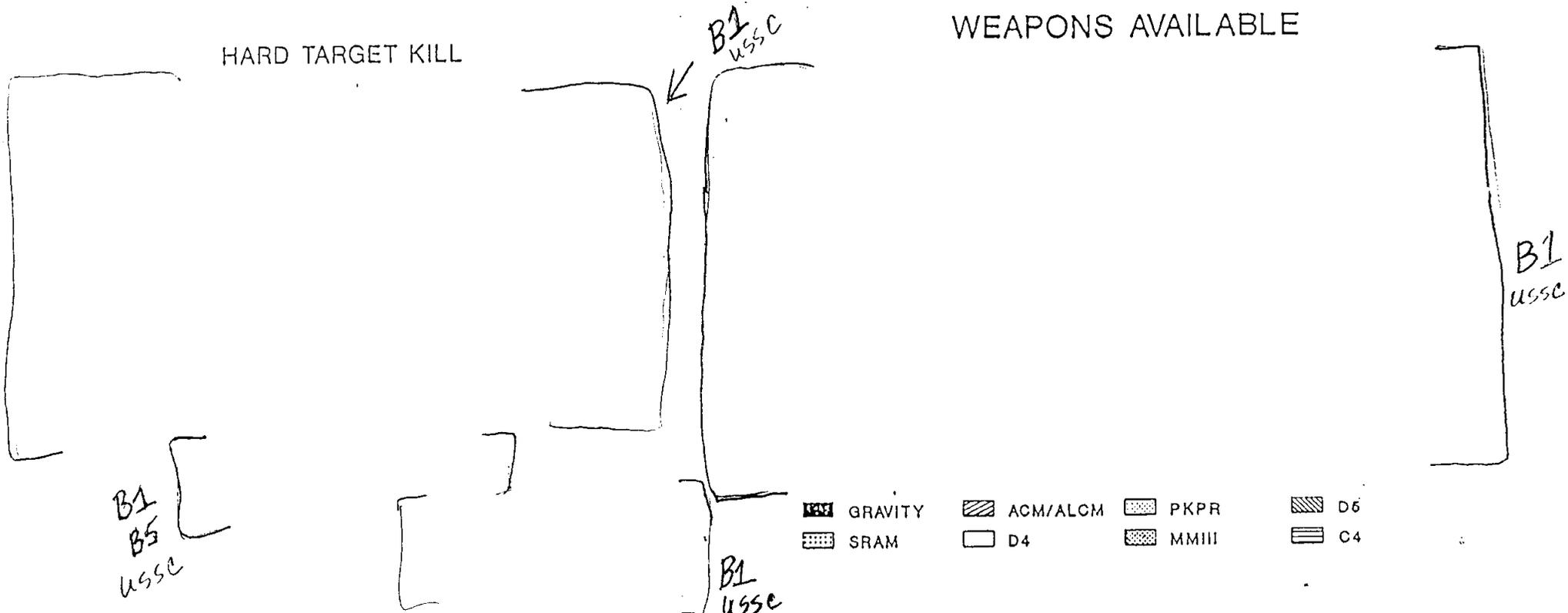


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HARD TARGET KILL

WEAPONS AVAILABLE



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## Step 4

### Weapons Quantity

- \* We counted the number of installations (10).
- \* We reduced this number to aim points (8).
- \* We determined we did not need "special weapons".
- \* We now must calculate the minimum number of weapons we need to start with to ensure that one arrives at every aim point.
- \* To do this, we take into account each weapon's probability of arrival (PA).

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## Step 4 (Cont.) Probability of Arrival

- \* Probability of Arrival = overall probability that a weapon will arrive on its target.

$$PA = PLS \times WSR \times PTP$$

- \* PA is the product of the following:
  - \*\* PLS or Prelaunch Survivability: the probability a weapon will survive attack and launch.
  - \*\* WSR or Weapon System Reliability: the probability a weapon will function as designed.
  - \*\* PTP or Probability to Penetrate: the probability a weapon will get through an enemy's defenses to its target.

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## Step 4 (Cont.)

### What Affects PLS?

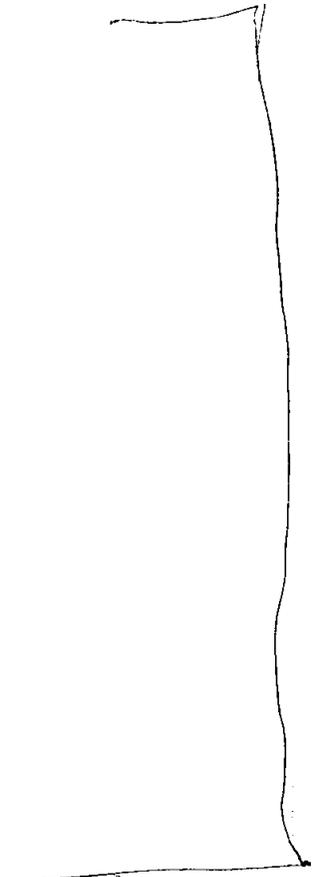
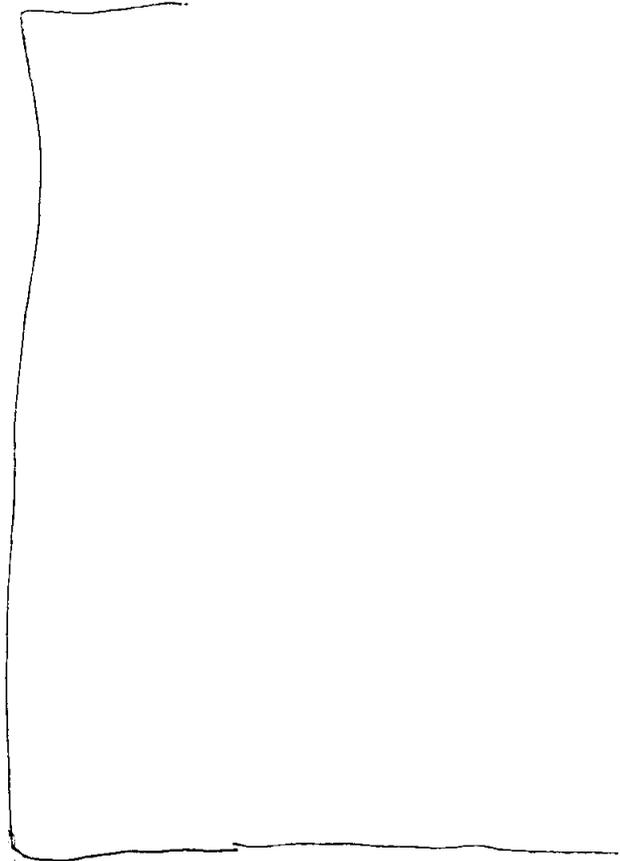
- \* If a nuclear weapon accurately attacks a target, the target will be destroyed.
- \* The trick is to either hide or move.
  - Get your submarines out of port before the attack arrives.
  - Have your bombers launch to escape the attack based on tactical warning.
  - If possible, launch your silo-based ICBMs before the full attack arrives.

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PLS



B1  
USSC

—•— SLBMs    + ICBMs    \*— BOMBERS

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## Step 4 (Cont.)

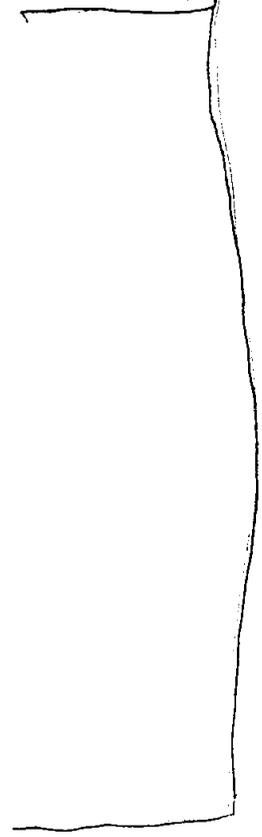
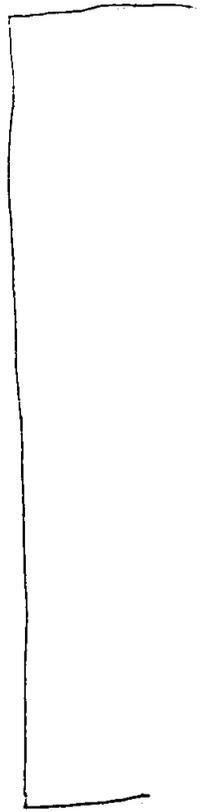
### What Affects WSR?

- \* The more complex the weapon system, the more difficult it is to maintain WSR.
- \* The overall weapon system must be reliable enough to function successfully for the duration of the system's combat mission.
- \* Once again, you must consider both the reliability of the strategic nuclear delivery vehicle that carries (the ICBM, the submarine and SLBM, or the bomber) and the reliability of the weapon itself.

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WSR



B1  
USC

—•— SLBMs    —+— ICBMs    —\*— BOMBERS

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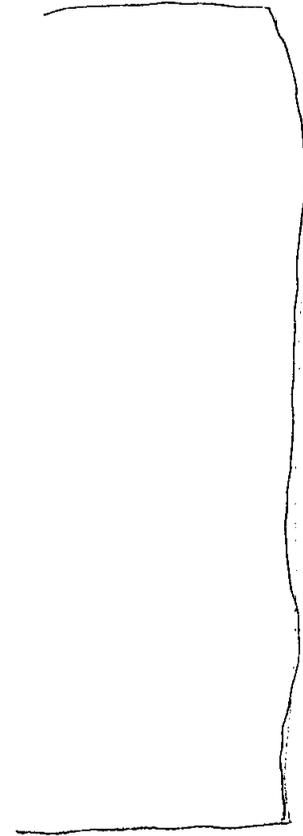
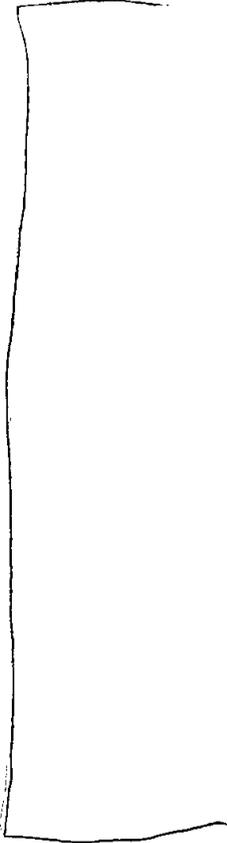
## Step 4 (Cont.) What Affects PTP?

- \* The issues here are:
  - What is the probability that an enemy can detect our attacking forces?
  - If detected, what is the probability that they can track them sufficiently to direct defensive systems against them?
  - If so directed, what is the probability that the defenses can engage and destroy our attacking forces?

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PTP



B1  
USSC

—•— SLBMs    —+— ICBMs    —\*— BOMBER

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## Step 4 (Cont.) Calculating PA

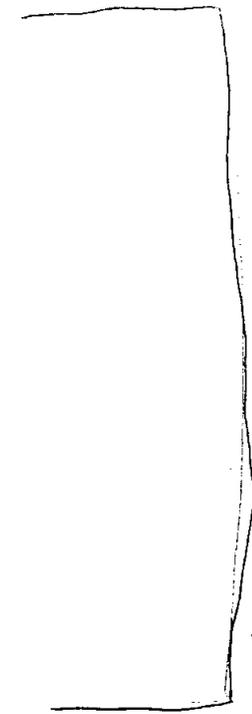
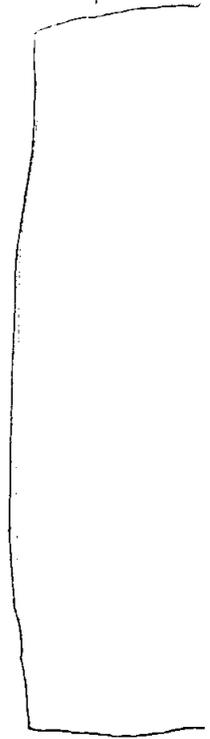
- \* What is the PA of an ICBM with:
  - \*\* 100% pre-launch survivability (PLS)
  - \*\* 90% weapon system reliability (WSR)
  - \*\* 100% probability of penetrating enemy defenses (PTP)
  
- \* What is the PA of a bomber weapon with:
  - \*\* 100% pre-launch survivability (PLS)
  - \*\* 85% weapon system reliability (WSR)
  - \*\* 85% probability of penetrating enemy defenses (PTP)

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# PROBABILITY OF ARRIVAL



B1  
USSC

—•— SLBMS    —+— ICBMs    —\*— BOMBERS

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## Step 4 (Cont.)

### Calculating Arriving Weapons

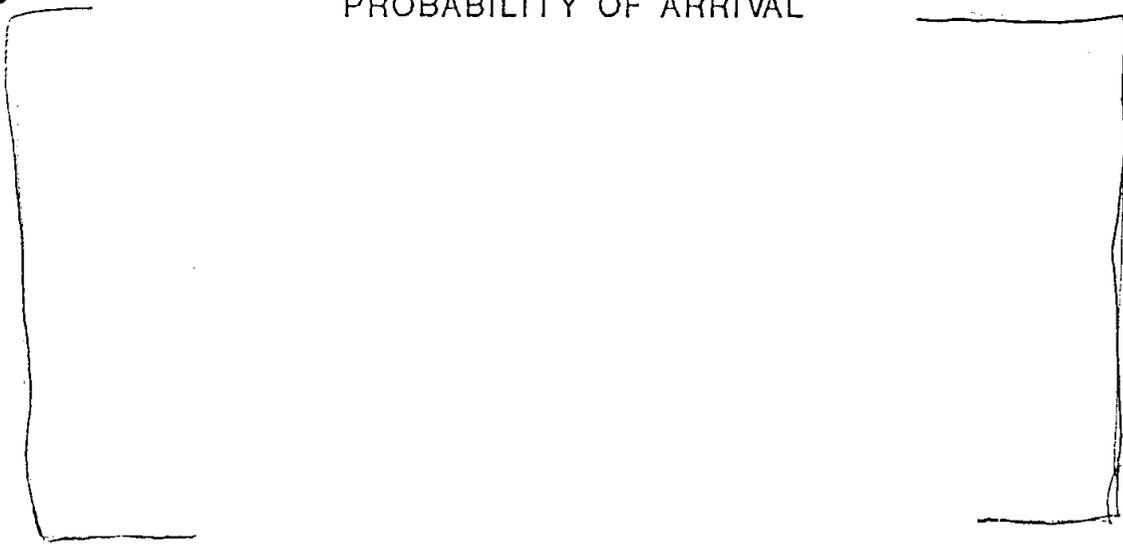
- \* Need to destroy 8 aim points
- \* Arms Control:
  - 4 ICBMs (PA/75%) with 1 RV each
  - 4 SLBMs (PA/75%) with 1 RV each
  - Unlimited bombers (PA/50%) 1 bomb each
- \* To meet the basic attack requirement:
  - 4 ICBMs x .75 = 3 aim points destroyed
  - 4 SLBMs X .75 = 3 aim points destroyed
- \* With 50% PA, need 4 bomber weapons to kill last 2 aim points

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# WEAPON QUALITY

PROBABILITY OF ARRIVAL



B1  
USSC

— SLBMS    + ICBMs    \* BOMBERS

PA = WSR \* PLS \* PTP

EX: (.9 \* .9 \* .9) = .73

PD (CEP, YIELD, VNTK)

(VNTK = 44L7)



B1  
USSC

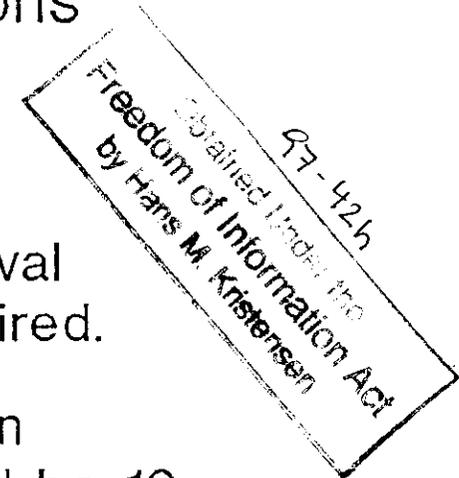
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## Step 4 (Cont.)

### Calculating Arriving Weapons

- \* Need to destroy 8 aim points
- \* If the force wide probability of arrival were 1.0, 8 weapons would be required.
- \* If the force wide PA were 80%, then the absolute minimum needed would be 10,
  - assuming we knew exactly which weapons did not arrive; and,
  - if we could retarget other weapons to compensate.



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# CALCULATING ARRIVING WEAPONS (YEAR 2001)



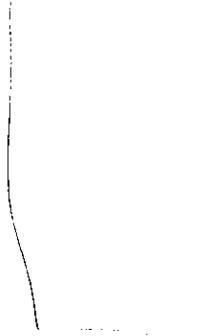
31  
B5  
USSC

\* ARMS CONTROL:

6000 ACCOUNTABLE WARHEADS

4900 BALLISTIC MISSILE WARHEADS

1600 SNDVs



B1  
B5  
USSC

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## Step 5 Reserves

- \* Traditionally, we have held a portion of our most survivable forces in a secure reserve.
- \* The secure reserve handles contingencies and gives limited restrike capability.
- \* For our example, suppose the standard were to set aside 25% of our SLBM force.
- \* We must consider the removal of this force from the basic attack.

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SRF

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## Step 5 (Cont.)

### Recalculating Arriving Weapons

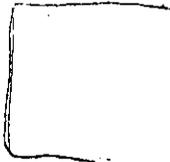
- \* Need to destroy 8 aim points
- \* Arms Control:
  - 4 ICBMs (PA/75%) with 1 RV each
  - 4 SLBMs (PA/75%) with 1 RV each
  - Unlimited bombers (PA/50%) 1 bomb each
- \* To meet the basic attack requirement:
  - 4 ICBMs x .75 = 3 aim points destroyed
  - 3 SLBMs X .75 = 2.25 aim points destroyed
  - 1 SLBM in the secure reserve
- \* With 50% PA, need 6 bomber weapons to kill last 3 aim points

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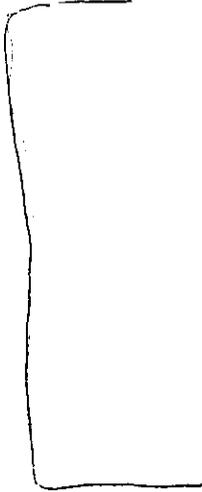
# RECALCULATING ARRIVING WEAPONS



B1  
B5  
USSC

\* ARMS CONTROL:

- 6000 ACCOUNTABLE WARHEADS
- 4900 BALLISTIC MISSILE WARHEADS
- 1600 SNDVs



B1  
B5  
USSC

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## Step 6 TRIAD Hedging

- \* The TRIAD will be more important in the future because:
  - \*\* fewer eggs in fewer baskets; and,
  - \*\* fewer kinds of both eggs and baskets.
- \* TRIAD hedging protects against the failure of one of the primary legs of an attack.
- \* Under the TWIN TRIAD concept, and as in our example, the bomber augments the attack and then is sized to hedge against the failure of one of the ballistic legs.

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## Step 6 (Cont.)

How could a leg fail?

- \* Associated with PLS:
  - \*\* a communications failure could make the ICBM force "ride-out" a full attack
  - \*\* a breakthrough could make the ocean transparent to satellites
  
- \* Associated with WSR:
  - \*\* a design flaw in the Minuteman III or Trident II missile of the associated nuclear weapons

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## Step 6 (Cont.) Calculating Hedges

Hedging the loss of the ICBM leg:

- \* 4 ICBMs (PA=.75) provide 3 arriving weapons to the basic attack.
- \* 6 bomber weapons (PA=.50, 3 arriving wpns) hedge the loss of the 4 ICBMs.

Hedging the loss of the SLBM leg:

- \* 3 SLBMs (PA=.75) provide 2.25 arriving weapons to the basic attack.
- \* 5 bomber weapons (PA=.50, 2.5 arriving wpns) hedge the loss of the 3 SLBMs.

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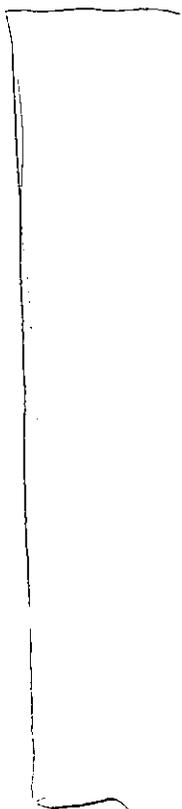
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# HEDGE CALCULATION



B1  
B5  
USSC

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## Requirements Summary

To attack 8 aim points

### Basic Attack

- ICBMs 4 (100% of ICBMs)
- SLBMs 3 (75% of SLBMs)
- Bombers 6 (50% of Bombers)

### Reserve Force

- SLBMs 1 (25% of SLBMs)

### Hedge Force

- Bombers 6 (50% of Bombers)

### Totals Needed

- ICBMs 4
- SLBMs 4
- Bombers 12

Total Weapons

20

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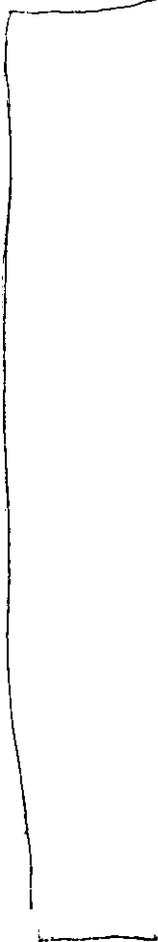
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REQUIREMENTS SUMMARY  
BASIC ATTACK



B1  
B5  
USSC

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## Observations

- \* Hedging in the traditional TRIAD concept will be much more important in the future.
- \* The TWIN TRIAD concept places the initial day-to-day deterrence burden on the two ballistic legs.
  - \*\* The bomber leg augments their attack as needed and hedges against the failure of one ballistic leg.
- \* Balance between the ballistic missile legs (ICBM/SLBM) permits a consistent bomber hedge requirement.

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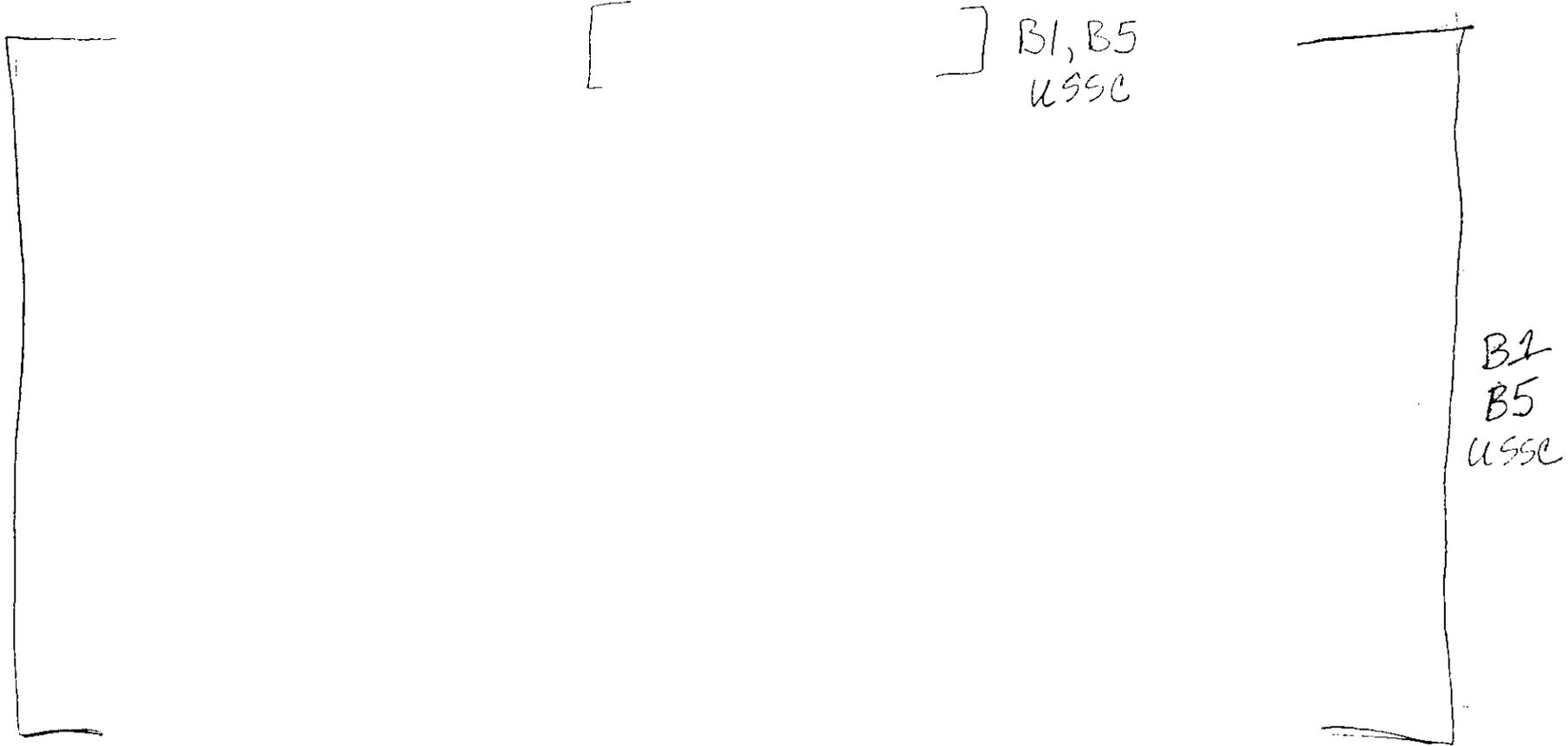
## Observations (Cont.)

- \* The Secure Reserve is not a hedge. ((
  - \*\* It is mostly SLBMs, most enduring assets.
  - \*\* Cannot hedge against failure of SLBMs in the basic attack.
  
- \* The decline of the overall target base gives us the chance to use bombers in a real TRIAD hedge role for the first time.
  
- \* Placing the bomber force in this role allows the use of the bomber to swing as needed between the TWIN TRIADS. It makes both the TRIAD and the TWIN TRIADS possible.

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# TOTAL WEAPONS



[ ] B1, B5  
USSC

B1  
B5  
USSC

■ ICBM  
[ ] B1, B5  
USSC

▨ SLBM

▤ BMBER COV ▨ SRF

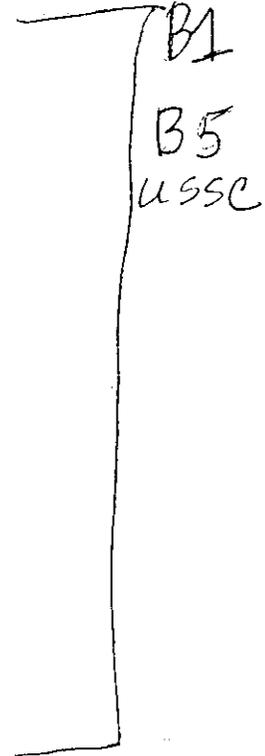
+ PB

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# TOTAL WEAPONS

[ ] B1, B5  
USSC



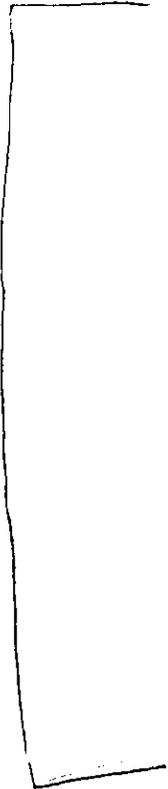
[ ] B1, B5 USSC	■ ICBM	▨ SLBM	▤ BMBER COV	▩ SRF	[ ] B1, B5 USSC
		+ PB	△ PB MINUS B1		

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# TOTAL WEAPONS

[ ] B1, B5  
USSC



B1  
B5  
USSC

■ ICBM

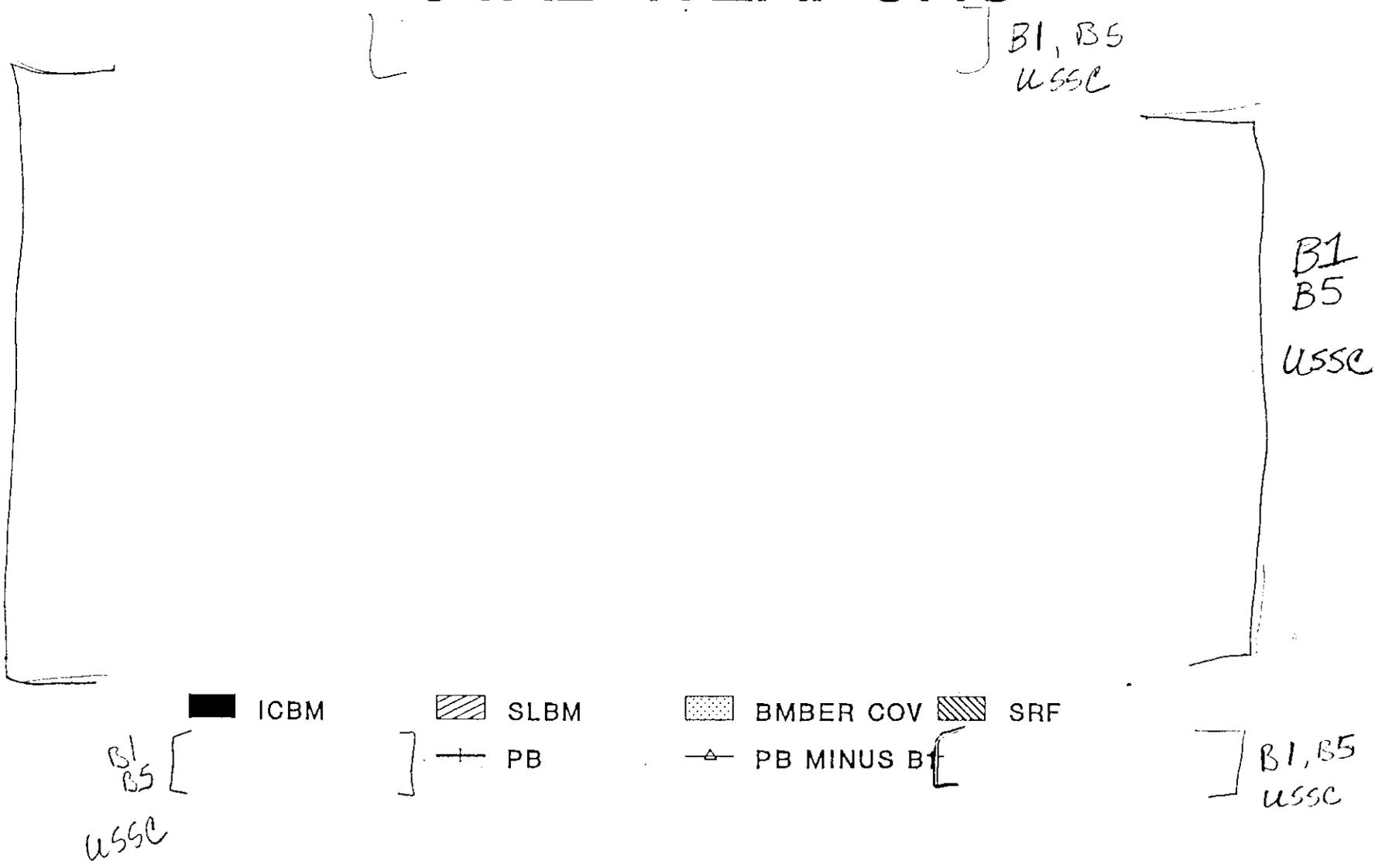
▨ SLBM

▤ BMBER COV ▧ SRF

+ PB

B1  
B5  
USSC [

# TOTAL WEAPONS



■ ICBM

▨ SLBM

▤ BMBER COV

▨ SRF

+ PB

△ PB MINUS B

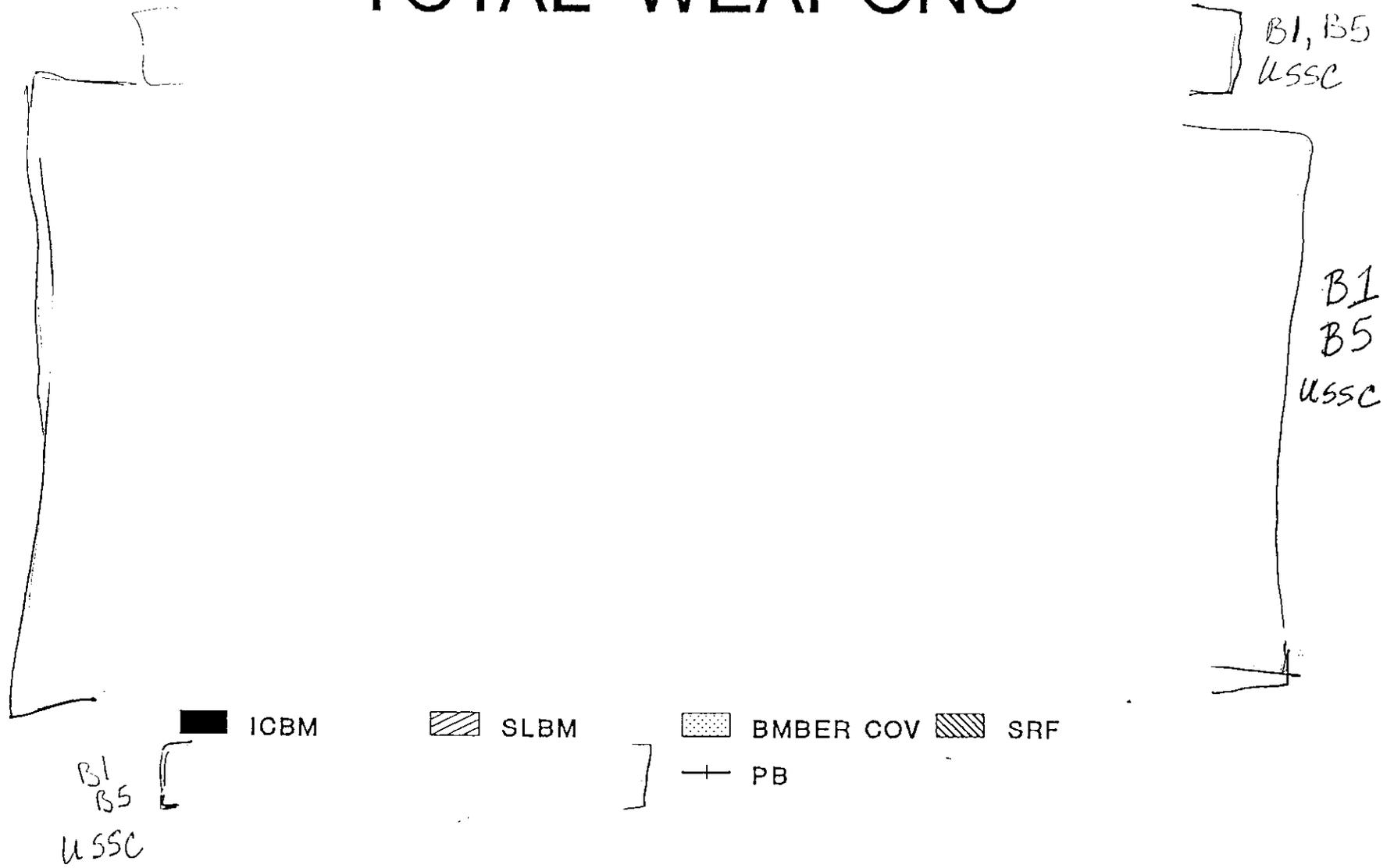
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USSC

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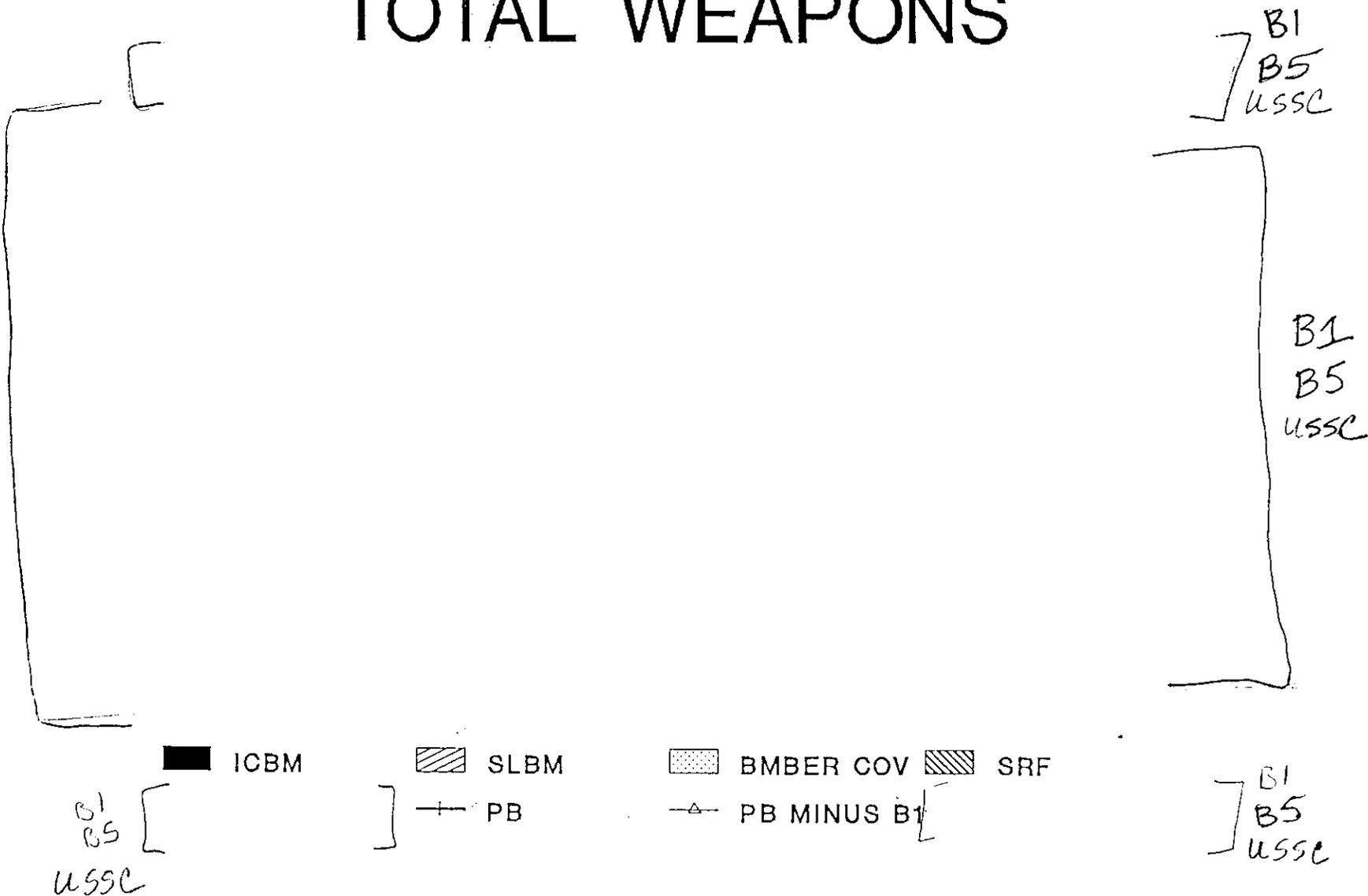
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B1, B5  
USSC

# TOTAL WEAPONS



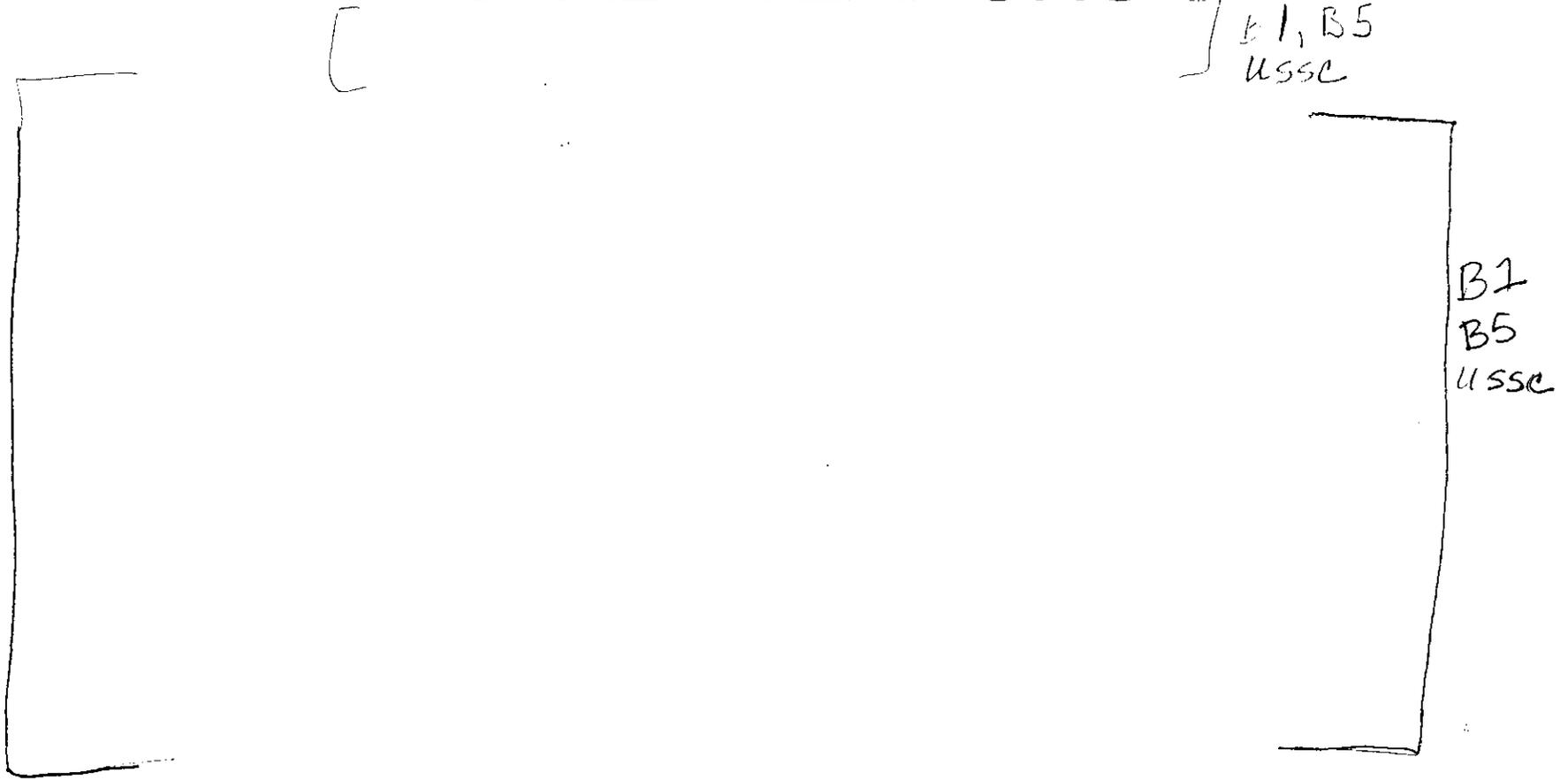
# TOTAL WEAPONS



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# TOTAL WEAPONS

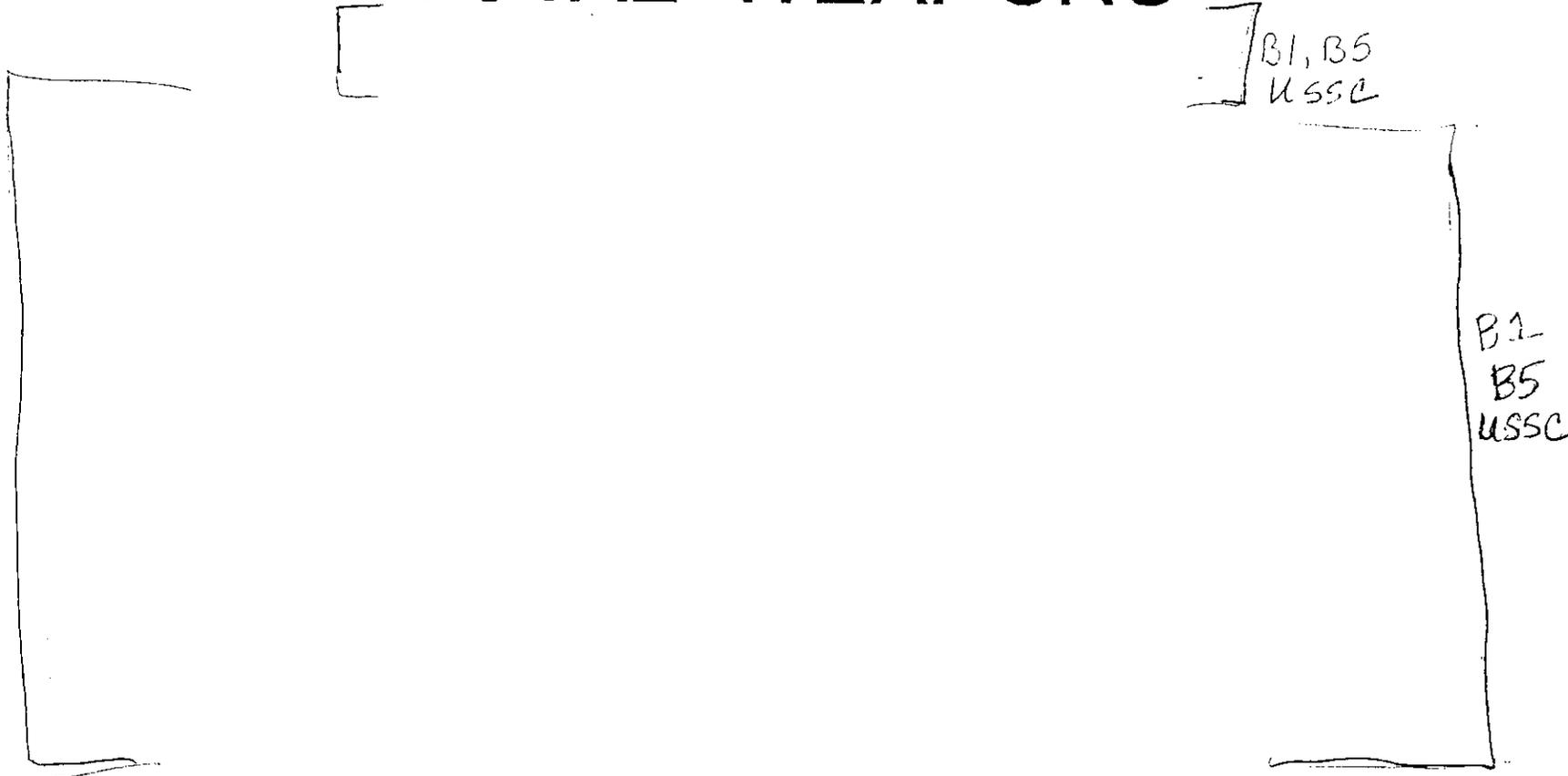


-  ICBM
  -  SLBM
  -  BMBER COV
  -  SRF
  -  PB
- B1  
B5  
USSC

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# TOTAL WEAPONS



ICBM  
 B1  
 B5  
 USSC

SLBM  
 + PB

BMBER COV  
 SRF  
 -△ PB MINUS B-1

B1, B5  
 USSC

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WARNING NOTICE  
SOURCES INTE  
METHODS

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WNINTEL

# Use of Heavy Bombers in Strategic Nuclear Operations in a Changing Environment (U)



B1  
B5  
U.S.S.C.

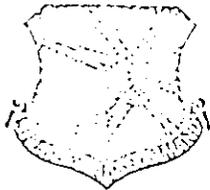
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SEP 1991

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RAND

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TREND IN U.S. RETALIATORY CAPABILITY  
MILITARY DAMAGE EXPECTANCY  
PROGRAMMED FORCE

~~SECRET~~

B1  
B5  
USSC

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# WEAPONS -- ARSENAL VS ARRIVING



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9 SEP 1991

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INC. BULLET POINTS NUMBER OF DGZs BASED ON A DGZ/INSTALLATION RATIO  
.25 .525 .9 .075 .05 .025 .8 .775 .75 .725 .7

6000	5700	5550	5400	5250	5100	4950	4800	4650	4500	4350	4200
5900	5645	5497	5340	5182	5015	4867	4720	4572	4425	4277	4130
5800	5540	5395	5220	5075	4930	4785	4640	4495	4350	4205	4060
5700	5445	5302	5130	4987	4845	4702	4560	4417	4275	4132	3990
5600	5350	5180	5040	4900	4760	4620	4480	4340	4200	4060	3920
5500	5255	5087	4950	4812	4675	4537	4400	4262	4125	3987	3850
5400	5160	4995	4860	4725	4590	4455	4320	4185	4050	3915	3780
5300	5065	4902	4770	4637	4505	4372	4240	4107	3975	3842	3710
5200	4970	4810	4680	4550	4420	4290	4160	4030	3900	3770	3640
5100	4875	4717	4590	4462	4335	4207	4080	3952	3825	3697	3570
5000	4780	4625	4500	4375	4250	4125	4000	3875	3750	3625	3500
4900	4685	4532	4410	4287	4165	4042	3920	3797	3675	3552	3430
4800	4590	4440	4320	4200	4080	3960	3840	3720	3600	3480	3360
4700	4495	4347	4230	4112	3995	3877	3760	3642	3525	3407	3290
4600	4400	4255	4140	4025	3910	3795	3680	3565	3450	3335	3220
4500	4305	4162	4050	3937	3825	3712	3600	3487	3375	3262	3150
4400	4210	4070	3960	3850	3740	3630	3520	3410	3300	3190	3080
4300	4115	3977	3870	3762	3655	3547	3440	3332	3225	3117	3010
4200	4020	3885	3780	3675	3570	3465	3360	3255	3150	3045	2940
4100	3925	3792	3690	3587	3485	3382	3280	3177	3075	2972	2870
4000	3830	3700	3600	3500	3400	3300	3200	3100	3000	2900	2800
3900	3735	3607	3510	3412	3315	3217	3120	3022	2925	2827	2730
3800	3640	3515	3420	3325	3230	3135	3040	2945	2850	2755	2660
3700	3545	3422	3330	3237	3145	3052	2960	2867	2775	2682	2590
3600	3450	3330	3240	3150	3060	2970	2880	2790	2700	2610	2520
3500	3355	3237	3150	3062	2975	2887	2800	2712	2625	2537	2450
3400	3260	3145	3060	2975	2890	2805	2720	2635	2550	2465	2380
3300	3165	3052	2970	2887	2805	2722	2640	2557	2475	2392	2310
3200	3070	2960	2880	2800	2720	2640	2560	2480	2400	2320	2240
3100	2975	2967	2790	2712	2635	2557	2480	2402	2325	2247	2170
3000	2880	2775	2700	2625	2550	2475	2400	2325	2250	2175	2100
2900	2785	2682	2610	2537	2465	2392	2320	2247	2175	2102	2030
2800	2690	2590	2520	2450	2380	2310	2240	2170	2100	2030	1960
2700	2595	2497	2430	2362	2295	2227	2160	2092	2025	1957	1890
2600	2470	2405	2340	2275	2210	2145	2080	2015	1950	1885	1820
2500	2375	2312	2250	2187	2125	2062	2000	1937	1875	1812	1750
2400	2280	2220	2160	2100	2040	1980	1920	1860	1800	1740	1680
2300	2185	2127	2070	2012	1955	1897	1840	1782	1725	1667	1610
2200	2090	2035	1980	1925	1870	1815	1760	1705	1650	1595	1540
2100	1995	1942	1890	1837	1785	1732	1680	1627	1575	1522	1470
2000	1900	1850	1800	1750	1700	1650	1600	1550	1500	1450	1400

UNCLASSIFIED



# FORCE STRUCTURE

## REVIEW

Obtained Under the  
Freedom of Information Act  
by Hans M. Kristensen  
97-426

OPR: HQ SAC/XPA  
15 AUG 1991

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## OBJECTIVES

- NUCLEAR DETERRENCE
  - BASIC SIOP
  - RESERVE
  - HEDGING
- CONVENTIONAL WARFIGHTING
  - BASIC JSCP
  - BASING
  - SUSTAINABILITY
- ADDITIONAL CONSIDERATIONS
  - CRISIS STABILITY
  - ARMS RACE STABILITY
  - DISCOURAGE PROLIFERATION
  - AVOID ASYMMETRIC ADVANTAGE
  - RATIOS TO THIRD WORLD COUNTRIES

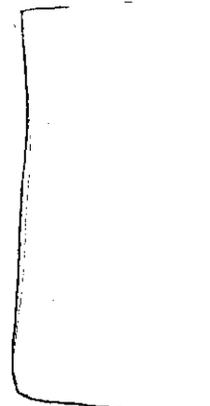
WMD

UNCLASSIFIED



# NATIONAL GUIDANCE NUCLEAR DETERRENCE

• NSDD-13



• NUWEP 91



• JSCP 91-92

B1 [



B1  
USSC



B1  
USSC



B1  
USSC

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UNCLASSIFIED

## OBJECTIVES

- ✓ • NUCLEAR DETERRENCE
  - BASIC SIOP
  - RESERVE
  - HEDGING
  
- CONVENTIONAL WARFIGHTING
  - BASIC JSCP
  - BASING
  - SUSTAINABILITY
  
- ADDITIONAL CONSIDERATIONS
  - CRISIS STABILITY
  - ARMS RACE STABILITY
  - DISCOURAGE PROLIFERATION
  - AVOID ASYMMETRIC ADVANTAGE
  - RATIOS TO THIRD WORLD COUNTRIES

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# BASIC SIOP

- NSDD-13



- NUWEP 91



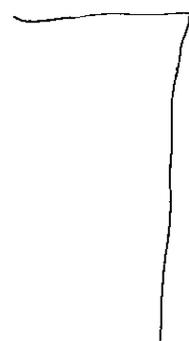
- JSCP 91-92



B1  
USSC



B1  
USSC



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USSC

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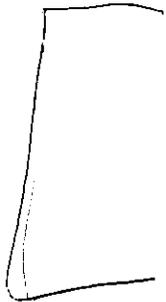
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# DEFINITIONS BASIC SIOP STRATEGY



B1  
B5  
USSC

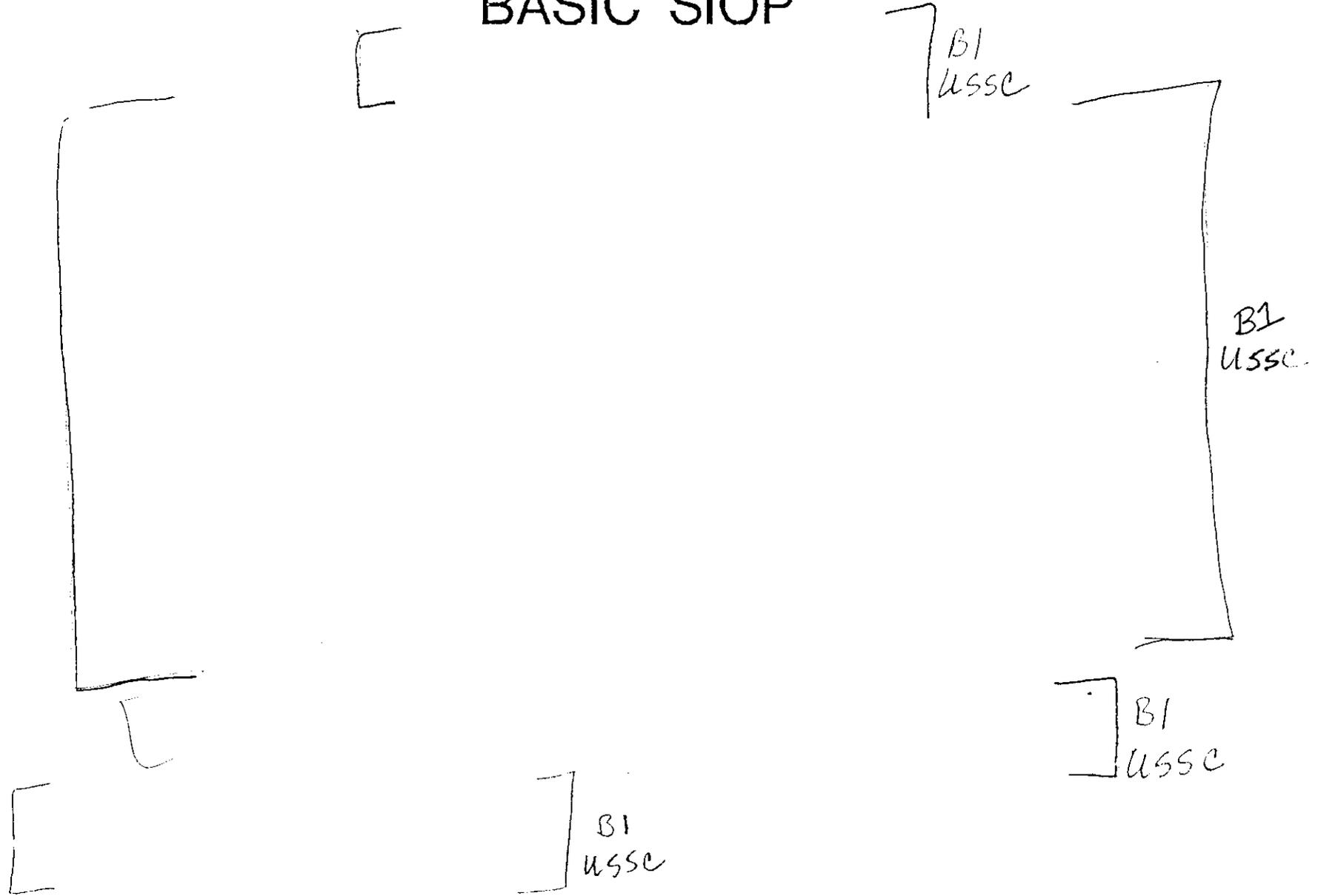
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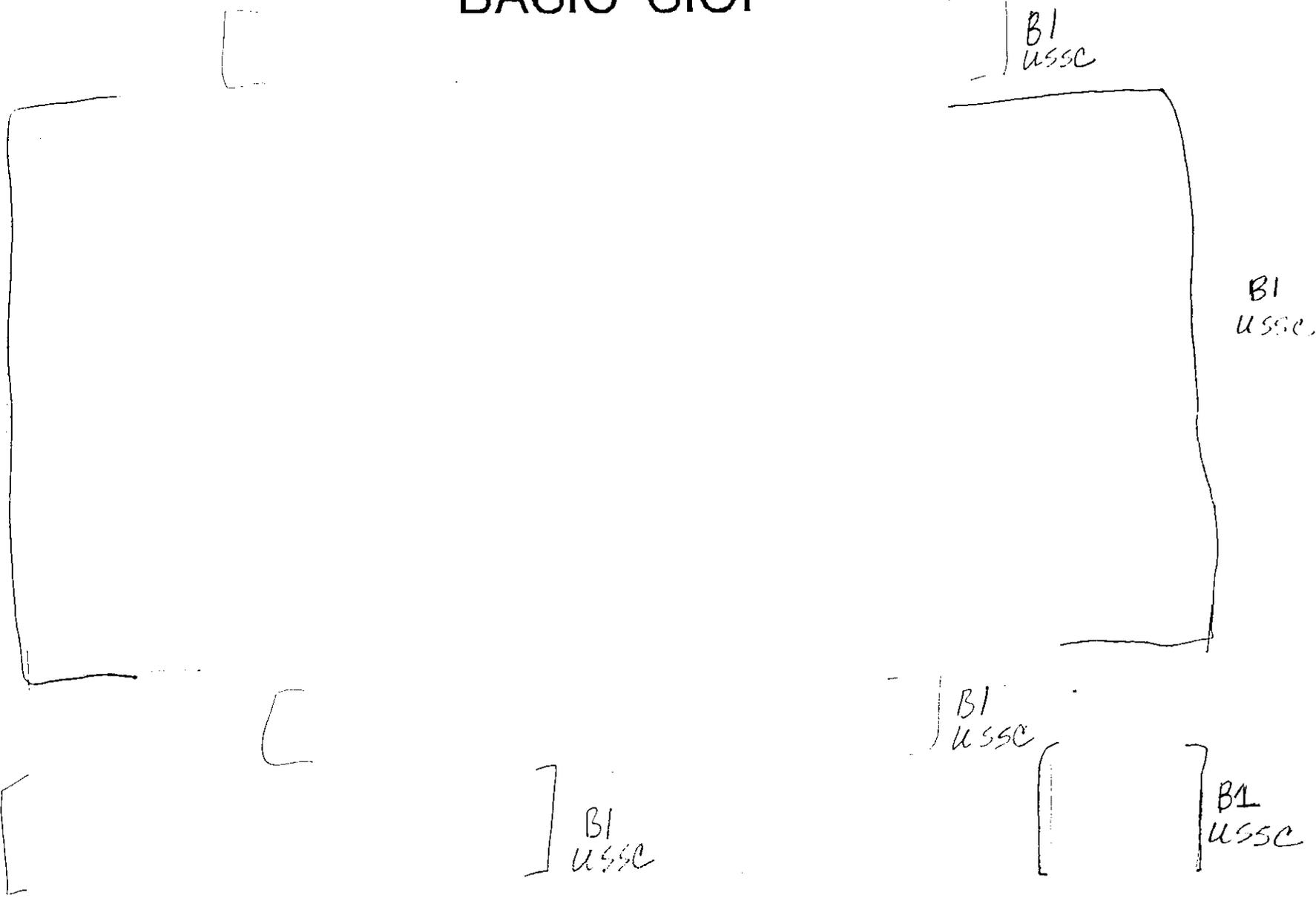
# BASIC SIOP



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# BASIC SIOP

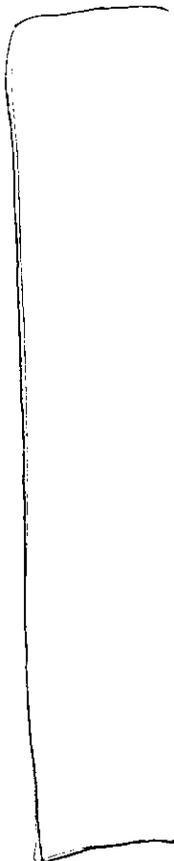




PARAMETRIC PA



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USSC

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BASIC SIOP

B1  
USSC

Obtained under the  
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97-42h

B1  
USSC

B1  
SECRET USSC

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UNCLASSIFIED

UNCLASSIFIED

## OBJECTIVES

- NUCLEAR DETERRENCE
  - BASIC SIOP
  - ✓ •• RESERVE
  - HEDGING
  
- CONVENTIONAL WARFIGHTING
  - BASIC JSCP
  - BASING
  - SUSTAINABILITY
  
- ADDITIONAL CONSIDERATIONS
  - CRISIS STABILITY
  - ARMS RACE STABILITY
  - DISCOURAGE PROLIFERATION
  - AVOID ASYMMETRIC ADVANTAGE
  - RATIOS TO THIRD WORLD COUNTRIES

UNCLASSIFIED

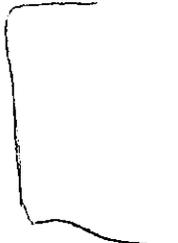


# RESERVES

- NSDD-13



- NUWEP 91



- JSCP 91-92



B1  
USSC



B1  
USSC



B1  
USSC

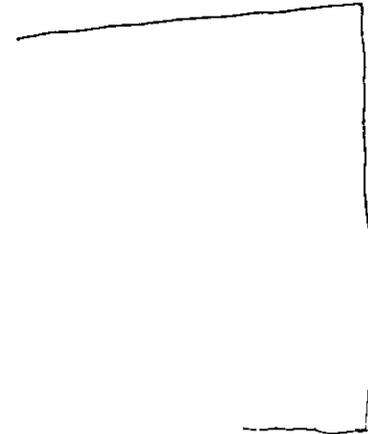
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# DEFINITIONS

## NUCLEAR RESERVE ALTERNATIVES



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USSC



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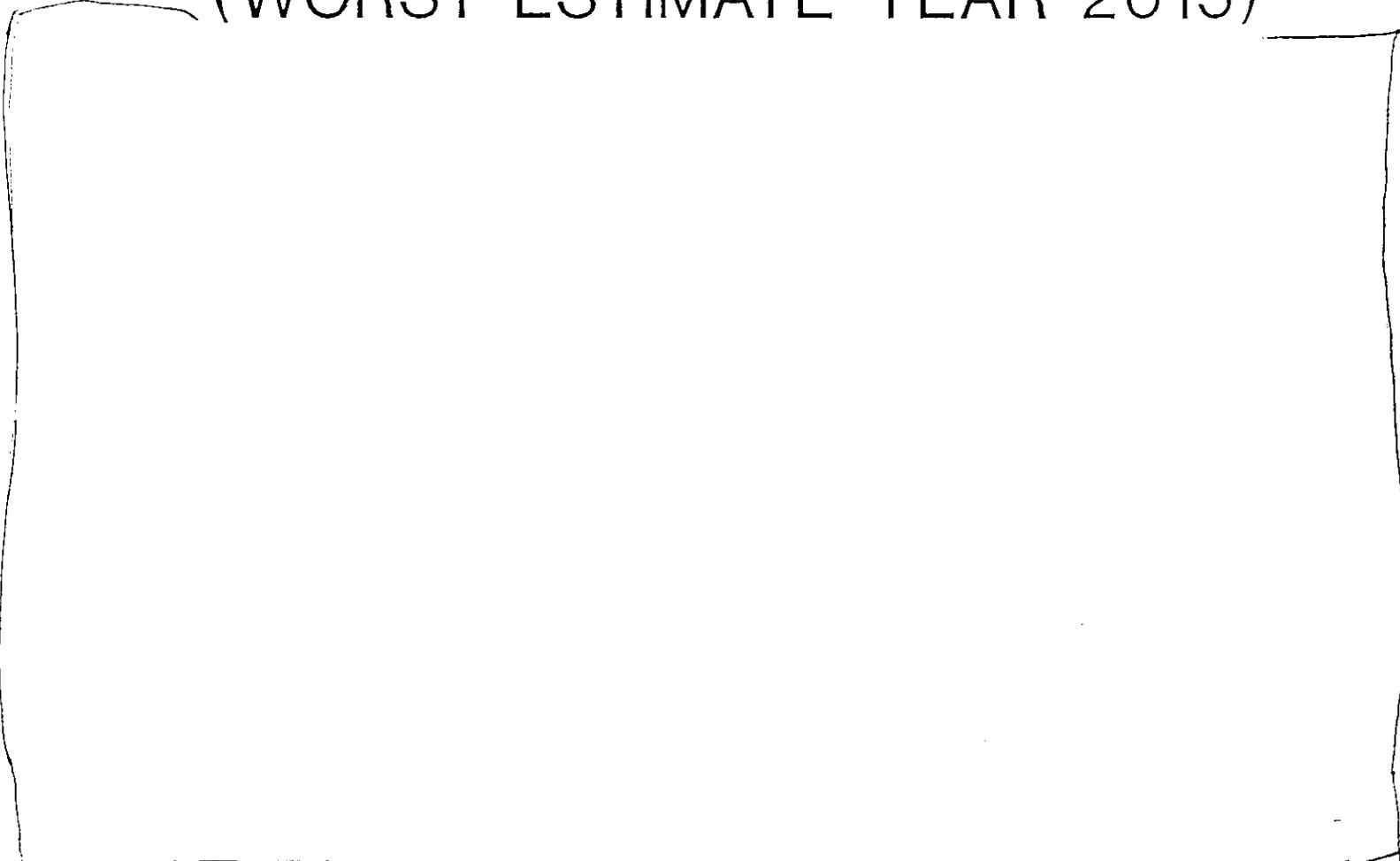
B1  
USSC

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# OTHER POWERS

(WORST ESTIMATE YEAR 2015)



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USSC

SOURCE: DIA REPORT TO SAG (SEP 90)  
CONSTRAINED BY NON-PROLIF TREATY

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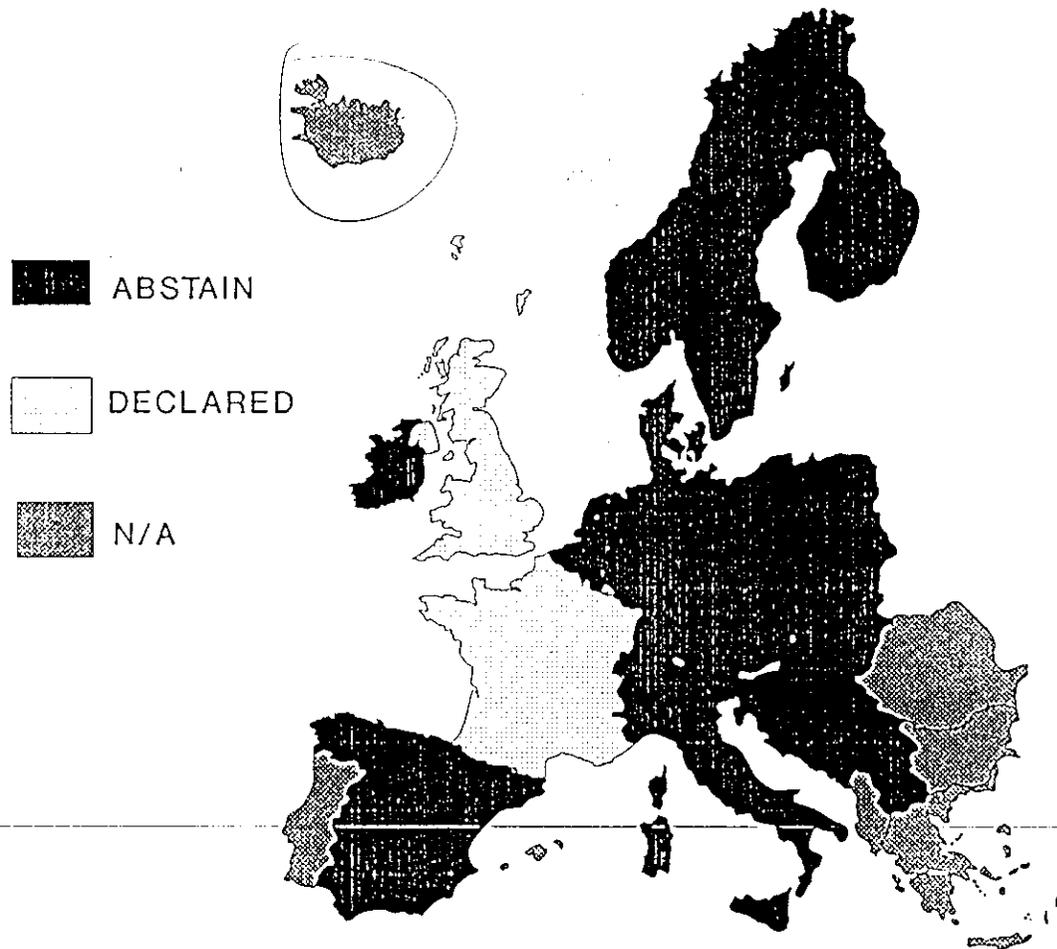
B1  
USSC

UNCLASSIFIED

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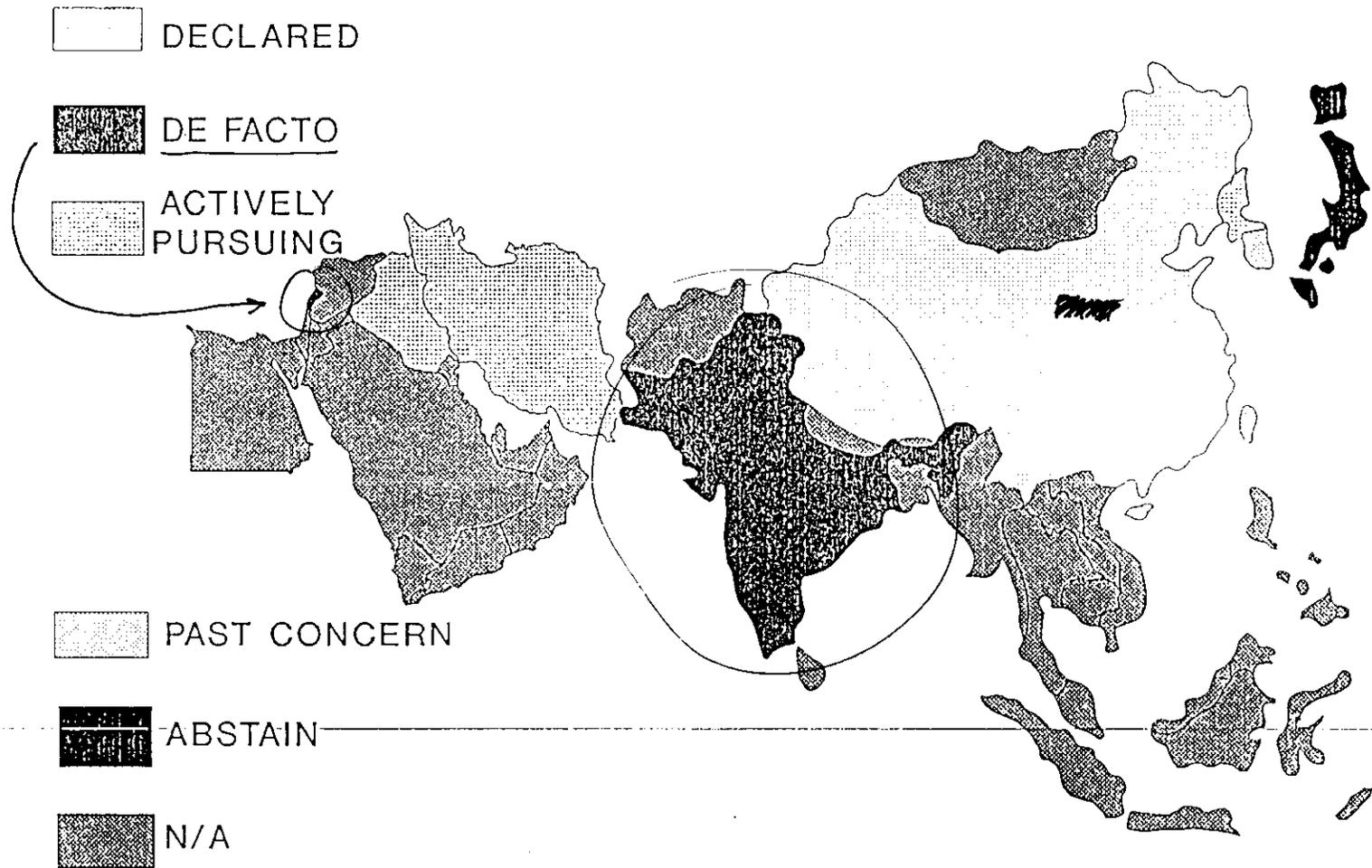
# EUROPEAN NUCLEAR CLUB



UNCLASSIFIED

UNCLASSIFIED

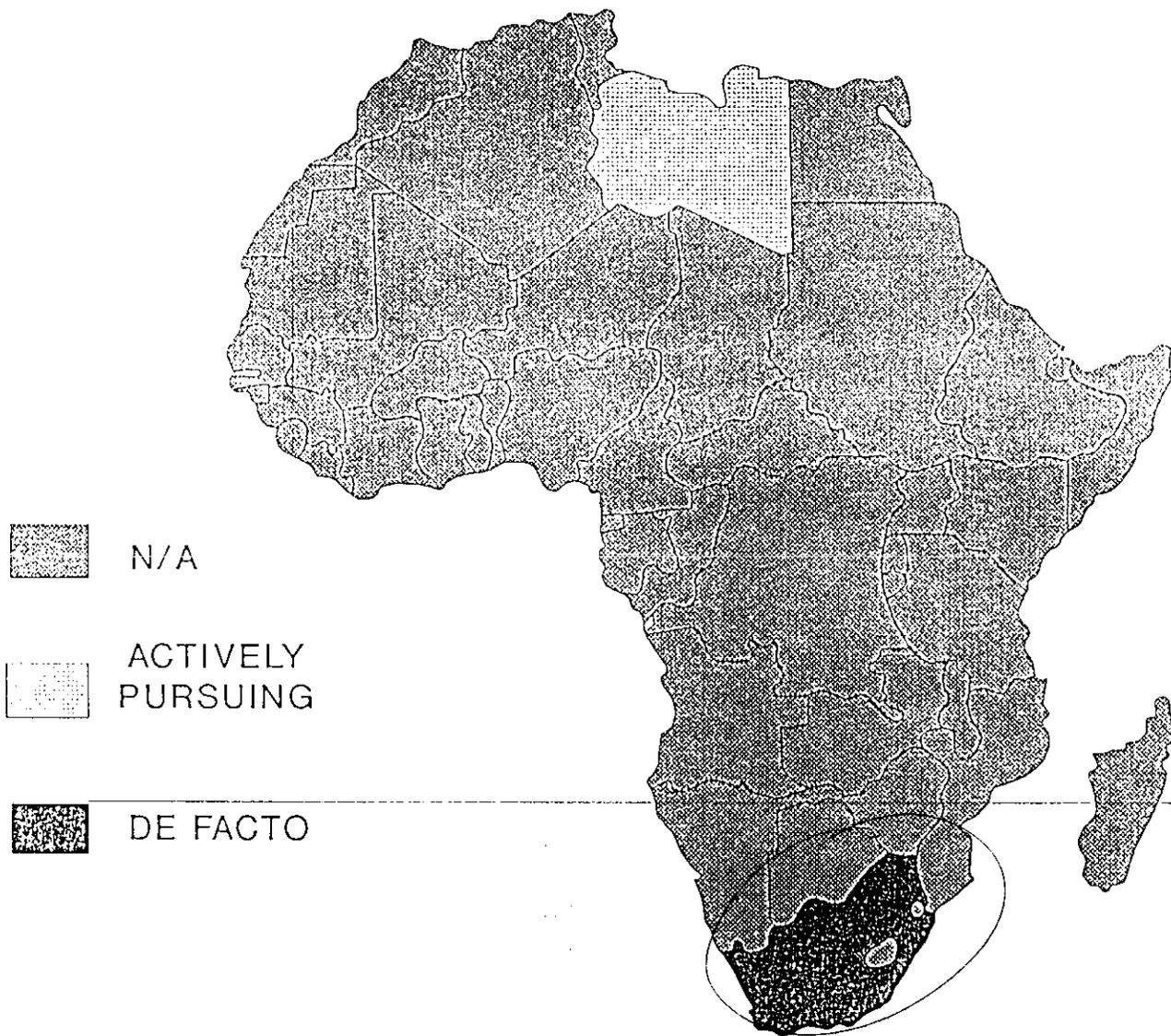
# MID EAST/ASIAN NUCLEAR CLUB



UNCLASSIFIED

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# AFRICAN NUCLEAR CLUB



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UNCLASSIFIED

WESTERN  
HEMISPHERE  
NUCLEAR  
CLUB

B1  
USSE

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UNCLASSIFIED

## OBJECTIVES

- NUCLEAR DETERRENCE
  - BASIC SIOP
  - RESERVE
  - ✓ •• HEDGING
  
- CONVENTIONAL WARFIGHTING
  - BASIC JSCP
  - BASING
  - SUSTAINABILITY
  
- ADDITIONAL CONSIDERATIONS
  - CRISIS STABILITY
  - ARMS RACE STABILITY
  - DISCOURAGE PROLIFERATION
  - AVOID ASYMMETRIC ADVANTAGE
  - RATIOS TO THIRD WORLD COUNTRIES

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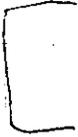
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# HEDGE

- NSDD-13



B1  
USSC

- NUWEP 91



B1  
USSC

- JSCP 91-92



B1  
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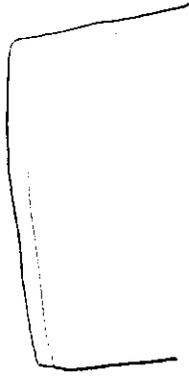
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# DEFINITIONS HEDGE ALTERNATIVES



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B5  
USSC

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~~HEDGE~~

B1  
B5  
USSC

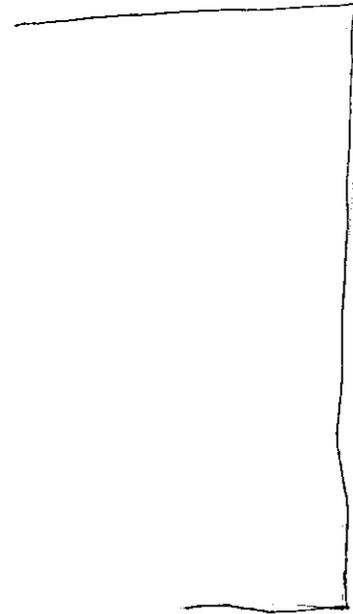
B1  
B5  
USSC

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# NUCLEAR DETERRENCE SUMMARY BOMBER FORCE SIZING ASSUMPTIONS



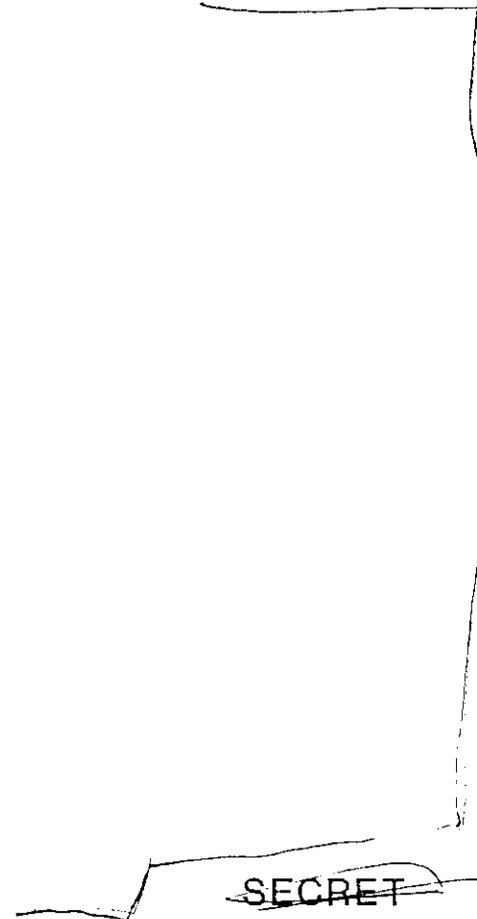
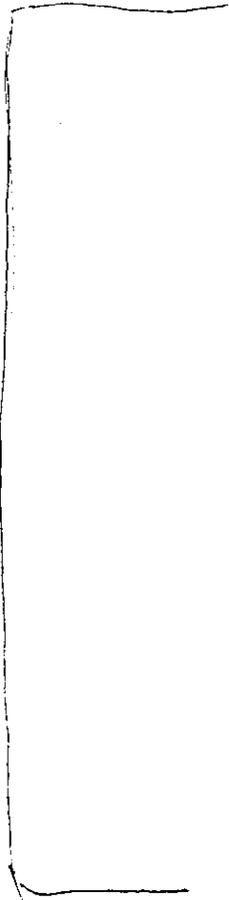
B1  
B5  
USSC

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# NUCLEAR DETERRENCE STRATEGY COMPARISON



B1  
B5  
USSC

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UNCLASSIFIED

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UNCLASSIFIED



# STRATEGY COMPARISON

Obtained Under the  
Freedom of Information Act  
by Hans M. Kristensen  
97-42h

B1  
B5  
USSC

WEAPON/DGZ RATIO  
B1, B5  
USSC

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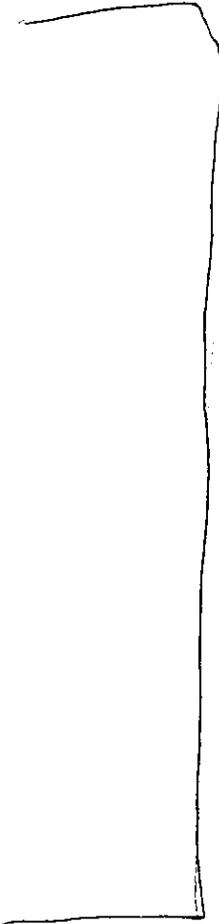
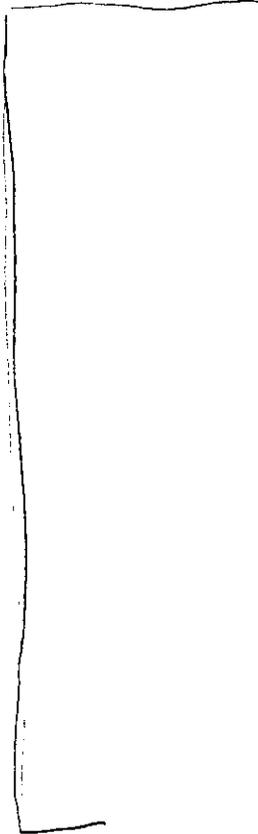
UNCLASSIFIED

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# STRATEGY COMPARISON



B1  
B5  
USSC

] WEAPON/DGZ RATIO  
B1, B5  
USSC

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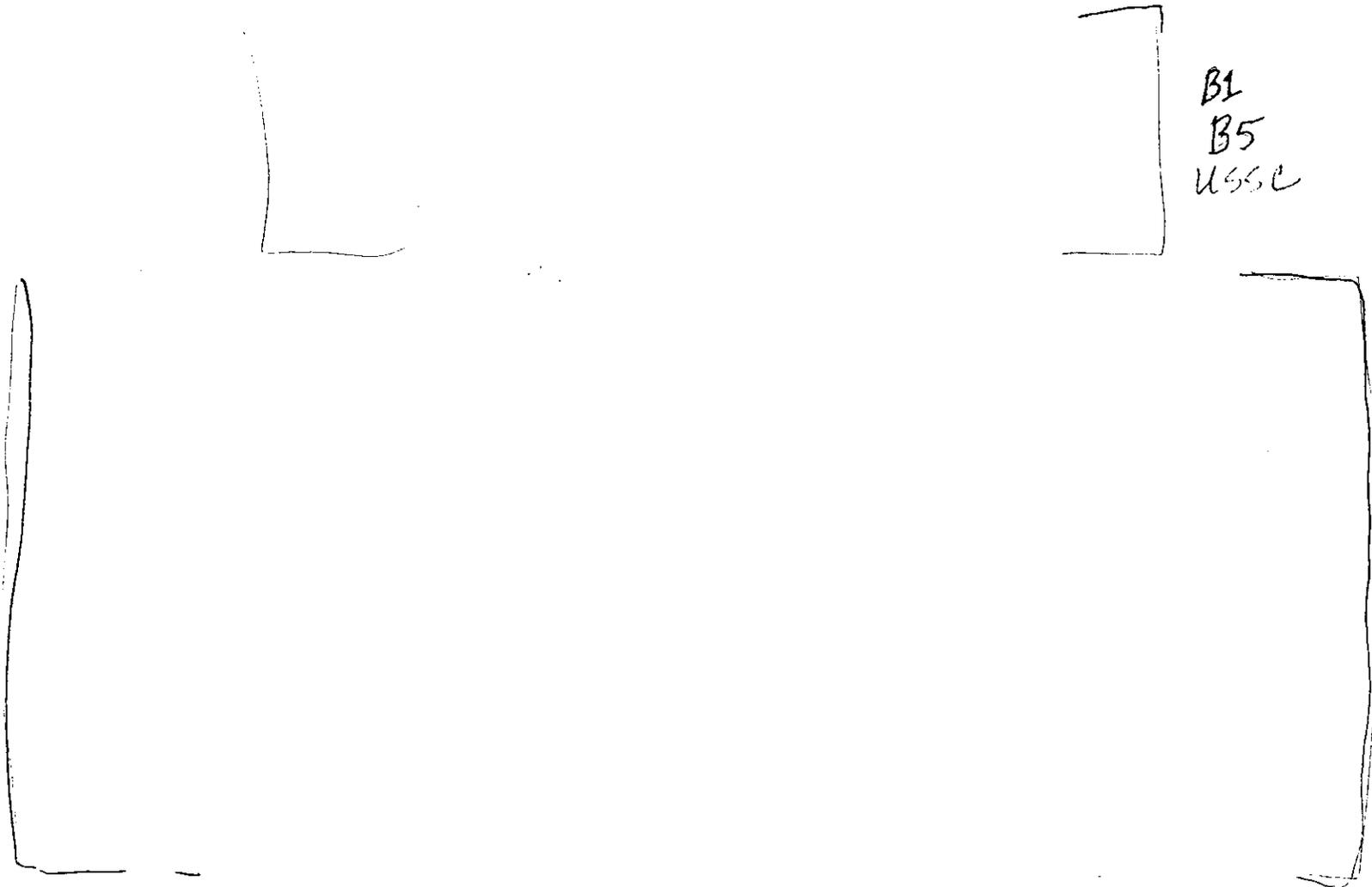
# WEAPON REQUIREMENTS

01  
B5  
USSC

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B1  
B5  
USSC

B1  
B5  
USSC

ICBM   
  SLBM   
  B-2 PEN   
  B-1 PEN   
  B52H S/O

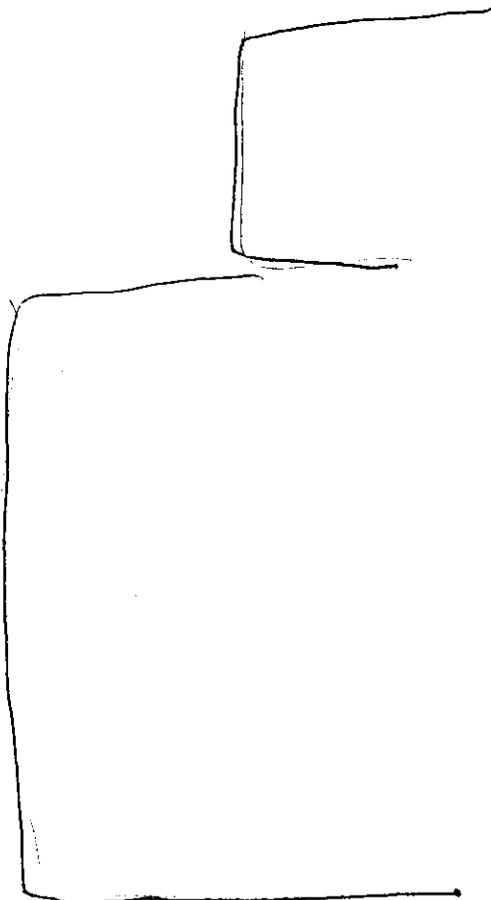


B1, B5  
USSC

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B1  
B5  
USSC

B1  
B5  
USSC

■ ICBM

▨ B-1 PEN

▧ SLBM

▩ B-1 S/O

▪ B-2 PEN

□ B52H S/O

[

] B1, B5  
USSC

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# BOMBER REQUIREMENTS SUMMARY



B1  
B5  
USSC

B1, B5  
USSC

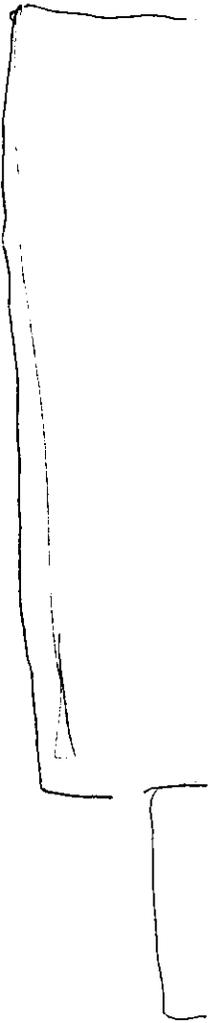
B1, B5  
USSC

B1, B5  
USSC

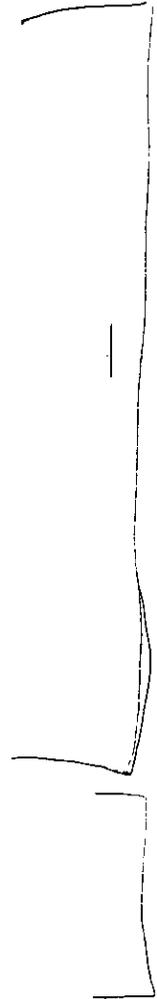
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UNCLASSIFIED

# FORCE STRUCTURE OPTIONS VS NEG REAL GROWTH



O&S, Milcon, RDT&E



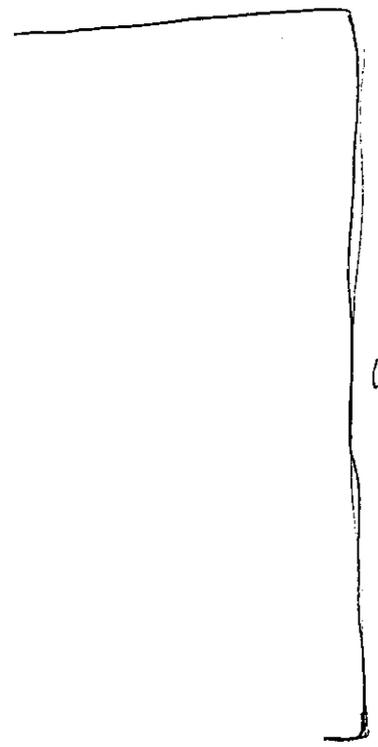
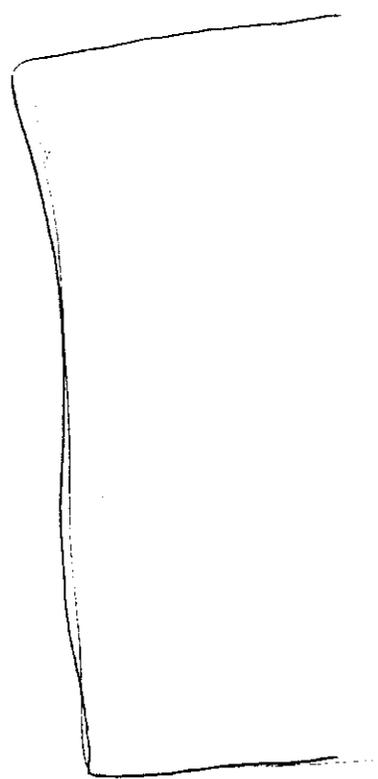
B1  
B5  
USSC

B1  
B5  
USSC

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# WHAT'S AFFORDABLE



B1  
B5  
USSC



B1  
B5  
USSC



-5%



-4%



-3%



PB

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# BOMBER REQUIREMENTS SUMMARY



B1  
B5  
USSC

B1, B5  
USSC

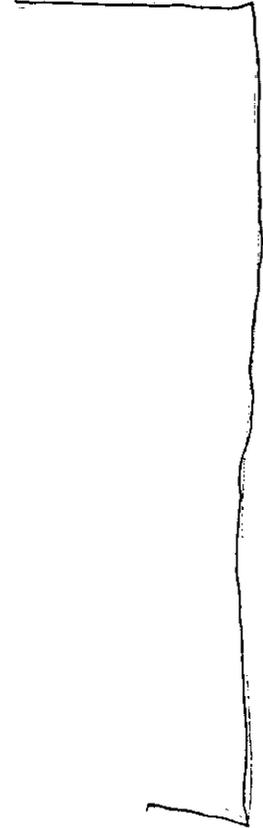
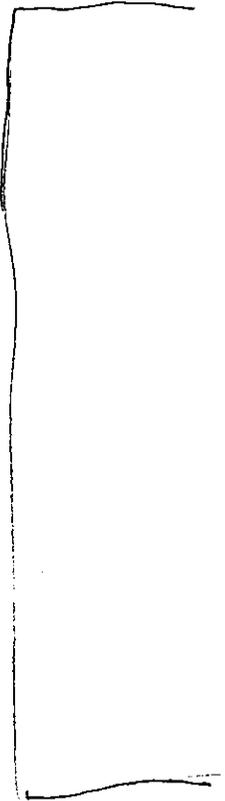
] B1, B5  
USSC

] B1  
B5  
USSC

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# WHAT'S AFFORDABLE



Obtained Under the  
Freedom of Information Act  
by Hans M. Kristensen  
97-42h

B1  
B5  
USSC



B1, B5  
USSC



-5%



-4%



-3%

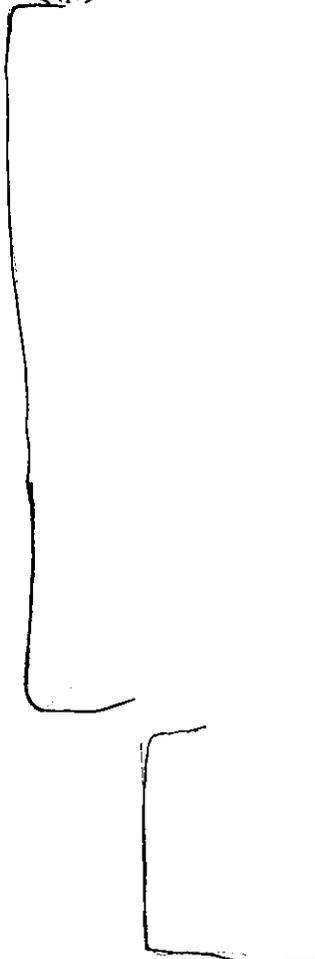


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B1, B5  
USSC



# FORCE STRUCTURE OPTIONS VS NEG REAL GROWTH



B1  
B5  
USSC



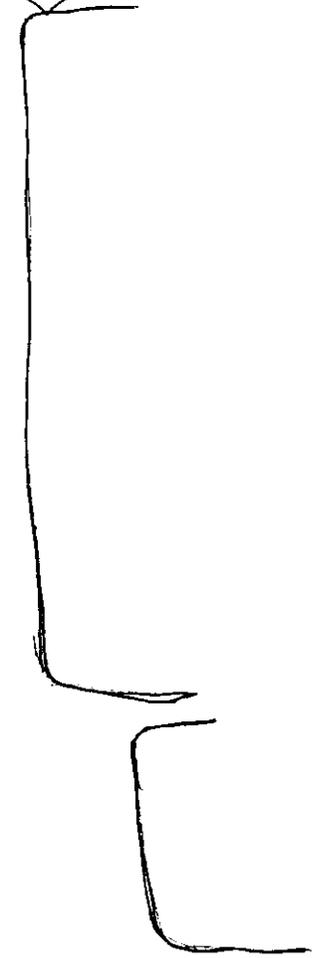
B1  
B5  
USSC

O&S, Milcon, RDT&E

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# FORCE STRUCTURE OPTIONS VS NEG REAL GROWTH



O&S, Milcon, RDT&E

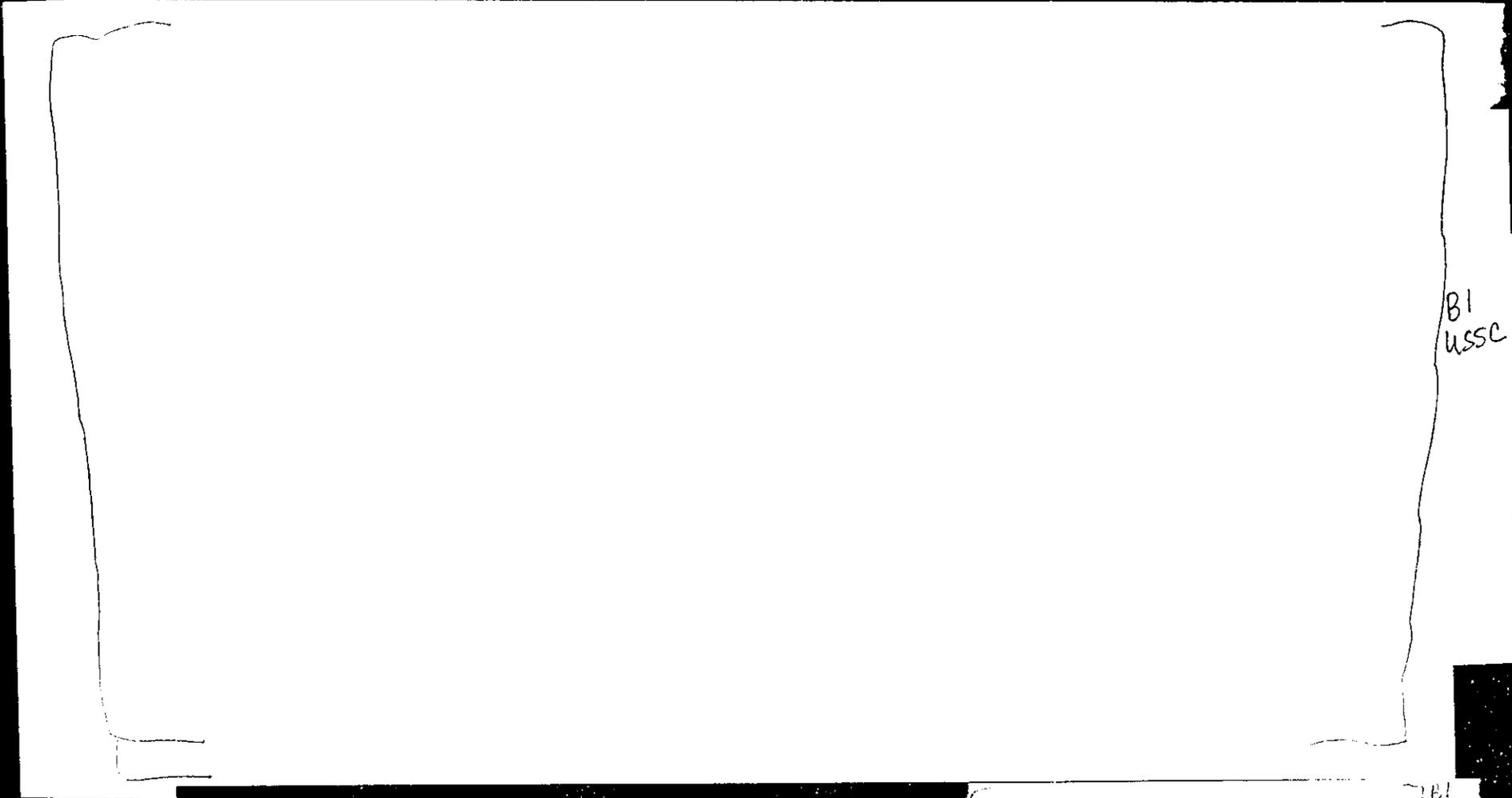


B1  
B5  
USC

B1  
B5  
USC



# OTHER POWERS (WORST ESTIMATE YEAR 2000)



BI  
USSC

BI  
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BI  
USSC

BI  
USSC

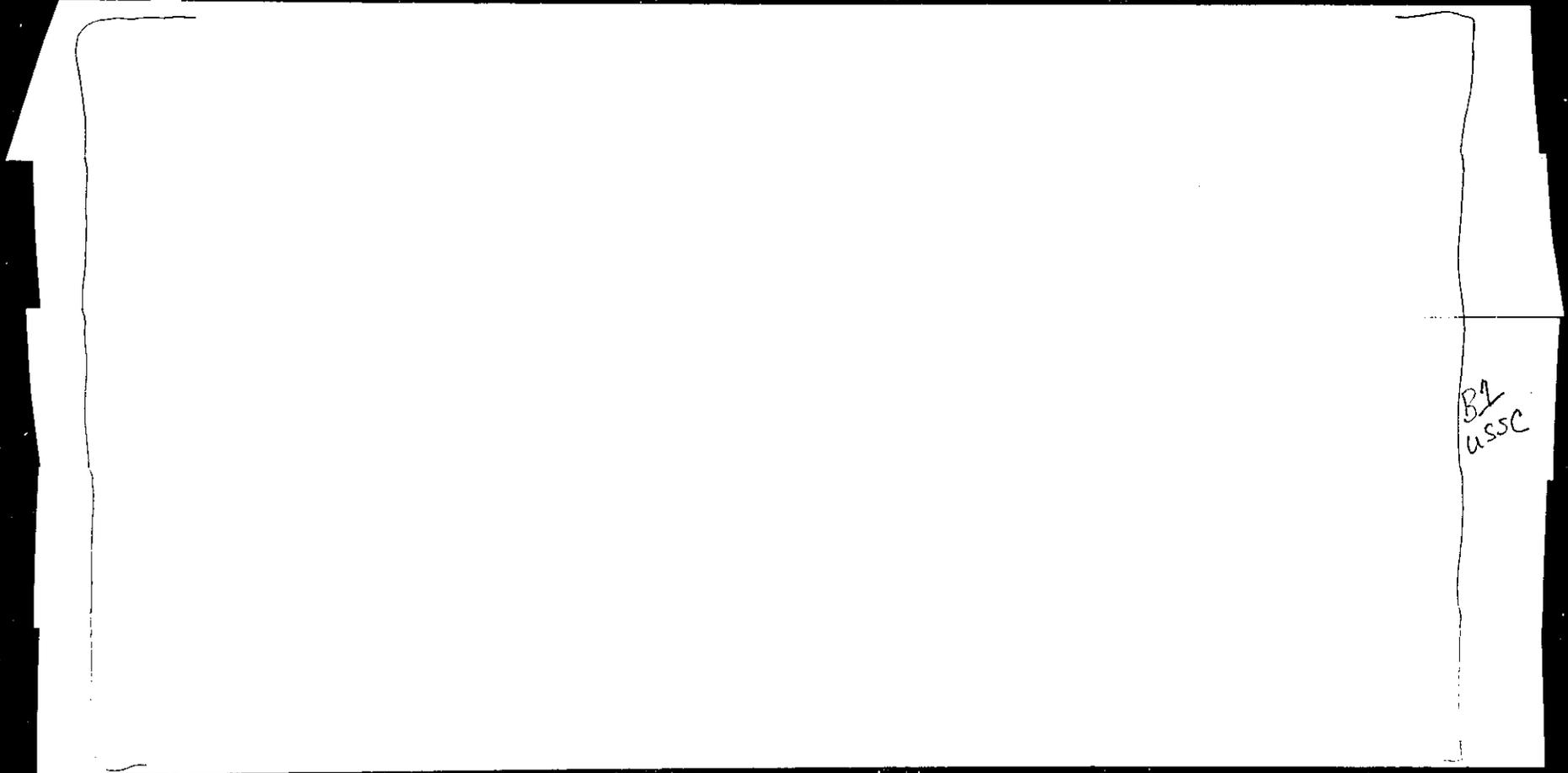
SOURCE: DIA REPORT TO SAG (SEP 90)  
UNCONSTRAINED BY NON-PROLIF TREATY

SECRET NOFORN WNI/TEL

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# CHINA'S NUCLEAR ARSENAL



B1  
USSC



B1  
USSC

SECRET NOFORN WINTEL

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*John P.*



# FORCE STRUCTURE REVIEW

OPR: HQ SAC/XPA  
24 AUG 1991

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# OBJECTIVE TO STRATEGIES

ALTERNATIVE

1

2

3

## NUCLEAR DETERRENCE

BASIC SIOP

RESERVE

HEDGE



B1  
B5  
USSC

## CONVENTIONAL WARFIGHTING

BASIC JSCP

BASING

SUSTAINABILITY



B1  
B5  
USSC

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## OBJECTIVES

- NUCLEAR DETERRENCE
  - BASIC SIOP
  - RESERVE
  - HEDGING
  
- CONVENTIONAL WARFIGHTING
  - BASIC JSCP
  - BASING
  - SUSTAINABILITY
  
- ADDITIONAL CONSIDERATIONS
  - CRISIS STABILITY
  - ARMS RACE STABILITY
  - DISCOURAGE PROLIFERATION
  - AVOID ASYMMETRIC ADVANTAGE
  - RATIOS TO THIRD WORLD COUNTRIES

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# OBJECTIVE TO STRATEGIES

ALTERNATIVE

1

2

3

## NUCLEAR DETERRENCE

BASIC SIOP  
RESERVE  
HEDGE

B1  
B-5  
USSC

## CONVENTIONAL WARFIGHTING

BASIC JSCP  
BASING  
SUSTAINABILITY

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B5  
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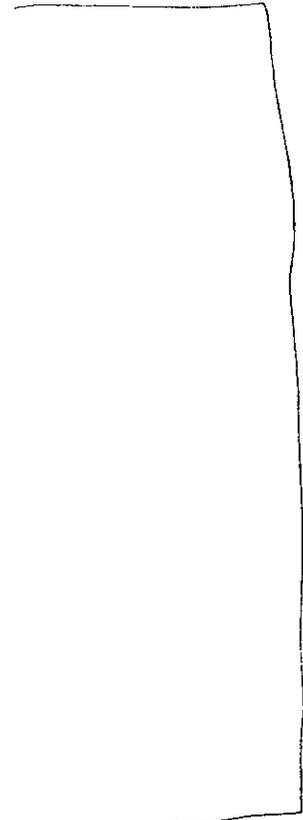
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# NATIONAL GUIDANCE CONVENTIONAL

- DEFENSE PLANNING GUIDANCE FY 1992-1997

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# NATIONAL GUIDANCE CONVENTIONAL

- DEFENSE PLANNING GUIDANCE FY 1992-1997

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USSC

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**UNCLASSIFIED**

## **OBJECTIVES**

- NUCLEAR DETERRENCE
  - BASIC SIOP
  - RESERVE
  - HEDGING
- ✓ • CONVENTIONAL WARFIGHTING
  - BASIC JSCP
  - BASING
  - SUSTAINABILITY
- ADDITIONAL CONSIDERATIONS
  - CRISIS STABILITY
  - ARMS RACE STABILITY
  - DISCOURAGE PROLIFERATION
  - AVOID ASYMMETRIC ADVANTAGE
  - RATIOS TO THIRD WORLD COUNTRIES

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# JSCP GUIDANCE CONVENTIONAL

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JSCP 93-95 CONCLUSION  
HOW IT IMPLEMENTS NATIONAL MILITARY STRATEGY



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MAJOR REGIONAL CONTINGENCY  
(MRC)

JSCP CY 93-95

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USSC

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~~SECRET~~

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# COMBATANT CINC SUPPORT JSCP CY 93-95

Obtained Under the  
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by Hans M. Kristensen  
97-424

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USCC

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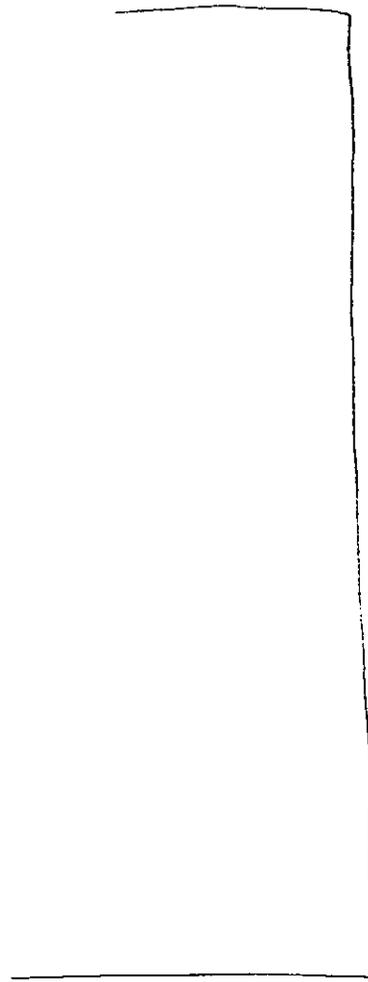
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# CONVENTIONAL WARFIGHTING

## JSCP ALLOCATION CY93-95



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**UNCLASSIFIED**

## **OBJECTIVES**

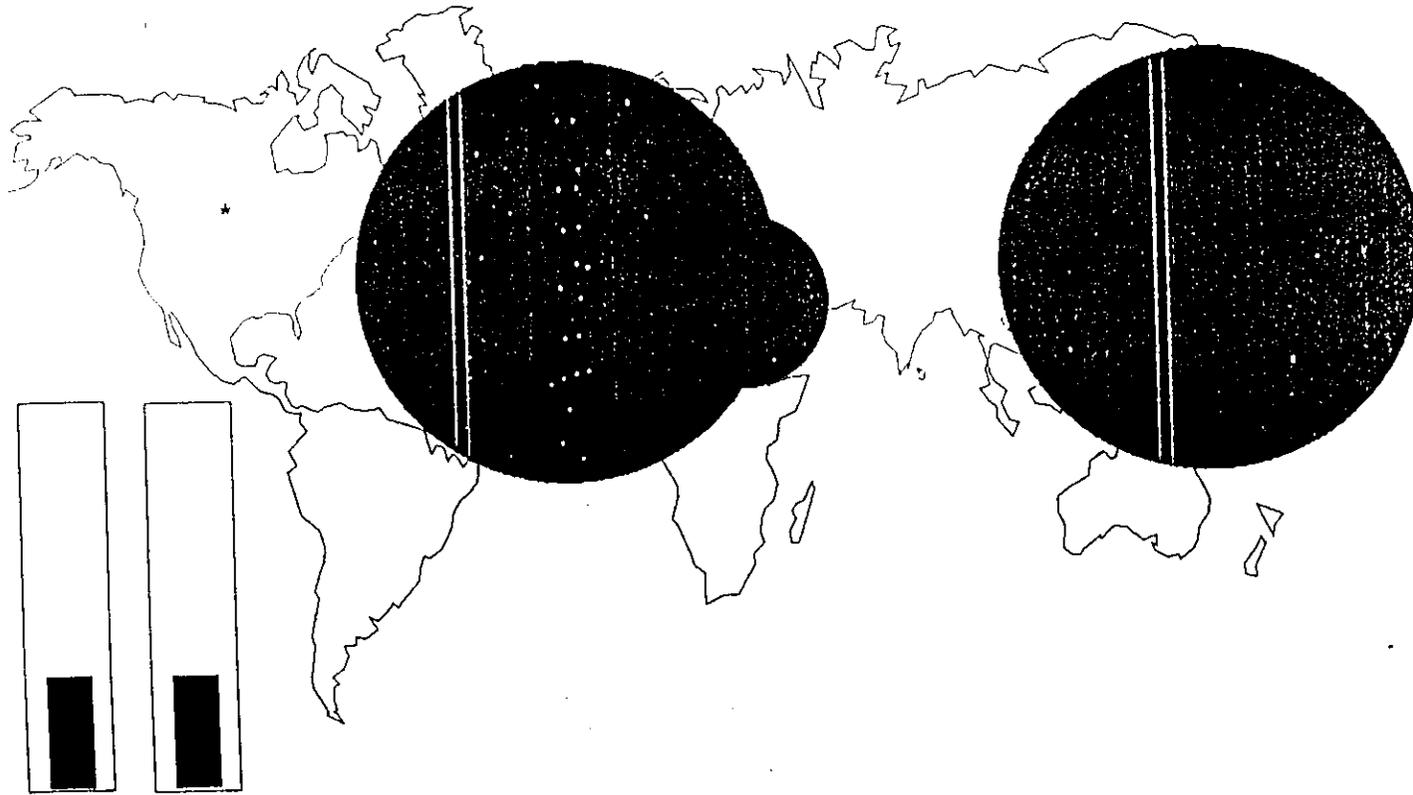
- NUCLEAR DETERRENCE
  - BASIC SIOP
  - RESERVE
  - HEDGING
  
- CONVENTIONAL WARFIGHTING
  - BASIC JSCP
  - BASING
  - SUSTAINABILITY
  
- ADDITIONAL CONSIDERATIONS
  - CRISIS STABILITY
  - ARMS RACE STABILITY
  - DISCOURAGE PROLIFERATION
  - AVOID ASYMMETRIC ADVANTAGE
  - RATIOS TO THIRD WORLD COUNTRIES

**UNCLASSIFIED**

UNCLASSIFIED



# CONVENTIONAL WARFIGHTING BASING

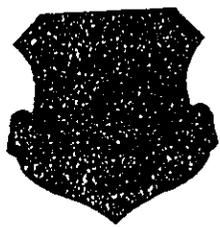


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# Basing Tradeoffs

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## CONVENTIONAL WARFIGHTING BASING REQUIREMENTS

- CONUS
  - BASE LEVEL SUPPLY SYSTEM
  - MUNITIONS
- REGION
  - WAR RESERVE SPARE KIT
  - INTERMEDIATE LEVEL MAINTENANCE
  - PRE-POSITIONED MUNITIONS
- THEATER
  - WAR RESERVE SPARE KIT
  - AIRLIFT OF MUNITIONS/FUELS
  - INTERMEDIATE LEVEL MAINTENANCE

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## CONVENTIONAL WARFIGHTING BASING COST DRIVERS

- NUMBER OF CONUS BASES
- NUMBER OF REGIONAL MOBs
  - CARETAKER FORCE
  - ILMs
  - AIRCRAFT TYPES SUPPORTED BY ILMs
  - PREPOSITION MUNITIONS
- NUMBER OF FORWARD OPERATING LOCATIONS
  - AIRLIFT OF PERSONNEL AND SUPPORT EQUIPMENT
  - AIRLIFT MUNITIONS
- HOW MUCH REDUNDANCY IS NEEDED
  - COVER POTENTIAL CONFLICT AREAS
  - RESPOND IN TIME
  - SUSTAIN OPERATIONS

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## **OBJECTIVES**

- NUCLEAR DETERRENCE
  - BASIC SIOP
  - RESERVE
  - HEDGING
- CONVENTIONAL WARFIGHTING
  - BASIC JSCP
  - BASING
  - ✓ •• SUSTAINABILITY
- ADDITIONAL CONSIDERATIONS
  - CRISIS STABILITY
  - ARMS RACE STABILITY
  - DISCOURAGE PROLIFERATION
  - AVOID ASYMMETRIC ADVANTAGE
  - RATIOS TO THIRD WORLD COUNTRIES

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## CONVENTIONAL WARFIGHTING SUSTAINABILITY

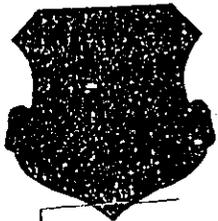
- DURATION OF AIR CAMPAIGN
  - CRITICAL TARGETS (2-5 DAYS)
  - LESS CRITICAL (20-40 DAYS)
- INTENSITY OF AIR CAMPAIGN
  - NUMBER OF TARGETS
  - LEVEL OF DAMAGE PER TARGET

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# Sorties Available Per 100 PAA

No Attrition

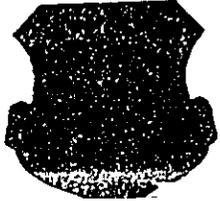


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Sorties Available Per 100 PAA  
2% Attrition



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USSC

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## CONVENTIONAL WARFIGHTING TARGET BASE

- HIGH PAYOFF FIRST HOURS
  - COMMAND AND CONTROL
  - EW/GCI
  - SEAD
  - TRANSPORTATION NETWORK (LOC)
  - POWER GRID NETWORK
  - AIRFIELDS
- LESSER PAYOFF IN FIRST HOURS
  - INDUSTRY
  - GROUND FORCES

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# AIR TARGET COMPLEXES (FIXED)



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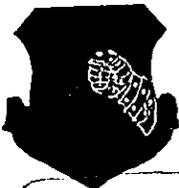
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AIR TARGET COMPLEXES  
(CRITICAL)



B-1  
USSC

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# AIR TARGET COMPLEXES (LESS CRITICAL)

Obtained Under the  
Freedom of Information Act  
by Hans M. Kristensen  
97-42h

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# SORTIES REQUIRED PER TARGET COMPLEX

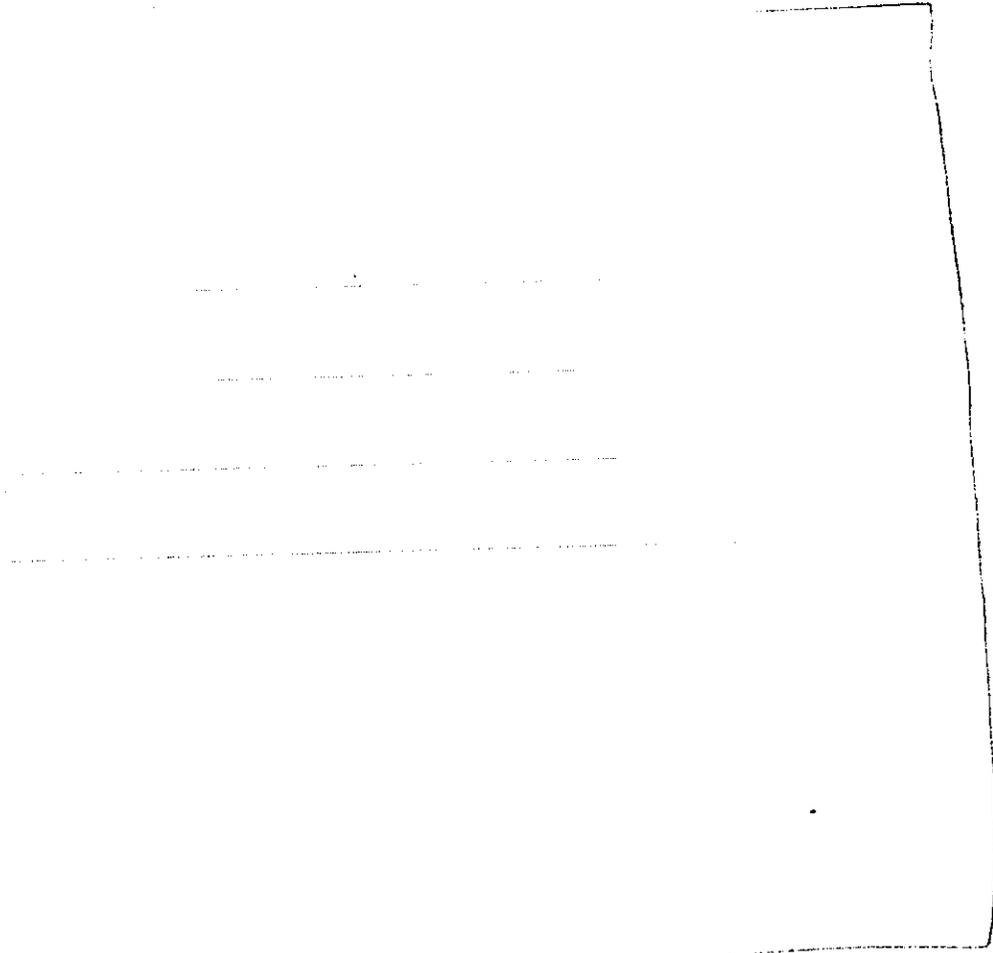
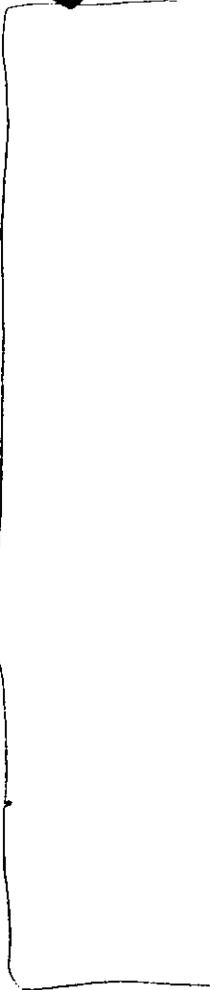
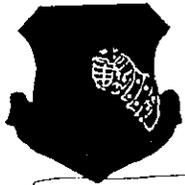


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USSC

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• AREA AND POINT TARGET MIX

# KOREA EXAMPLE BOMBERS NEEDED



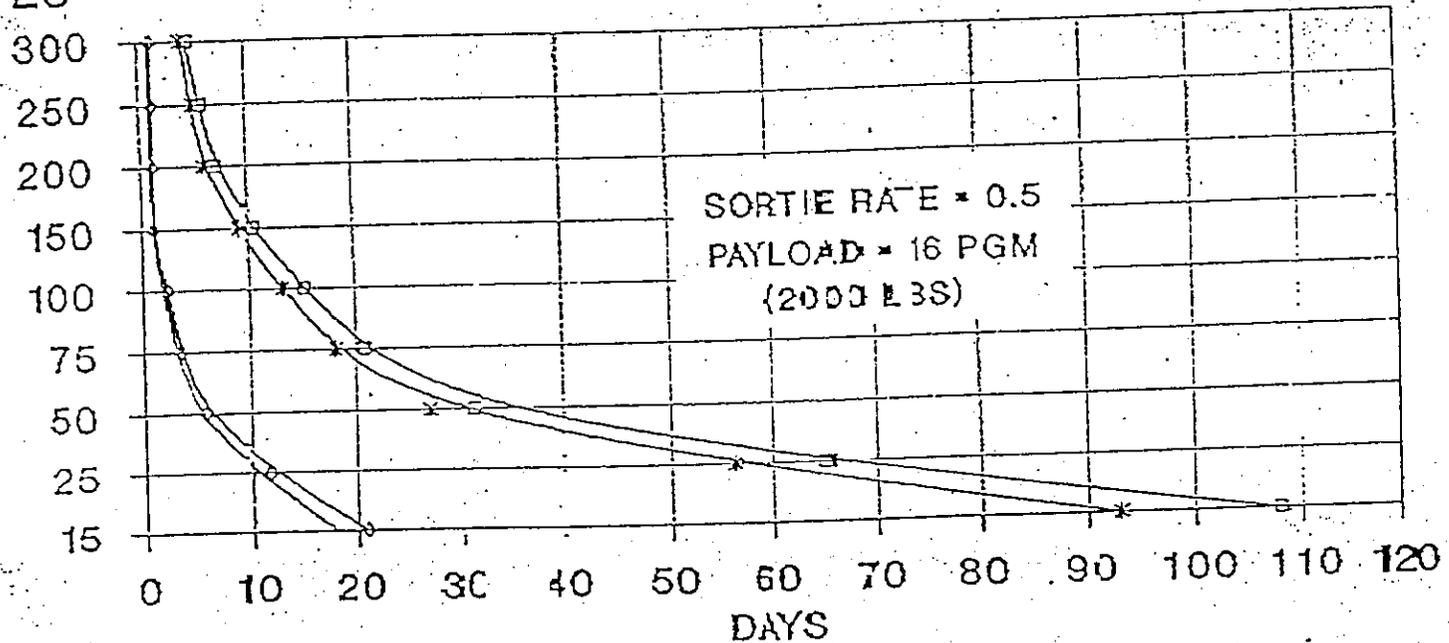
*B1  
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# TIME REQUIRED TO STRIKE STRATEGIC TARGET SET

SCENARIO 2

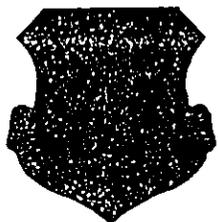
# B-2s



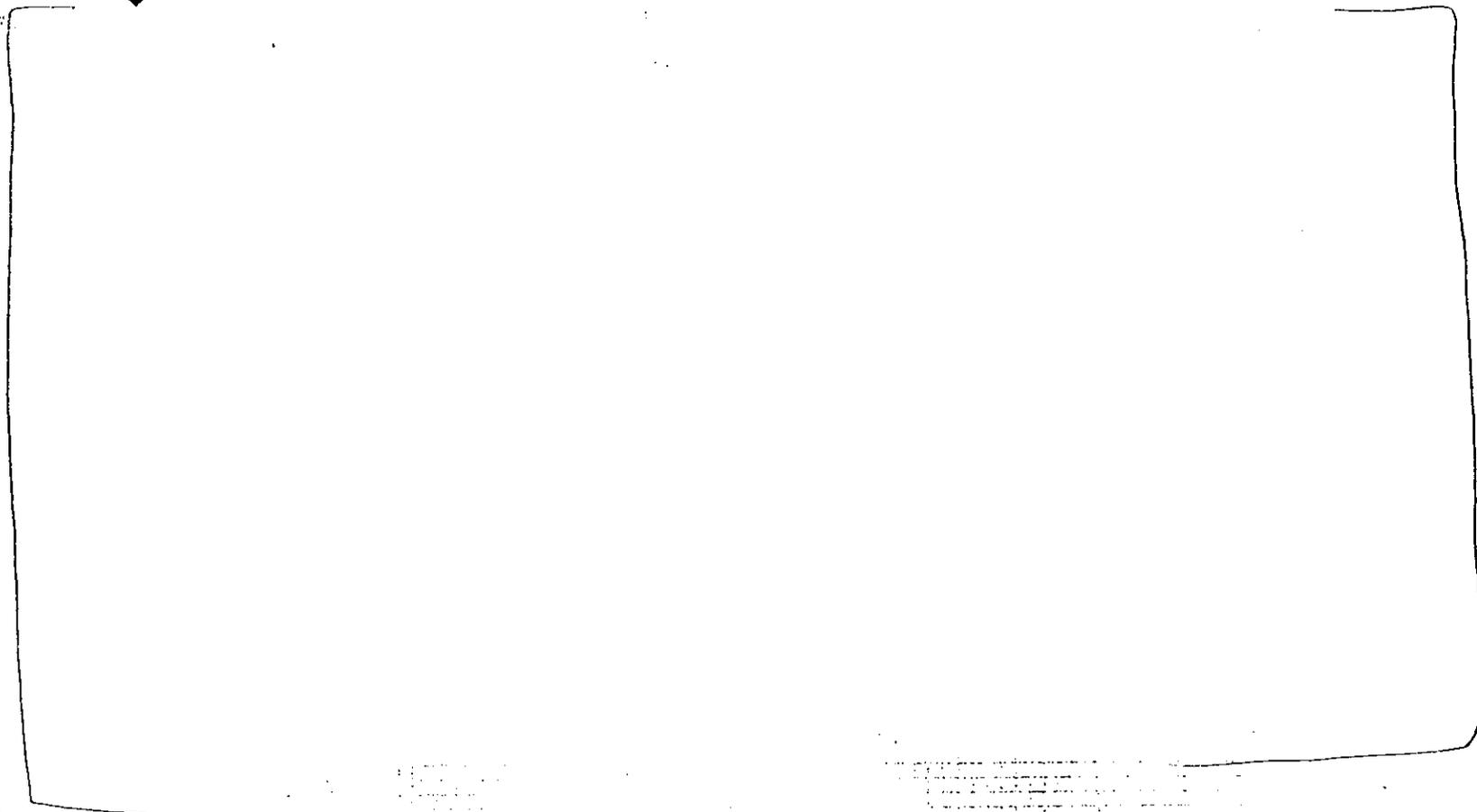
SORTIE RATE = 0.5  
 PAYLOAD = 16 PGM  
 (2000 LBS)

- (192) CRITICAL TGTS
- \* (584) TOTAL TGTS
- x CRITICAL TGTS [WX]
- TOTAL TGTS [WX]

SOURCE: AF/XOX



# Conventional Warfighting Options

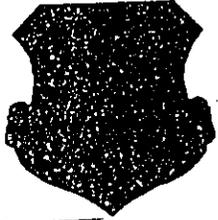


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# DESERT STORM



BI  
USSC.

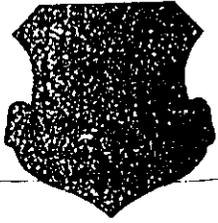
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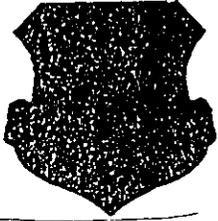
# Air Power Wheel

Area Targets

B1  
USSC

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# Air Power Wheel

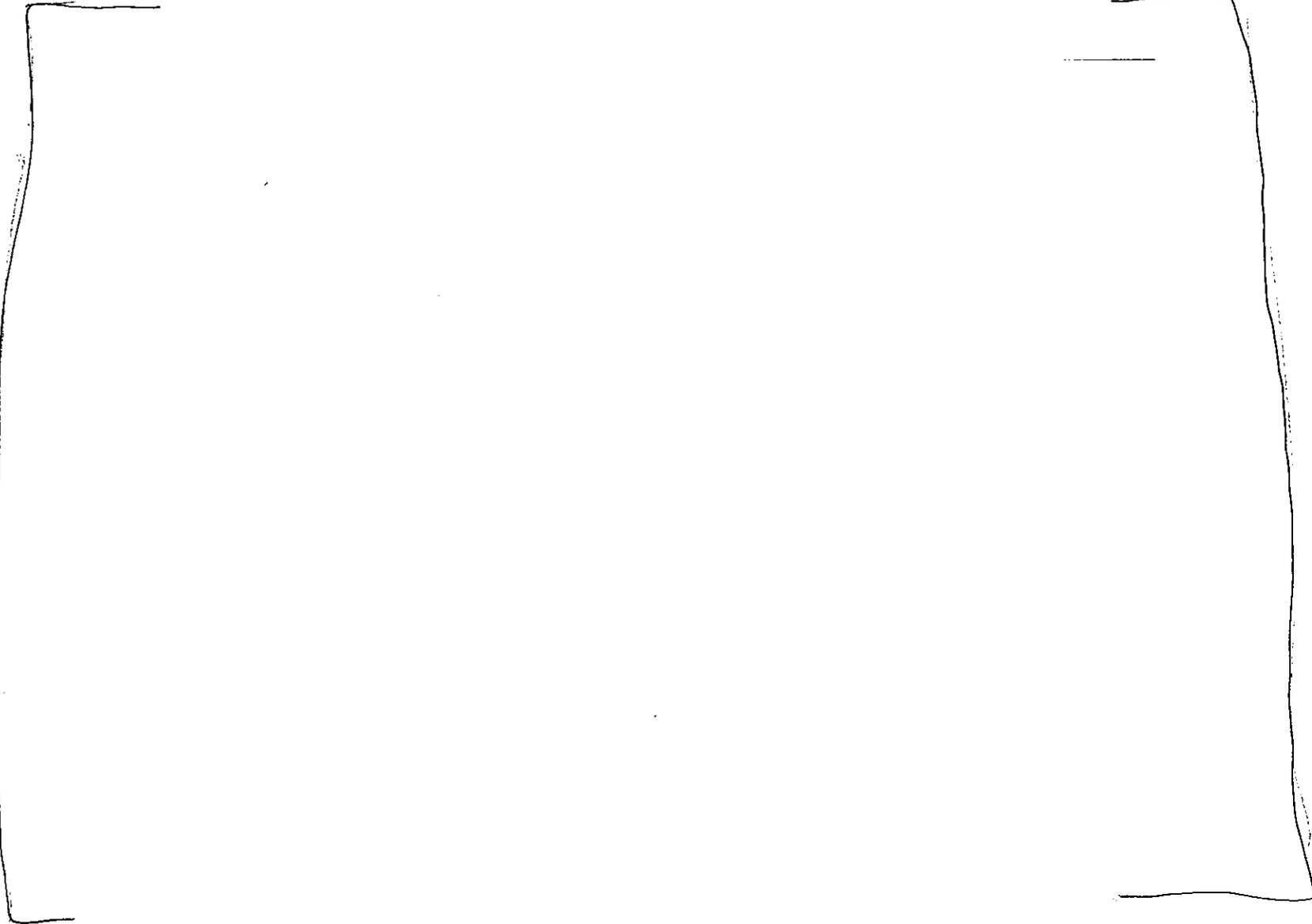
Point Targets

B1  
USSC

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] B1  
USSC

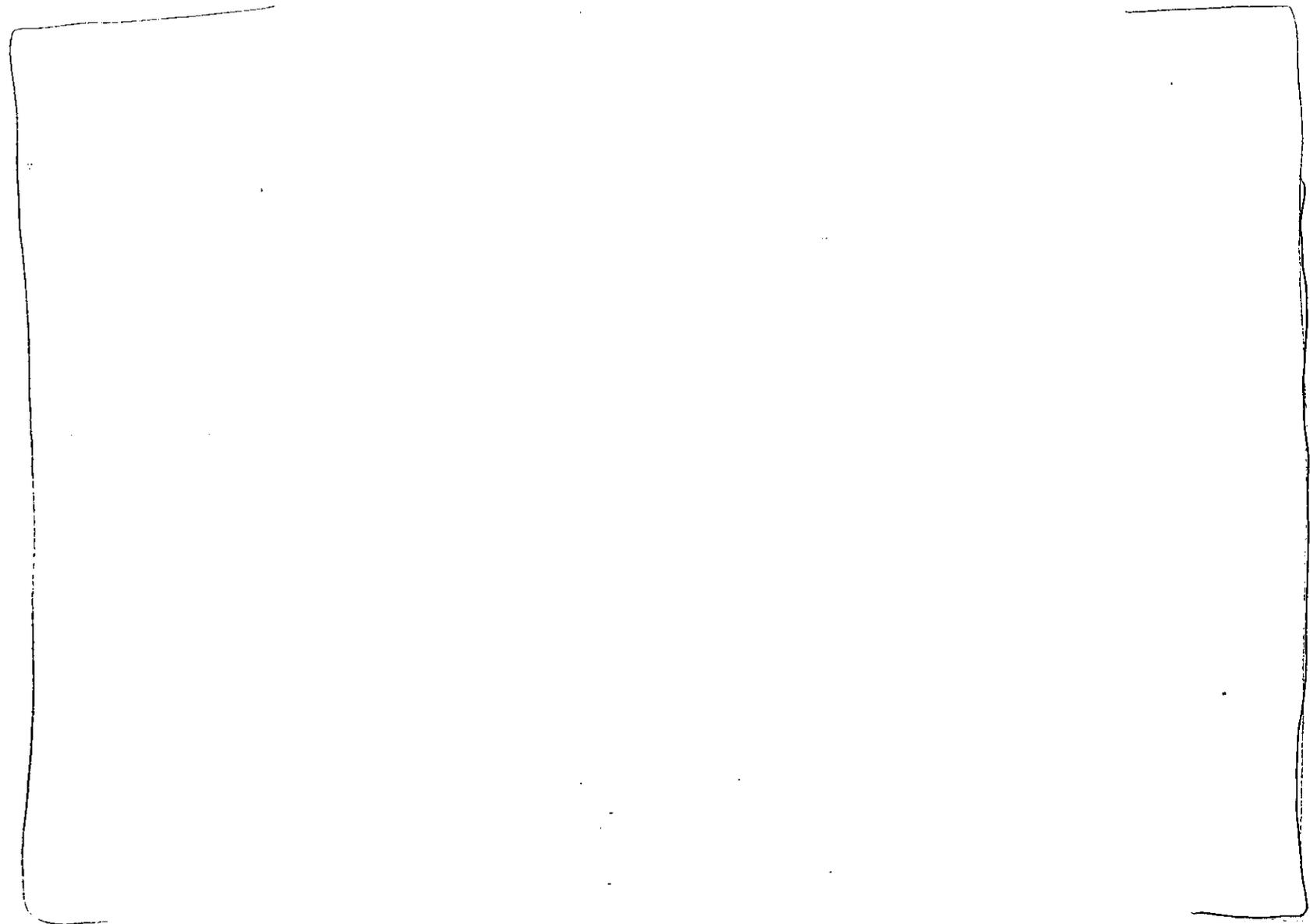


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USSC

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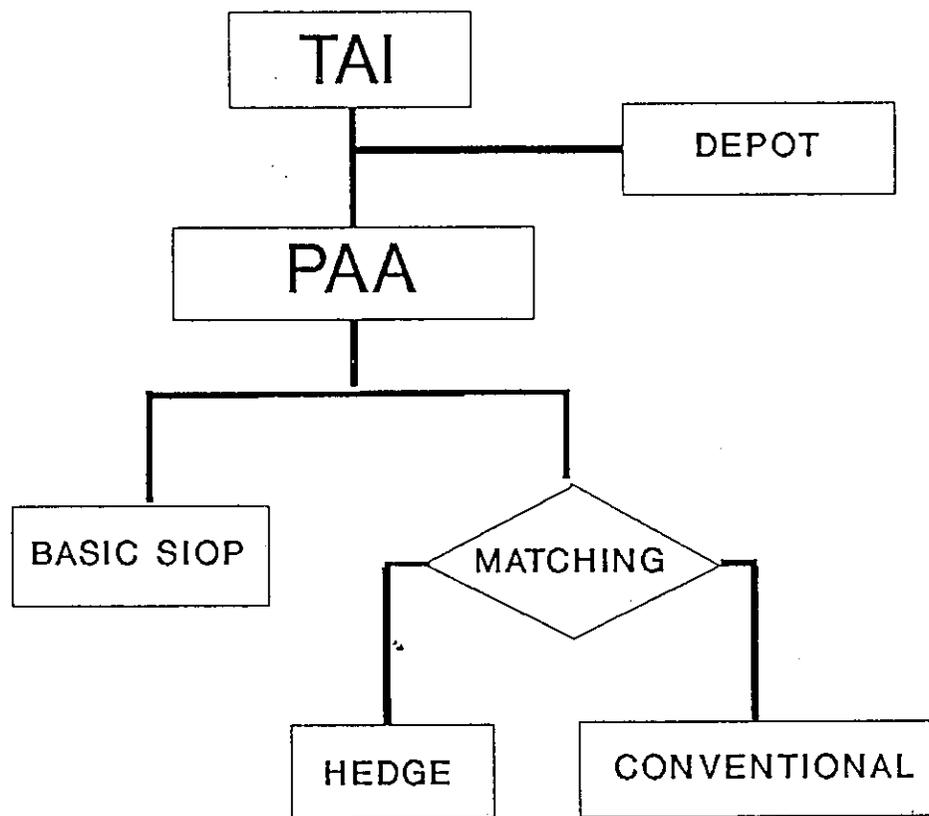
# Bombers Required to Destroy 100 Targets



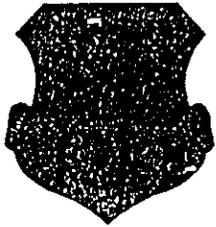
B1  
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# MATCHING STRATEGIES



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# Bomber Requirements Summary

[

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B1  
B5  
USSC

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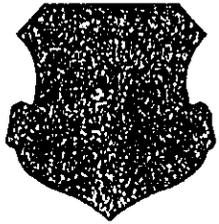
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# BOMBER REQUIREMENTS SUMMARY

Obtained Under the  
Freedom of Information Act  
by Hans M. Kristensen  
97-426

B1  
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# Bomber Requirements Summary

[

] B1, B5  
USSC

B1  
B5  
USSC

# BOMBER REQUIREMENTS SUMMARY



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# FORCE STRUCTURE REVIEW

OPR: HQ SAC/XPA  
28 AUG 1991

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## OBJECTIVES

- NUCLEAR DETERRENCE
  - BASIC SIOP
  - RESERVE
  - HEDGING
  
- CONVENTIONAL WARFIGHTING
  - BASIC JSCP
  - BASING
  - SUSTAINABILITY
  
- ADDITIONAL CONSIDERATIONS
  - CRISIS STABILITY
  - ARMS RACE STABILITY
  - DISCOURAGE PROLIFERATION
  - AVOID ASYMMETRIC ADVANTAGE
  - RATIOS TO THIRD WORLD COUNTRIES

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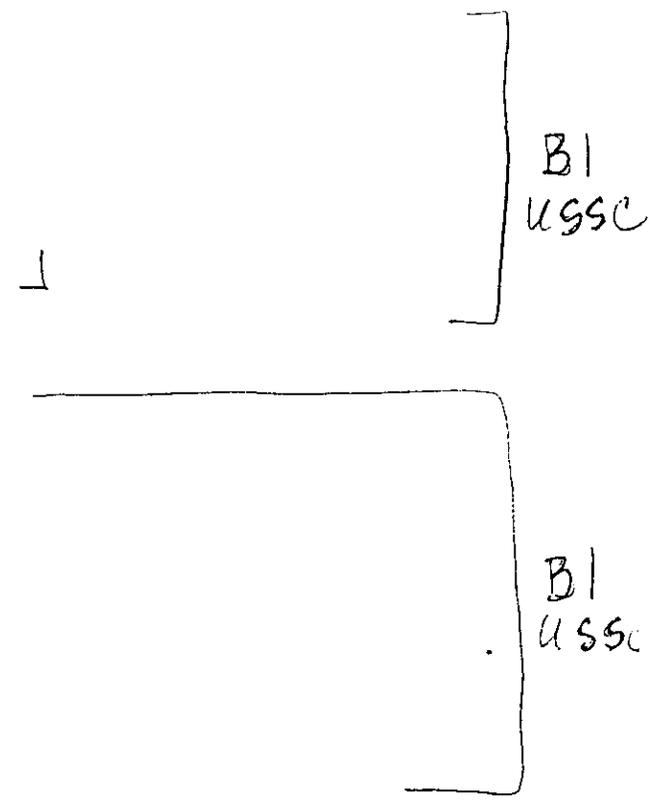
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# GUIDANCE

- NSDD-13

- NUWEP 91



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## STABILITY GUIDANCE

- NATIONAL SECURITY STRATEGY OF THE UNITED STATES  
AUGUST 1991
  - IMPROVE STABILITY BY:
    - PURSUING EQUITABLE AND VERIFIABLE ARMS CONTROL AGREEMENTS
    - MODERNIZE OUR STRATEGIC DETERRENT
    - REDUCING MILITARY CAPABILITIES THAT COULD PROVIDE INCENTIVE TO ATTACK

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## OBJECTIVES

- NUCLEAR DETERRENCE
  - BASIC SIOP
  - RESERVE
  - HEDGING
- CONVENTIONAL WARFIGHTING
  - BASIC JSCP
  - BASING
  - SUSTAINABILITY
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  - ARMS RACE STABILITY
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  - AVOID ASYMMETRIC ADVANTAGE
  - RATIOS TO THIRD WORLD COUNTRIES

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## CRISIS STABILITY GUIDANCE

- JCSP ANNEX C, FY 89-90
  - US MUST NOT BE UNDER PRESSURE TO EMPLOY VULNERABLE FORCES
  - SOVIETS MUST NOT BE PROVIDED ANY INCENTIVE TO INITIATE A NUCLEAR ATTACK
  - REQUIRES THAT THE US:
    - REDUCE THE VULNERABILITIES IN ITS FORCES
    - REDUCE THE VULNERABILITIES IN ITS C3I SYSTEMS
    - IMPROVE ABILITY TO OBTAIN AND REACT TO WARNING
    - IMPROVE ABILITY TO DETECT AND ASSESS A SOVIET ATTACK
- JCSP ANNEX C, FY 91-92
  - CRISIS STABILITY REQUIRES THAT NO NUCLEAR POWER IS UNDER PRESSURE TO INITIATE NUCLEAR WAR TO PROTECT VULNERABLE FORCES

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## CRISIS STABILITY

- REDUCE THE PROBABILITY OF NUCLEAR WAR IN A CRISIS SITUATION
  - GOAL: REDUCE "PERCEIVED" ADVANTAGE IN STRIKING FIRST
- STABILIZING ACTIONS
  - MAKE FORCES MORE SURVIVABLE
  - REDUCE FIRST STRIKE "COUNTER FORCE" CAPABILITY
- DESTABILIZING ACTIONS
  - INCREASE COUNTERFORCE CAPABILITY
  - DEPLOY FORCES IN LESS SURVIVABLE MODES

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## CRISIS STABILITY MEASURE OF EFFECTIVENESS

- ICBM RVS/(SILOS OR HARD TARGETS)
  - MEASURES CAPABILITY OF FIRST STRIKE
  - IGNORES SLBMS AND ACFT
  - CHANGES IN RATIO DO NOT NECESSARILY EQUATE TO CHANGES IN STABILITY
- % FORCE SURVIVABLE (MORE SURVIVABLE - LESS INCENTIVE)
  - MEASURES SENSITIVITY TO:
    - GENERATION RATES
    - ALERT RATES
    - ASW BREAKTHROUGH
    - PROMPT RETALIATORY LAUNCH
    - RACE TO GENERATION
    - MOBILITY
    - STRATEGIC DEFENSE
  - CAN BE PRESENTED USING
    - DE
    - NUMBER SURVIVING
    - NUMBER SURVIVING/DGZ

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# CRISIS STABILITY ICBM RATIOS



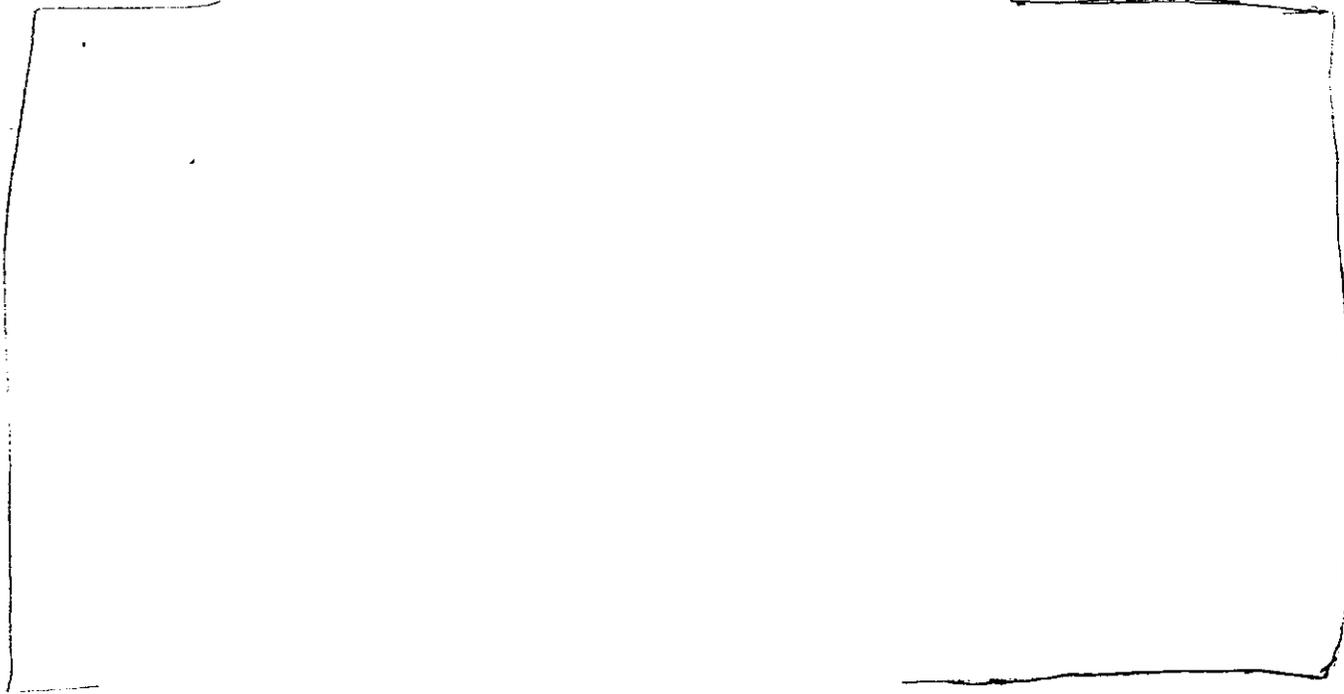
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WPNS INCLUDE MMIII + PKPR

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# DAMAGE ACHIEVED GENERATED



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USSC

## US SURVIVING FORCE

-  ACFT
-  IC,ACFT
-  SL,ACFT
-  IC,SL,ACFT

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# SURVIVING WPNS GENERATED.



B1  
USSC

SURVIVING US FORCE

■ ACFT    ▨ IC,ACFT    ▩ SL,ACFT    ▧ IC,SL,ACFT

DOES NOT INCLUDE SRF

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# SOVIET SURVIVING WPNS GENERATED



31  
USSC

SURV. SOVIET FORCE

■ ACFT    ▨ SL,ACFT    ▩ IC,ACFT    ▧ IC,SL,ACFT

SOVIET NIE11 - 3/8/91 START FORCE  
DGZ ARE FUTURE PROJ FROM BTB 6G DATABASE

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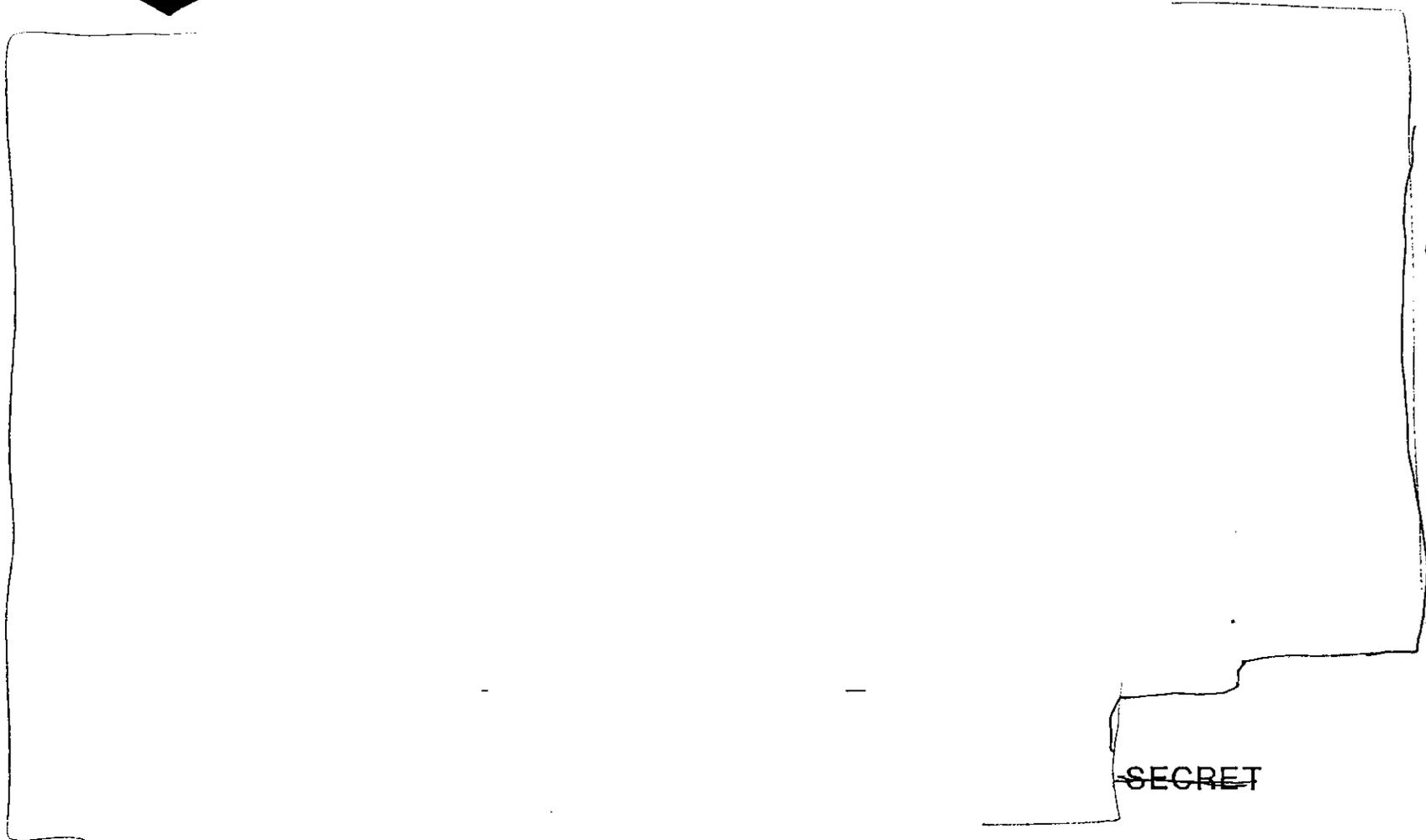
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# CRISIS STABILITY SURVIVING WEAPONS (GEN)



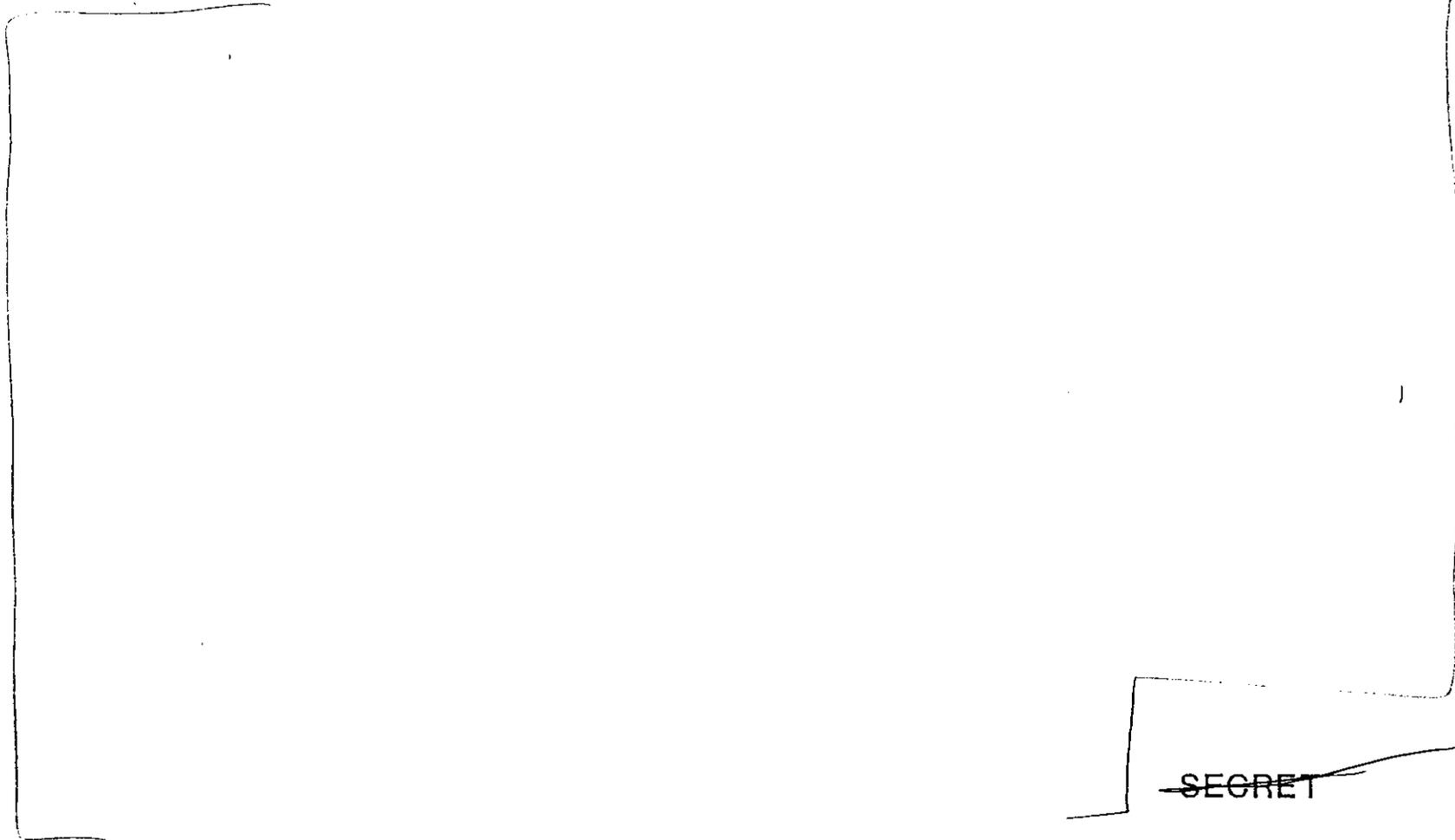
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# CRISIS STABILITY SURVIVING WEAPONS (GEN)



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# CRISIS STABILITY SURVIVING WEAPONS (GEN)



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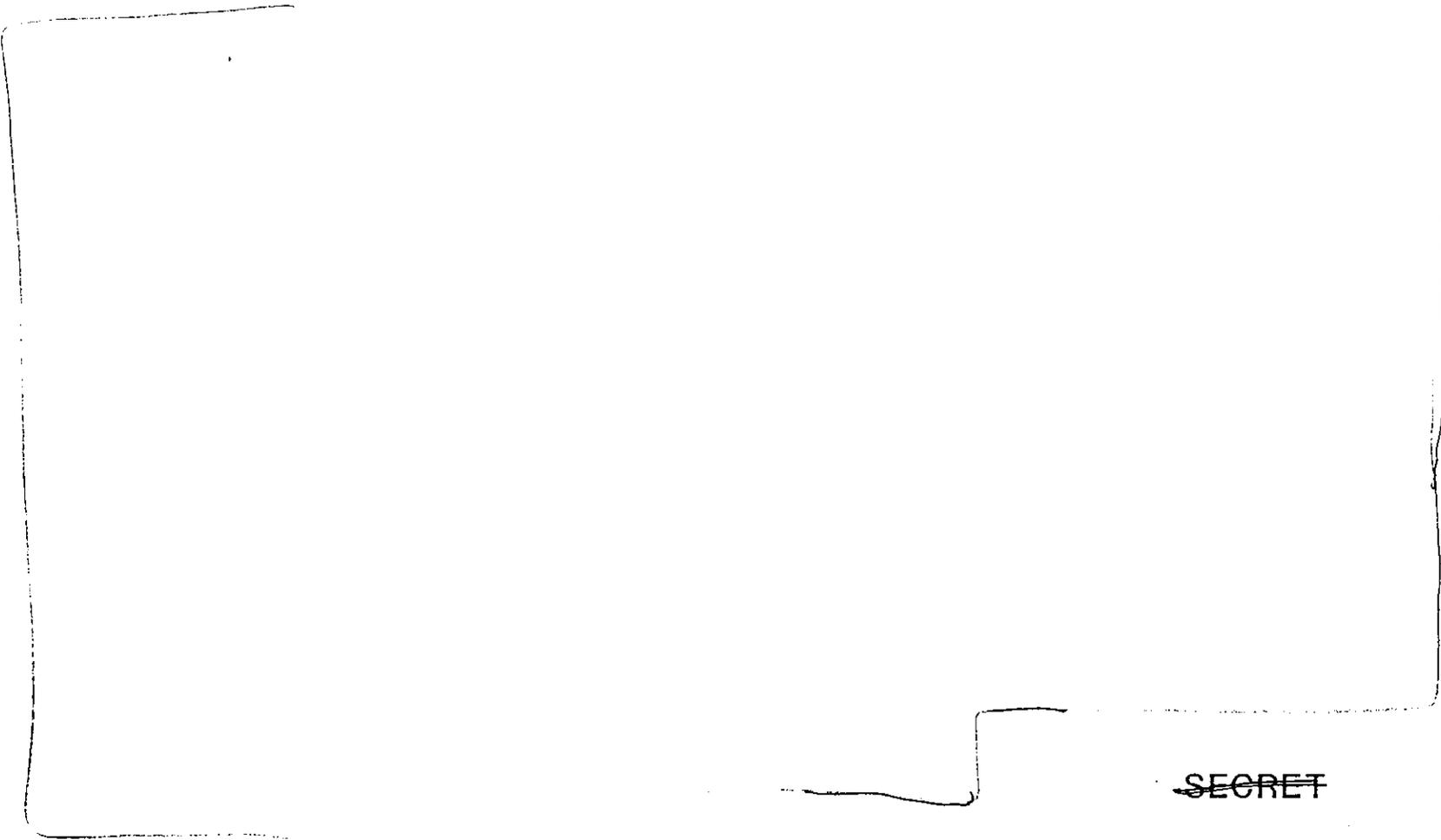
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# CRISIS STABILITY SURVIVING WEAPONS (GEN)



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# CRISIS STABILITY CONCLUSIONS

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BS  
USSC

CURRENT LEVEL OF STABILITY ]

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## OBJECTIVES

- NUCLEAR DETERRENCE
  - BASIC SIOP
  - RESERVE
  - HEDGING
  
- CONVENTIONAL WARFIGHTING
  - BASIC JSCP
  - BASING
  - SUSTAINABILITY
  
- ADDITIONAL CONSIDERATIONS
  - CRISIS STABILITY
  - ✓ •• ARMS RACE STABILITY
  - DISCOURAGE PROLIFERATION
  - AVOID ASYMMETRIC ADVANTAGE
  - RATIOS TO THIRD WORLD COUNTRIES

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## ARMS RACE STABILITY

- AVOID DEPLOYMENTS WHICH WOULD LEAD TO COUNTER DEPLOYMENTS (LEADING TO COUNTER-COUNTER DEPLOYMENTS, ETC)
  
- REDUCE CAPABILITY TO BREAK TREATY LIMITS
  - PHYSICAL CHANGES IN DOWNLOADED ICBMS TO REDUCE CAPABILITY TO RE-LOAD
  
- THINGS TO CONSIDER
  - DOWNLOADING
  - SDI/GPALS

FOR THE FORCE STRUCTURES BEING CONSIDERED  
ARMS RACE STABILITY IS NOT A MAJOR ISSUE

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## OBJECTIVES

- NUCLEAR DETERRENCE
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  - BASIC JSCP
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  - CRISIS STABILITY
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  - ✓ •• DISCOURAGE PROLIFERATION
  - AVOID ASYMMETRIC ADVANTAGE
  - RATIOS TO THIRD WORLD COUNTRIES

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## PROLIFERATION GUIDANCE

- NATIONAL SECURITY STRATEGY OF THE US - AUG 91
  - PREVENT THE TRANSFER OF MILITARILY CRITICAL TECHNOLOGIES AND RESOURCES
  - STRENGTHEN EXISTING ARRANGEMENTS
  - EXPAND MEMBERSHIP OF MULTILATERAL REGIMES DIRECTED AGAINST PROLIFERATION
  - PURSUE NEW INITIATIVES (EX. CHEMICAL WPNS TREATIES)

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## DISCOURAGE PROLIFERATION

- MAINTAIN FORCE CAPABILITY SO THAT ALLIES DON'T SEE NEED TO DEPLOY NUCLEAR WPNS
- DISCOURAGE TECHNOLOGY TRANSFER
- CONTINUE START I-II TO DEMONSTRATE TO 3RD WORLD US/SOVIET INTEREST IN REDUCING NUCLEAR WEAPONS
- INCREASE EMPHASIS ON DEFENSES
  - SOVIET RESPONSE MUST BE CONSIDERED

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## OBJECTIVES

- NUCLEAR DETERRENCE
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  - RESERVE
  - HEDGING
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Obtained Under the  
Freedom of Information Act  
by Hans M. Kristensen  
97-426

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# MEASURES OF EFFECTIVENESS US / USSR ADVANTAGE RATIOS

BI  
USSR

—•— SNDVS    + WPNS    \* MT    — EMT    × HTK    ◊ HTK IC/SL

HISTORY REV, TWIN PEAKS & 91-DNIE

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# US/USSR CAPABILITY RATIOS



BI  
BS  
USSC

■ VEH   ■ WPNS   ■ MT   ■ EMT   ■ HTK   ■ TU HTK

L

] BI, BS  
USSC

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# US/USSR CAPABILITY RATIOS



B1  
B5  
USSC

VEH
  WPNS
  MT
  EMT
  HTK
  TU HTK

[

] B1, B5  
USSC

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# US/USSR CAPABILITY RATIOS



B1  
B5  
USSC

■ VEH   ■ WPNS   ■ MT   ■ EMT   ■ HTK   ■ TU HTK

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] B1, B5  
USSC

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# US/USSR CAPABILITY RATIOS



B1  
B5  
USSC

■ VEH   ■ WPNS   ■ MT   ■ EMT   ■ HTK   ■ TU HTK

[

] B1, B5  
USSC

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# US/USSR CAPABILITY RATIOS



B1  
B5  
USSC.

■ VEH   ■ WPNS   ■ MT   ■ EMT   ■ HTK   ■ TU HTK

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USSC

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# US/USSR CAPABILITY RATIOS



B1  
B5  
USSC

■ VEH   ■ WPNS   ■ MT   ■ EMT   ■ HTK   ■ TU HTK

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USSC

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# US/USSR CAPABILITY RATIOS



B1  
B5  
USSC

■ VEH   ■ WPNS   ■ MT   ■ EMT   ■ HTK   ■ TU HTK

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USSC

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# US/USSR CAPABILITY RATIOS



B1  
B5  
USSC

■ VEH   ■ WPNS   ■ MT   ■ EMT   ■ HTK   ■ TU HTK

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USSC

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## OBJECTIVES

- NUCLEAR DETERRENCE
  - BASIC SIOP
  - RESERVE
  - HEDGING
  
- CONVENTIONAL WARFIGHTING
  - BASIC JSCP
  - BASING
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  - ✓ •• RATIOS TO THIRD WORLD COUNTRIES

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# MEASURES OF EFFECTIVENESS US / OTHER NUCLEAR NATIONS



B1  
B5  
US9C

— SNDVS — WPNS

SOURCE: 544 SIW, UK LIAISON OFFICE

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## Observations

- \* Hedging in the traditional TRIAD concept will be much more important in the future.
- \* The TWIN TRIAD concept places the initial day-to-day deterrence burden on the two ballistic legs.
  - \*\* The bomber leg augments their attack as needed and hedges against the failure of one ballistic leg.
- \* Balance between the ballistic missile legs (ICBM/SLBM) permits a consistent bomber hedge requirement.

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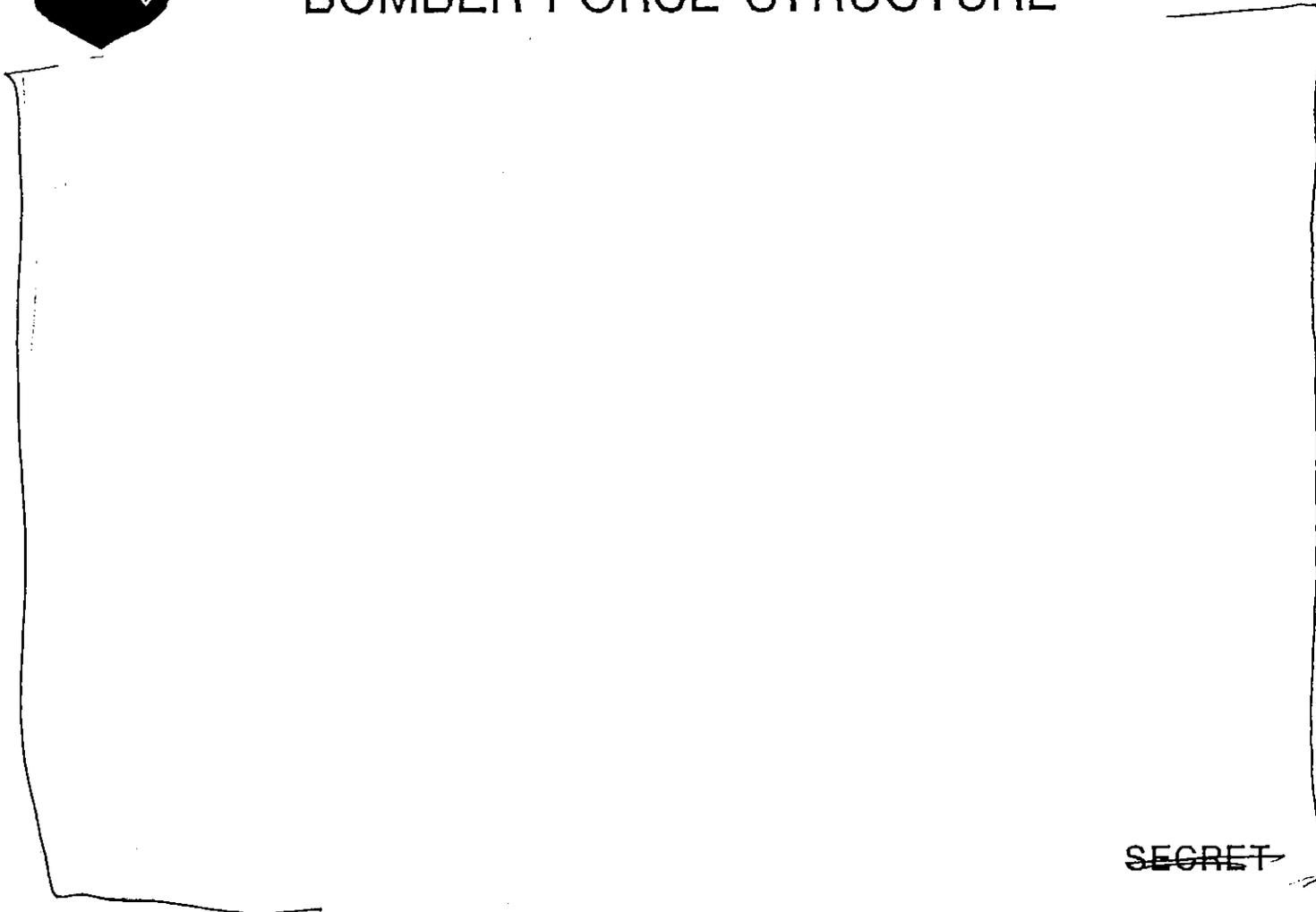
## Observations (Cont.)

- \* The Secure Reserve is not a hedge.
  - \*\* It is mostly SLBMs, most enduring assets.
  - \*\* Cannot hedge against failure of SLBMs in the basic attack.
  
- \* The decline of the overall target base gives us the chance to use bombers in a real TRIAD hedge role for the first time.
  
- \* Placing the bomber force in this role allows the use of the bomber to swing as needed between the TWIN TRIADS. It makes both the TRIAD and the TWIN TRIADS possible.

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# PRELIMINARY THOUGHTS BOMBER FORCE STRUCTURE

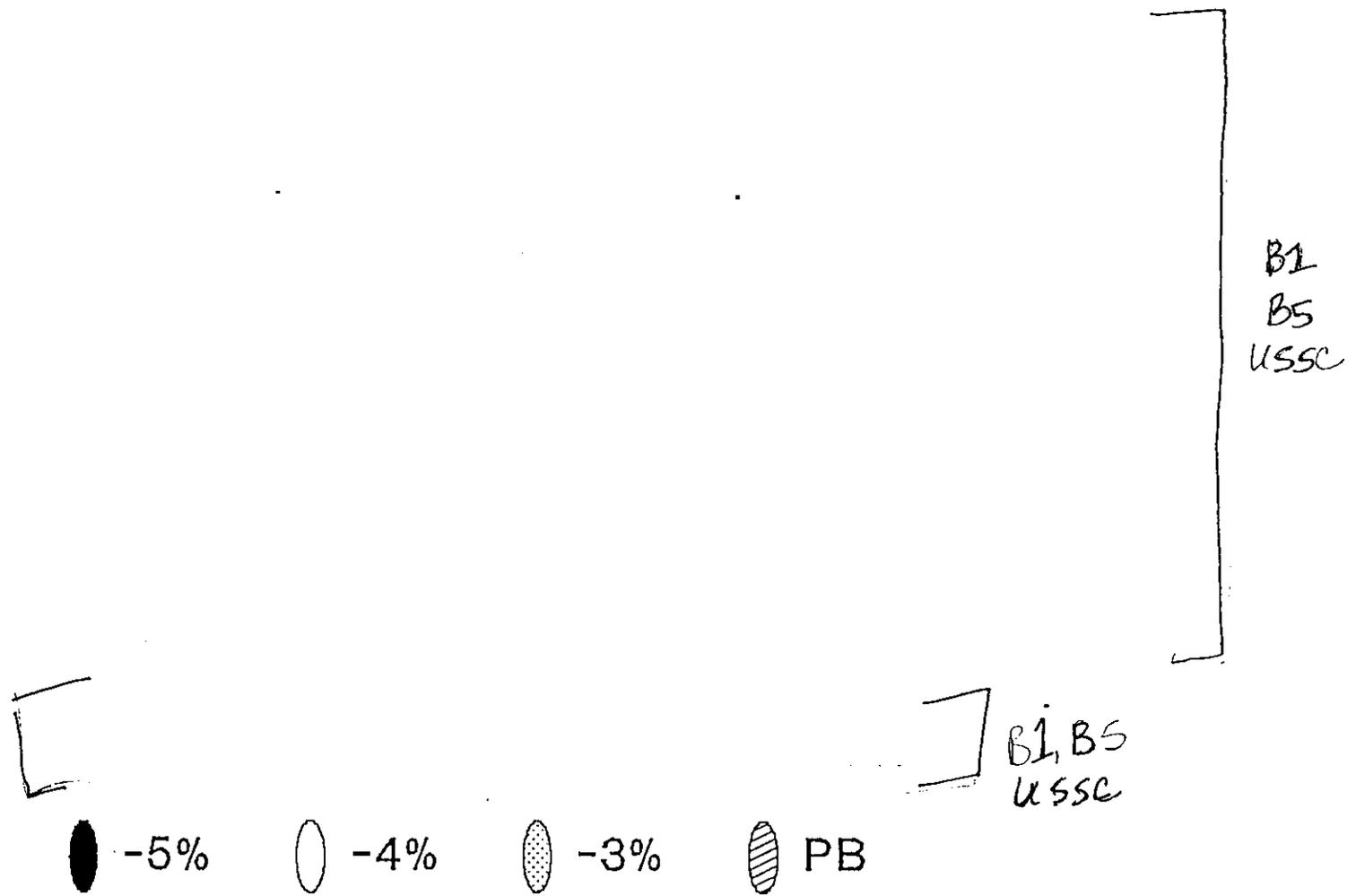


B1  
B5  
USSC

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# WHAT'S AFFORDABLE



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# STRATEGY COMPARISON



B1  
B5  
USSC

] WEAPON/DGZ RATIO  
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# WEAPON REQUIREMENTS

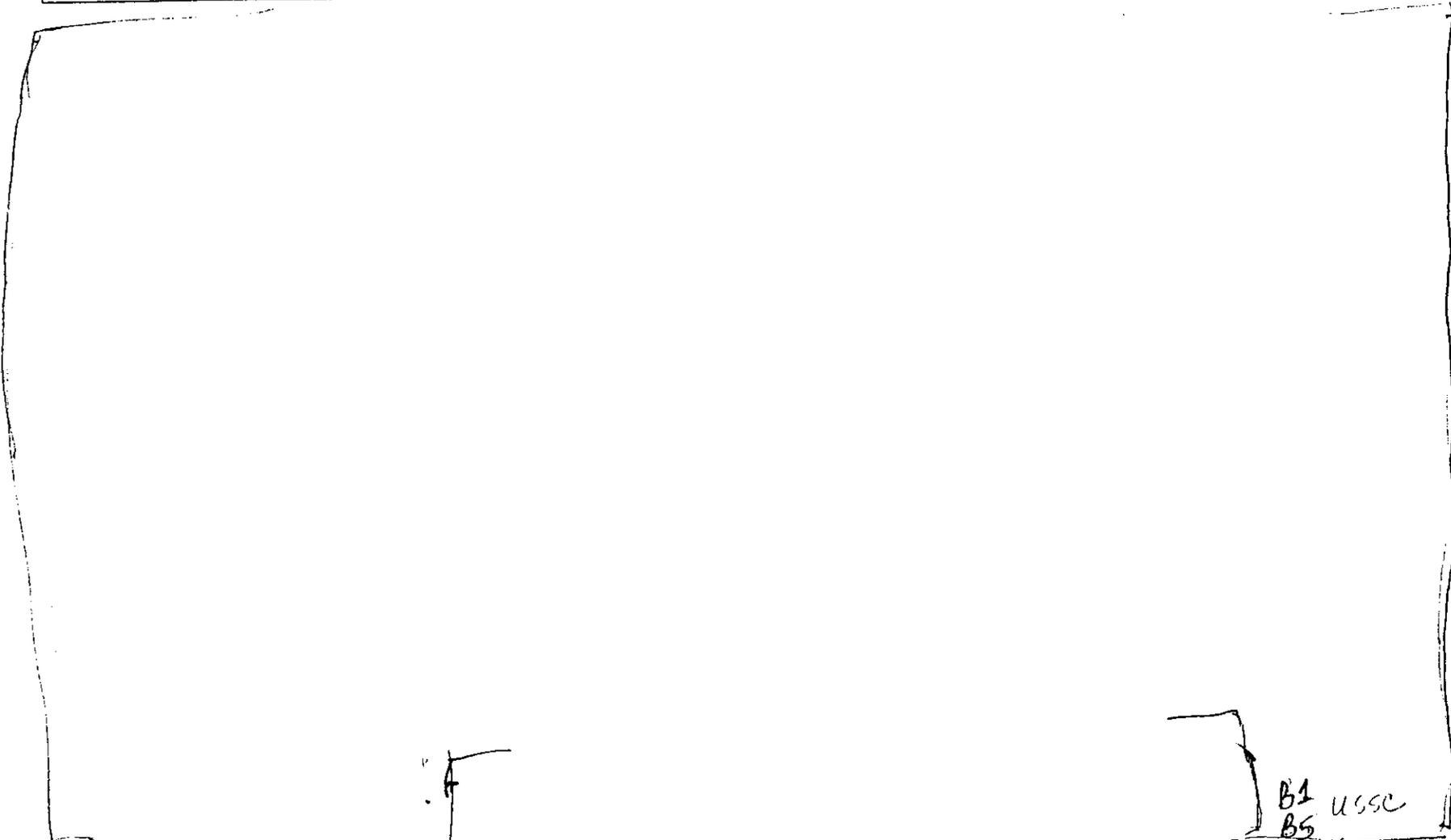


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START II STUDY

BACKGROUND: POST START I STRATEGIC (LONG-RANGE) NUCLEAR WARHEADS



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AFCSA/SASF  
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# RESERVES

- NSDD-13



- NUWEP 91



- JSCP 91-92



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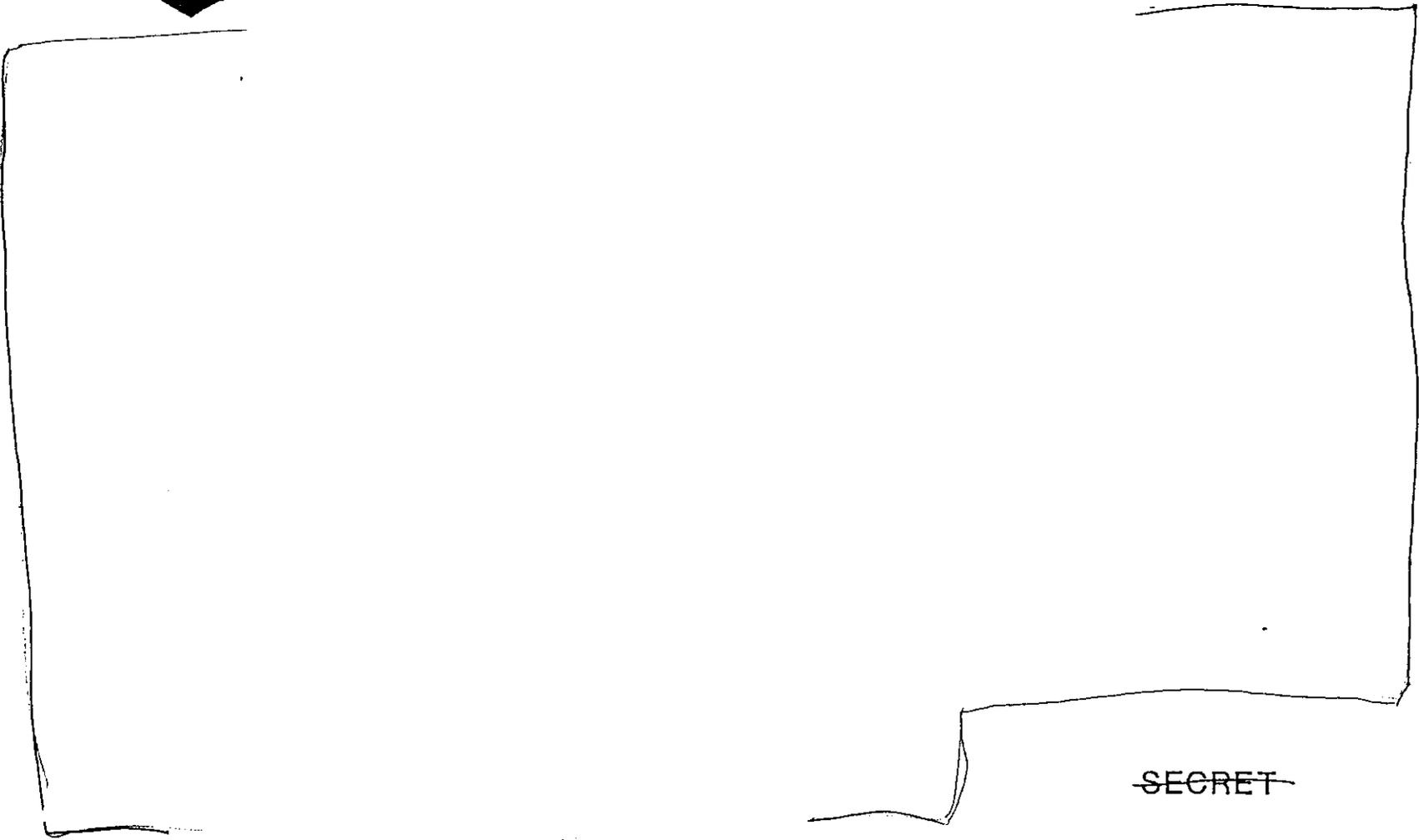


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# CRISIS STABILITY SURVIVING WEAPONS (GEN)



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# HEDGE

- NSDD-13



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- NUWEP 91



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- JSCP 91-92



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# PRELIMINARY THOUGHTS BOMBER FORCE STRUCTURE

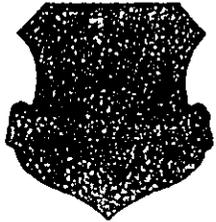


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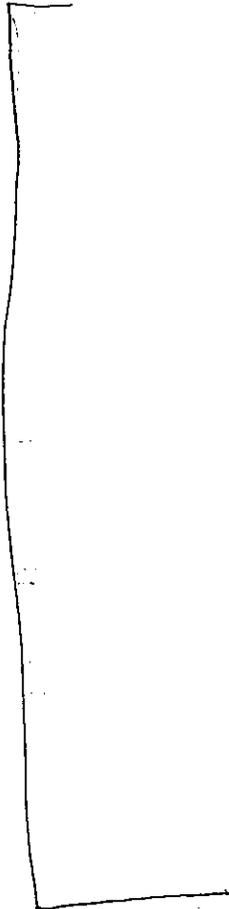


# Bomber Requirements Summary

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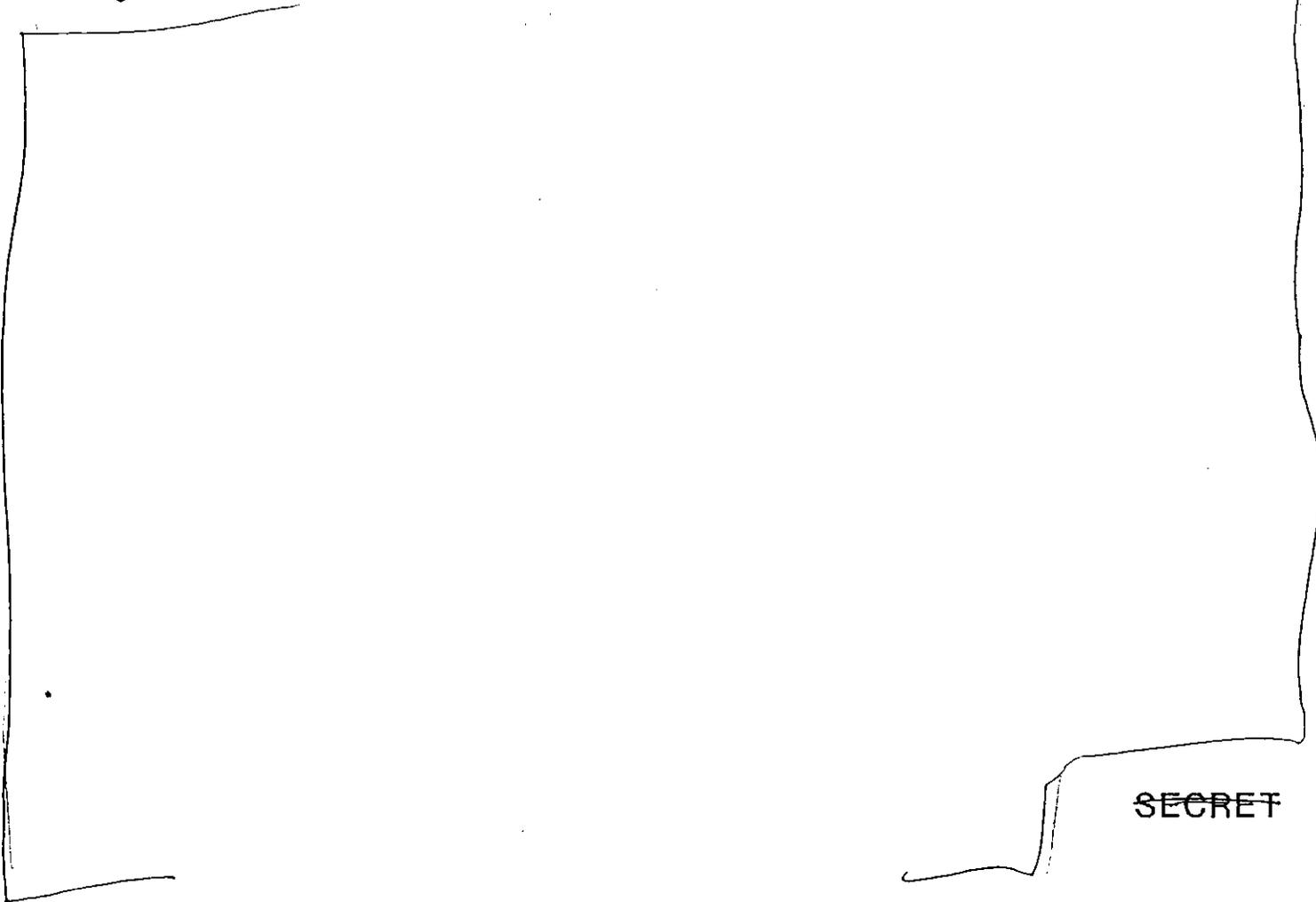
# Basing Tradeoffs



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# KOREA EXAMPLE BOMBERS NEEDED



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# OBJECTIVE TO STRATEGIES

ALTERNATIVE

1

2

3

NUCLEAR DETERRENCE

BASIC SIOP

RESERVE

HEDGE



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CONVENTIONAL WARFIGHTING

BASIC JSCP

BASING

SUSTAINABILITY



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# OBJECTIVE TO STRATEGIES

## ALTERNATIVE

1

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### NUCLEAR DETERRENCE

BASIC SIOP

RESERVE

HEDGE



### CONVENTIONAL WARFIGHTING

BASIC JSCP

BASING

SUSTAINABILITY



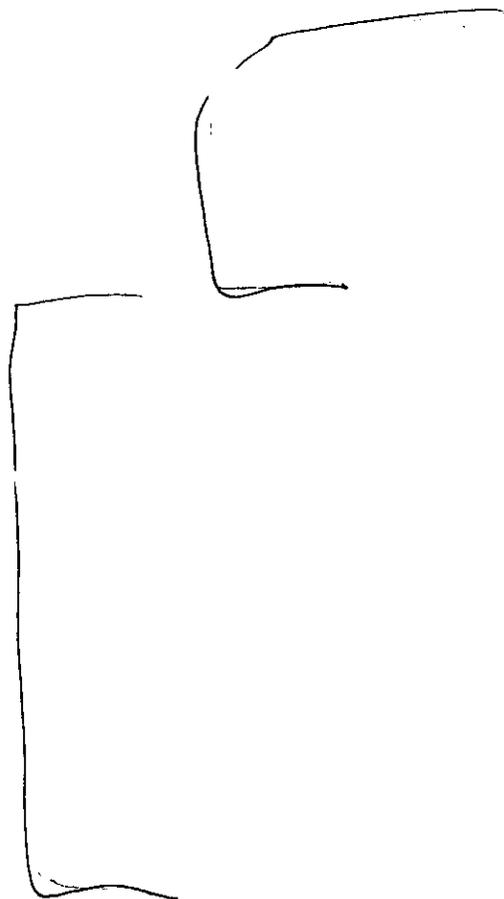
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B1  
B5  
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 ICBM  
 B-1 PEN

 SLBM  
 B-1 S/O

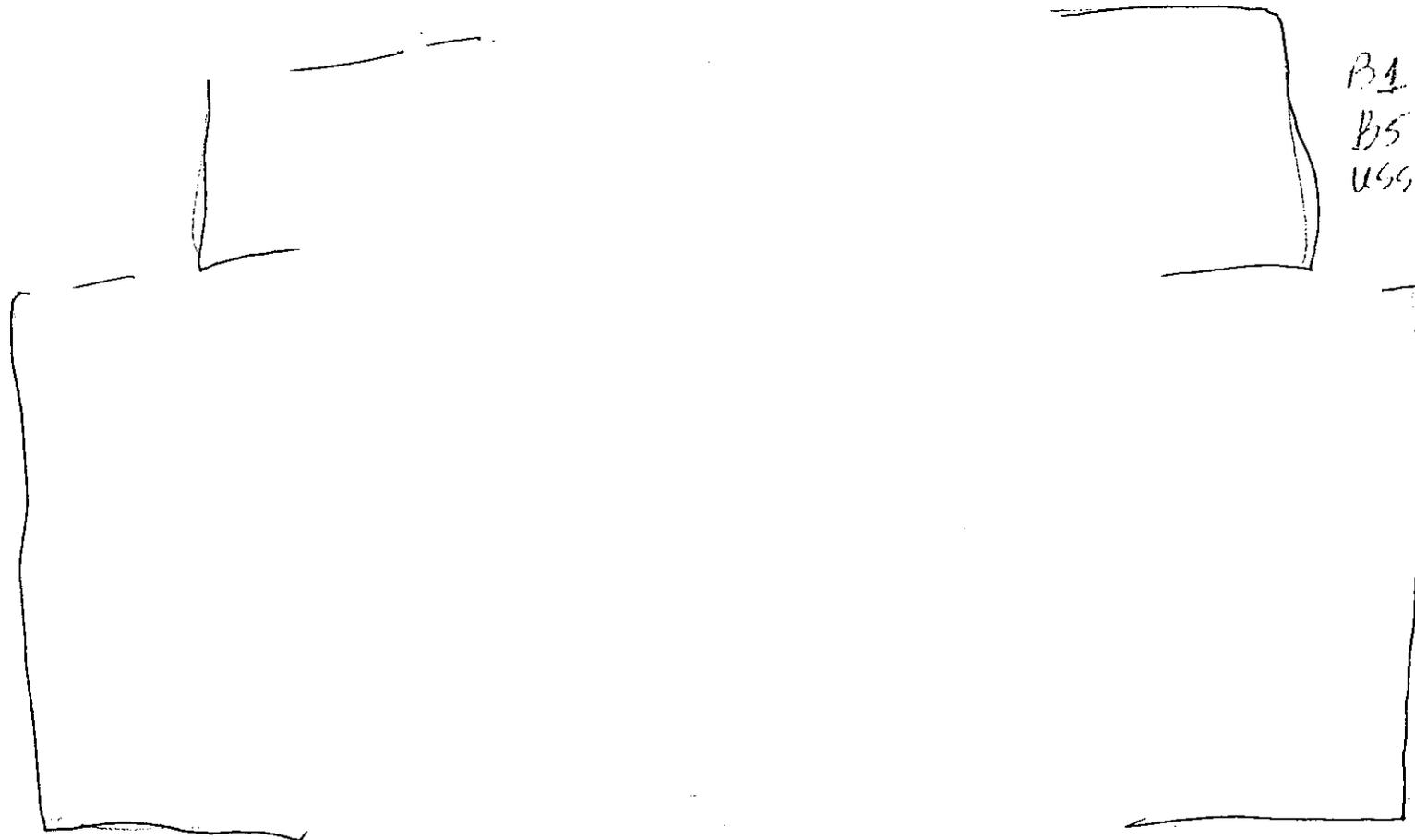
 B-2 PEN  
 B52H S/O



B1, B5  
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B1  
B5  
USSC

 ICBM  
 B-1 PEN

 SLBM  
 B-1 S/O

 B-2 PEN  
 B52H S/O



 B1, B5  
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# CRISIS STABILITY SURVIVING WEAPONS (GEN)



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## OBJECTIVES

- NUCLEAR DETERRENCE
  - BASIC SIOP
  - RESERVE
  - HEDGING
  
- CONVENTIONAL WARFIGHTING
  - BASIC JSCP
  - BASING
  - SUSTAINABILITY
  
- ADDITIONAL CONSIDERATIONS
  - CRISIS STABILITY
  - ARMS RACE STABILITY
  - DISCOURAGE PROLIFERATION
  - AVOID ASYMMETRIC ADVANTAGE
  - RATIOS TO THIRD WORLD COUNTRIES

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## WHAT WE THINK ABOUT ICBMs

- WHY ICBMs
- ICBM HISTORY
- ICBM MODERNIZATION
- NEW WORLD ORDER
- POSTURING FOR START II

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## WHY ICBMs?

### Historical ICBM Strengths

- RAPID RESPONSE
  - 30 MINUTE TOF
  - COMMUNICATIONS CONNECTIVITY
    - RAPID
    - SECURE
    - REDUNDANT
- ACCURATE AND EFFECTIVE
  - WSR + CEP + YIELD = PROMPT HARD TARGET KILL
- SOVEREIGN BASING
  - UNAMBIGUOUS ATTACK INDICATIONS
  - SECURE FROM UNCONVENTIONAL ATTACKS (TERRORISTS)

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# WHY ICBMs ?(cont)

## Historical ICBM Strengths

- HIGHEST ALERT RATE

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- POSITIVE CONTROL

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- RAPID RETARGETING

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# WHY ICBMs? (cont)

## Historical ICBM Strengths

- ECONOMY OF OPERATION



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## ICBM HISTORY

- ATLAS/TITAN I--Late 1950s
  - ABOVE GROUND LAUNCH
  - LIQUID FUELED
  - AREA TARGET CAPABLE
- TITAN II--EARLY 1960s
  - UNDERGROUND LAUNCH
  - LIQUID FUEL
  - IMPROVED ACCURACY (NO HTK)

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## ICBM HISTORY (cont)

- MINUTEMAN
  - CORNERSTONE OF 1960s NUCLEAR DETERRENCE
    - SURVIVABLE
    - PROMPT
    - ECONOMIC TO OPERATE
    - EFFECTIVE
  - UNDERGROUND, HARDENED, DISPERSED LFs/LCCs
    - CAPABLE OF RIDING OUT A SOVIET FIRST STRIKE

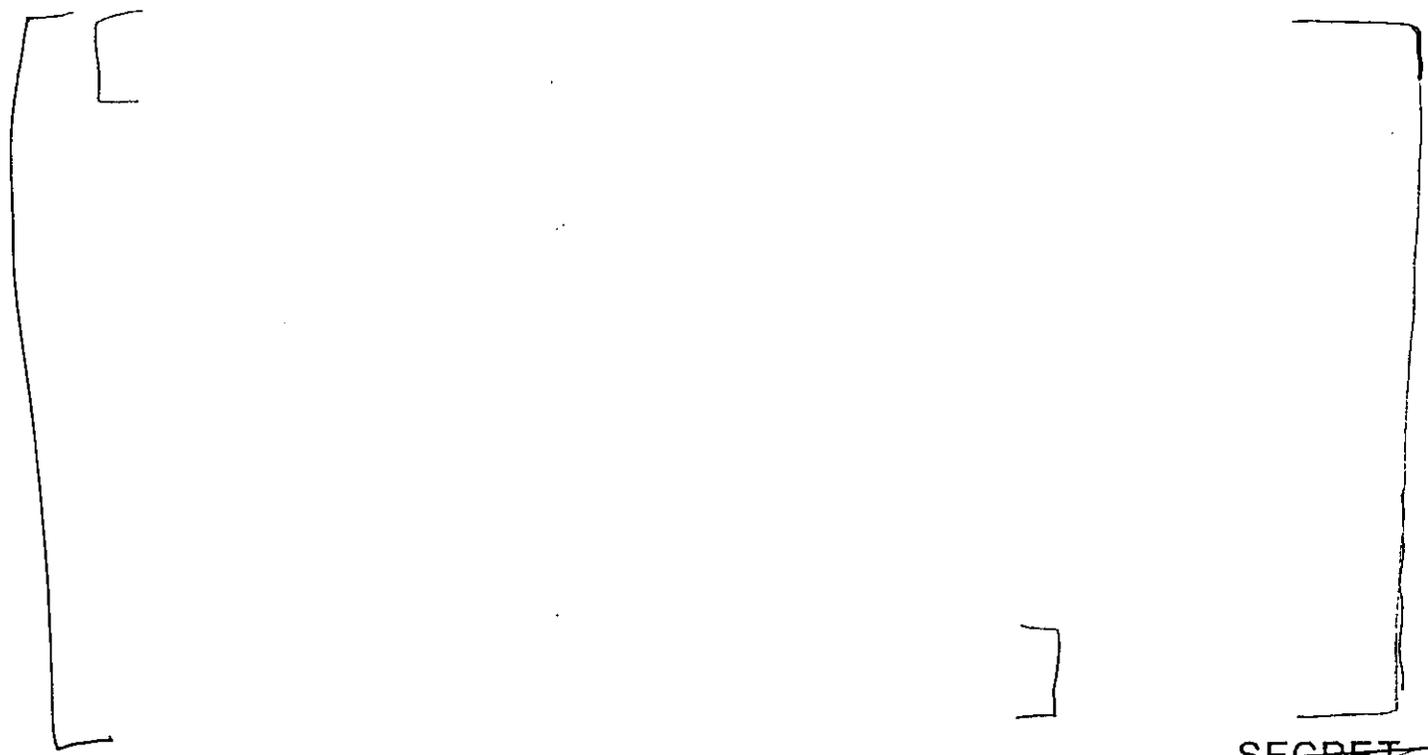
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# WHAT CHANGED?

- SURVIVABILITY CAME INTO QUESTION IN 1970s



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## ICBM MODERNIZATION

### Search for Survivability

- GOAL: RESTORE SURVIVABILITY
  - COMPLICATES SOVIET TARGETING
  - ENABLES ICBM TO SURVIVE A FIRST STRIKE
  - ENHANCES STABILITY
  - RETAIN PROMPT HTK CAPABILITY OF ICBM
- OPTIONS
  - SHELL GAME
    - 200 PEACEKEEPER MISSILES SHUTTLED BETWEEN 2400 SHELTERS
    - SOUTHWEST US BASING

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# ICBM Modernization (cont)

## Search for Survivability

- PEACEKEEPER RAIL GARRISON



- PEACETIME

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- INCREASED READINESS

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## ICBM Modernization (cont) Search for Survivability

- SMALL ICBM (SICBM)

[

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- PEACETIME
  - MOB IS AT EXISTING MISSILE BASES
  - HMLs PARKED ON EXISTING MISSILE SITES
- INCREASED READINESS

[

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## ICBM Modernization Today

- SHELL GAME - CANCELLED
- PEACEKEEPER RAIL GARRISON
  - R & D
  - PROGRAM TO BE SHELVED AFTER FIRST TEST LAUNCH
    - DEMONSTRATE CAPABILITY
- SICBM
  - R & D



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## NEW WORLD ORDER

- REDUCED SOVIET THREAT
  - ECONOMY DRIVEN
  - FEWER ATTACKING SOVIET WEAPONS
- PROLIFERATION OF NUCLEAR WEAPON CAPABILITY
  - POTENTIAL FOR NON-SOVIET ATTACK
- SHRINKING DEFENSE BUDGET
- START II ON HORIZON

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## REDUCED SOVIET THREAT

- ATTACK FORCE DECLINING



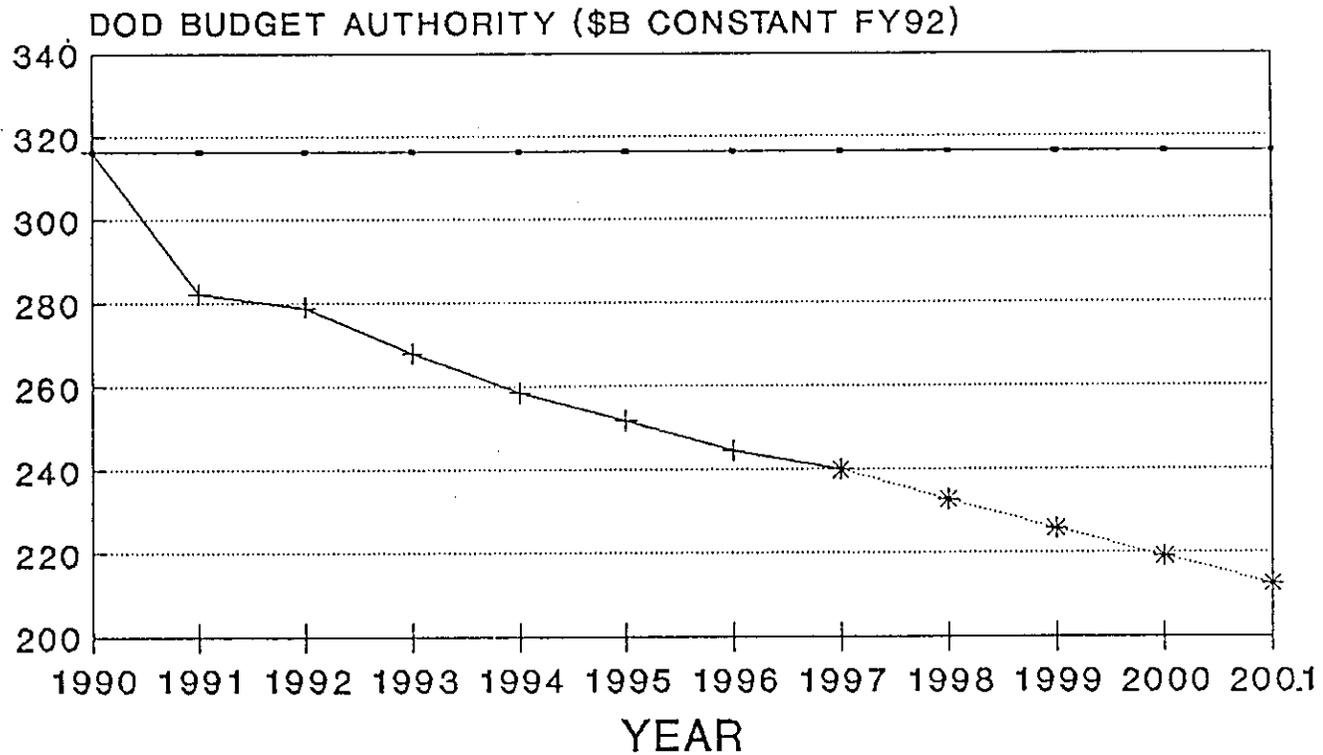
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- INCREASED TURMOIL - RECENT COUP ATTEMPT
  - COUP LEADERS CONTROLLED NUCLEAR WEAPONS ??
  - BREAKUP OF REPUBLICS

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# SHRINKING DEFENSE BUDGET



—•— 0% GROWTH    —+— PLANNED    —\*— ESTIMATED (-3%)

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## START II

- THEME IS "STABILITY"
  - DeMIRVing ICBMs
  - DOWNLOADING SLBMs
  
- NOTIONAL LIMITS:
 

TOTAL WARHEADS	3000-4000
BM WARHEADS	2000-2500
SNDVs	1200-1500
  
- "BALANCE" IS MORE IMPORTANT - WITH REDUCED VARIETY IN WEAPON SYSTEMS
  - REDUCES TRIAD IMPACT RESULTING FROM CATASTROPHIC SYSTEM FAILURE
  - REQUIRES FEWER BOMBER WEAPONS TO HEDGE LARGEST LEG



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# OLD VISION ... FUTURE WORLD

## OLD VISION...CURRENT DIRECTION

- TOWARDS FEWER SILOs
  - EMPHASIS ON VULNERABILITY (TO LARGE ATTACK)
  - FOCUS ON MOBILITY (PKRG,SICBM,TRIDENT SSBN)

## FUTURE WORLD CONDITIONS

- EMPHASIS ON MOBILITY IS INCONSISTENT WITH NEW WORLD ORDER
- THREAT TO SILOS NOW REDUCED AND NUMERICALLY LIMITED
- NO CONSIDERATION OF GPALS
- CHANGE IN RISK TOLERANCE

- GIVEN SHRINKING DEFENSE BUDGET & SMALLER TRIAD BUDGET
  - FOCUS SHOULD BE ON LOWER COST SYSTEMS WITH ADEQUATE CAPABILITY
- TRIDENTS
  - TOO MANY EGGS IN TOO FEW BASKETS (WORSE AT START II)
- SHIFT IN DIRECTION
  - AWAY FROM MOBILITY -- HIGH COST/NEW SYSTEM
  - TOWARDS SILOs -- LOW COST/PROVEN TECHNOLOGY

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## AT REDUCED WEAPONS LEVELS

- LOWER INCENTIVE TO STRIKE FIRST
  - APPROACHING 1:1 EXCHANGE RATIO
  - AT "BEST" INITIATOR REMOVES BOTH ARSENALS
    - BETTING OPPONENT WILL RIDEOUT ATTACK
  - AT "WORST" INITIATOR ATTACKS EMPTY HOLES
- GPALs FURTHER DEINCENTIVIZES AGAINST FIRST STRIKE
  - ADDS UNCERTAINTY TO WAR PLANNER
  - SOME RVs GET DESTROYED

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# SURVIVABILITY WITH GPALS



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## WHAT HAS CHANGED?

Obtained Under the  
Freedom of Information Act  
by Hans M. Kristensen

97-42h

- ✓ THE SOVIET THREAT ... (FADING?)
  - MOBILITY WAS ESSENTIAL IN THE FACE OF AN UNCONSTRAINED SOVIET THREAT.
  - A NUMBER OF FACTORS WILL LIKELY EFFECT THE THREAT OUR SILOS MAY FACE.
    - START I LIMITS ON TOTAL RVS
    - THE SOVIET ECONOMIC CRISIS
    - START II PRESSURE TO DE-MIRV
    - GPALS AND FUTURE DEFENSES
- ✓ THE US BUDGET ... (MOBILITY IS EXPENSIVE!)
  - MOBILITY, ESPECIALLY IF ONLY A FUTURE OPTION, IS LIKELY NOT TO SURVIVE ABES

5 SEP 91

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## IF NO MOBILITY, THEN WHAT?

- ✓ MOBILITY PROVIDES MORE THAN SURVIVABILITY.
  - MOBILITY LETS US EXPAND ICBM FORCE STRUCTURE WITHOUT BUILDING SILOS.
- ✓ WITHOUT MOBILITY AS AN OPTION, WE SHOULD KEEP MORE SILOS.
  - NEED ENOUGH TO HOUSE A DE-MIRVED FORCE (SINGLES) AND STILL MAINTAIN SOME BALANCE IN TRIAD WITH SLBMS.
  - BY-PRODUCTS ARE THAT SILOS ARE:
    - CHEAP TO MAINTAIN AND OPERATE;
    - NO PROBLEM WITH PUBLIC INTERFACE; AND,
    - SECURE FROM TERRORIST TO TORNADO.

5 SEP 91

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# IF NO MOBILITY, NEW MISSILE?

- ✓ NEW MISSILE IS TIED TO MOBILITY.
- NOT CLEAR A NEW MISSILE IS NEEDED FOR A SILO-BASED FORCE.



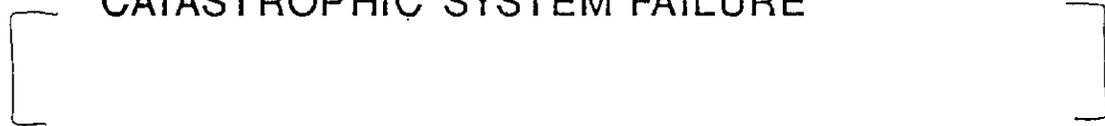
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# WHY RETAIN 150 SILOs?

- BETTER BALANCE IN TRIAD
  - REDUCED TRIAD IMPACT RESULTING FROM CATASTROPHIC SYSTEM FAILURE
- COST (vs MOBILE SYSTEM)
  - 150 ADDITIONAL SILOs MAINTAINED PER YEAR VERSUS NEW UNPROVEN TECHNOLOGY
  - COST SAVINGS TO TAXPAYER, RETAIN CAPABILITY



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# POSTURING FOR START II

## What Role for ICBMs?



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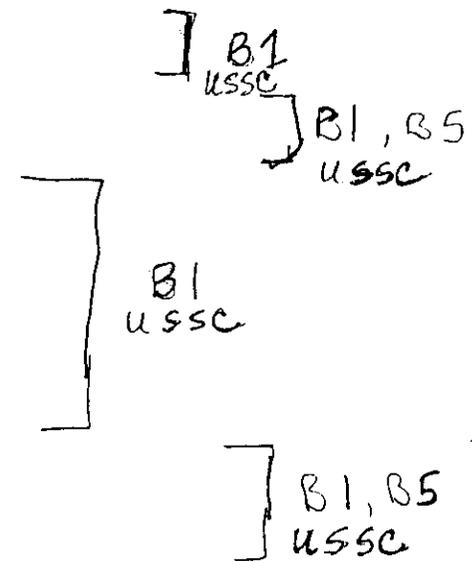
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# HOW DO WE DO IT

## Numerous Options

- DEMIRV MM IIIs



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## OBSERVATIONS ON ICBM FORCE

- IN 1960s, ICBMs WERE MOST EFFECTIVE STRATEGIC SYSTEM
- IN 1970s, ICBM SURVIVABILITY WAS DOUBTFUL
- IN 1980s/1990s, MOBILITY PROGRAMS PURSUED TO ADD SURVIVABILITY BACK TO ICBMs



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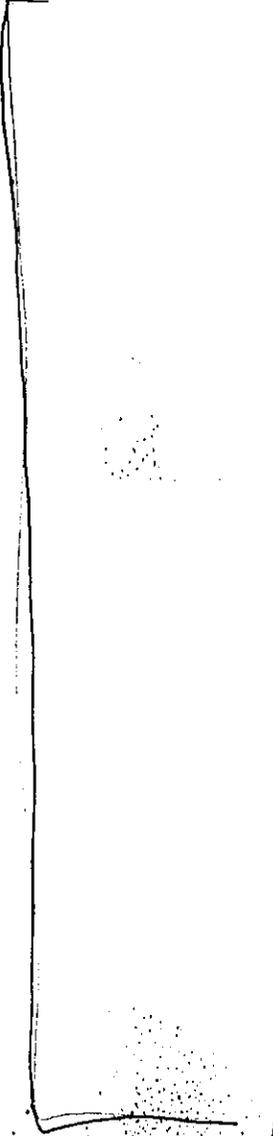
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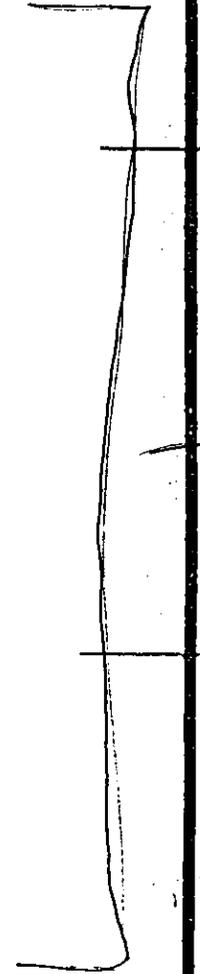
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# RECONNAISSANCE ROADMAP



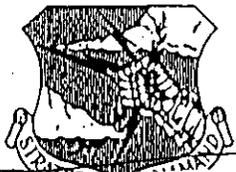
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# PRIORITIZED PROPOSED FUNDING

OPERATIONAL AIRCRAFT/PAA

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FUNDING

PROPOSED FUNDING

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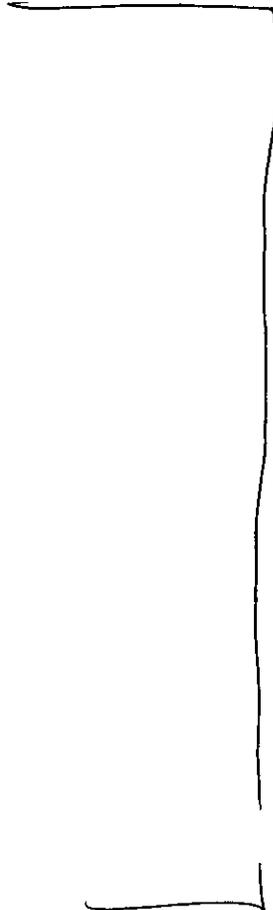
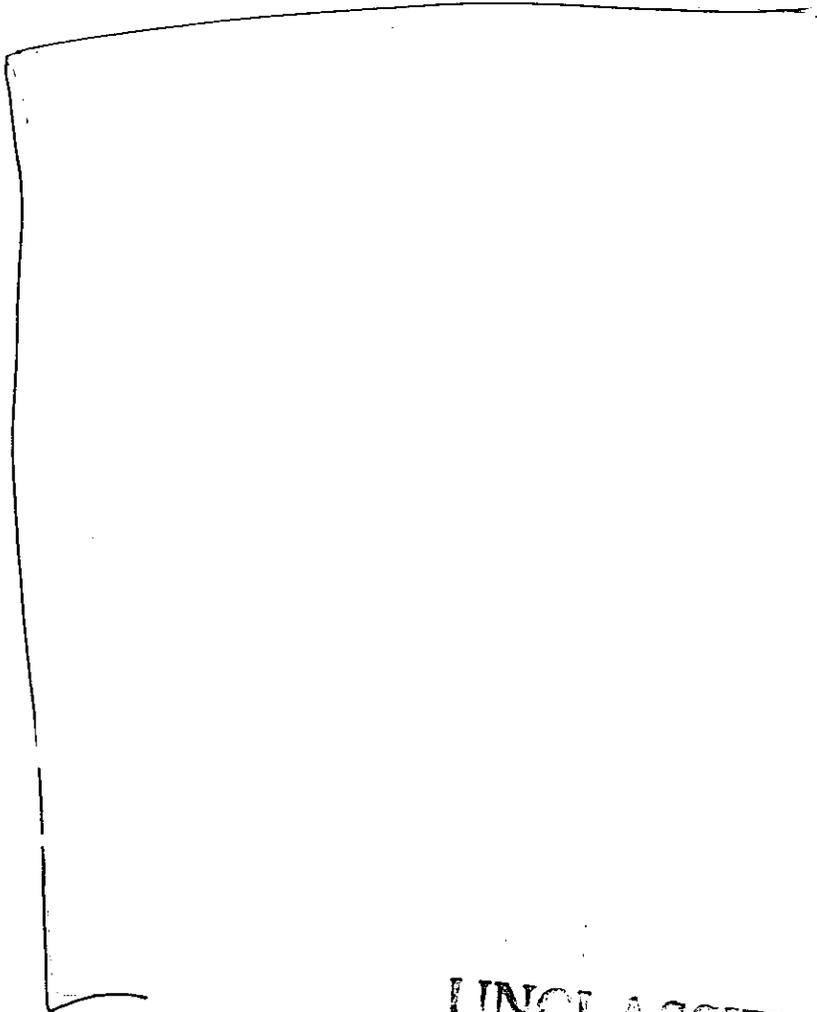
# BOMBER FORCE STRUCTURE



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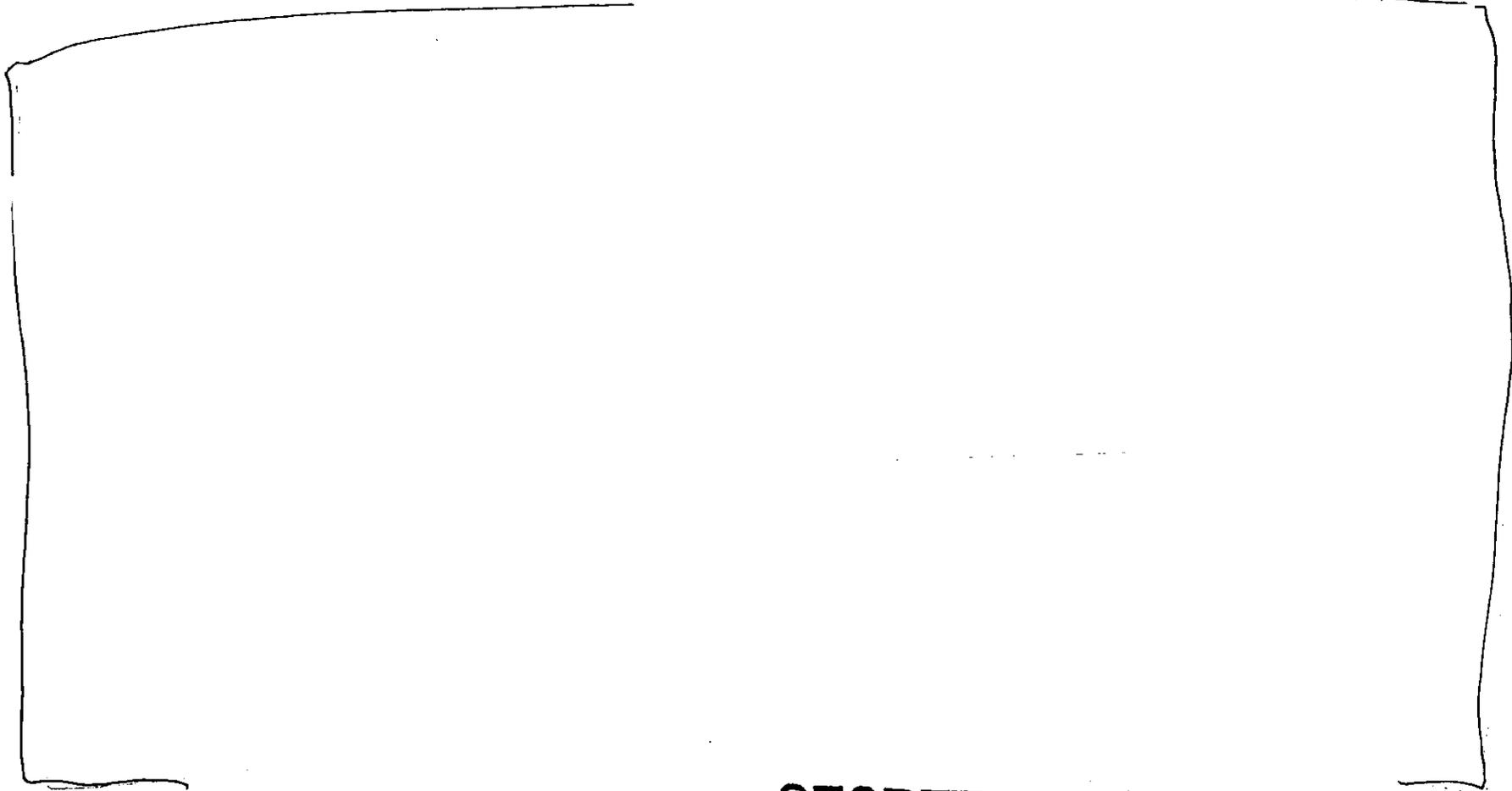
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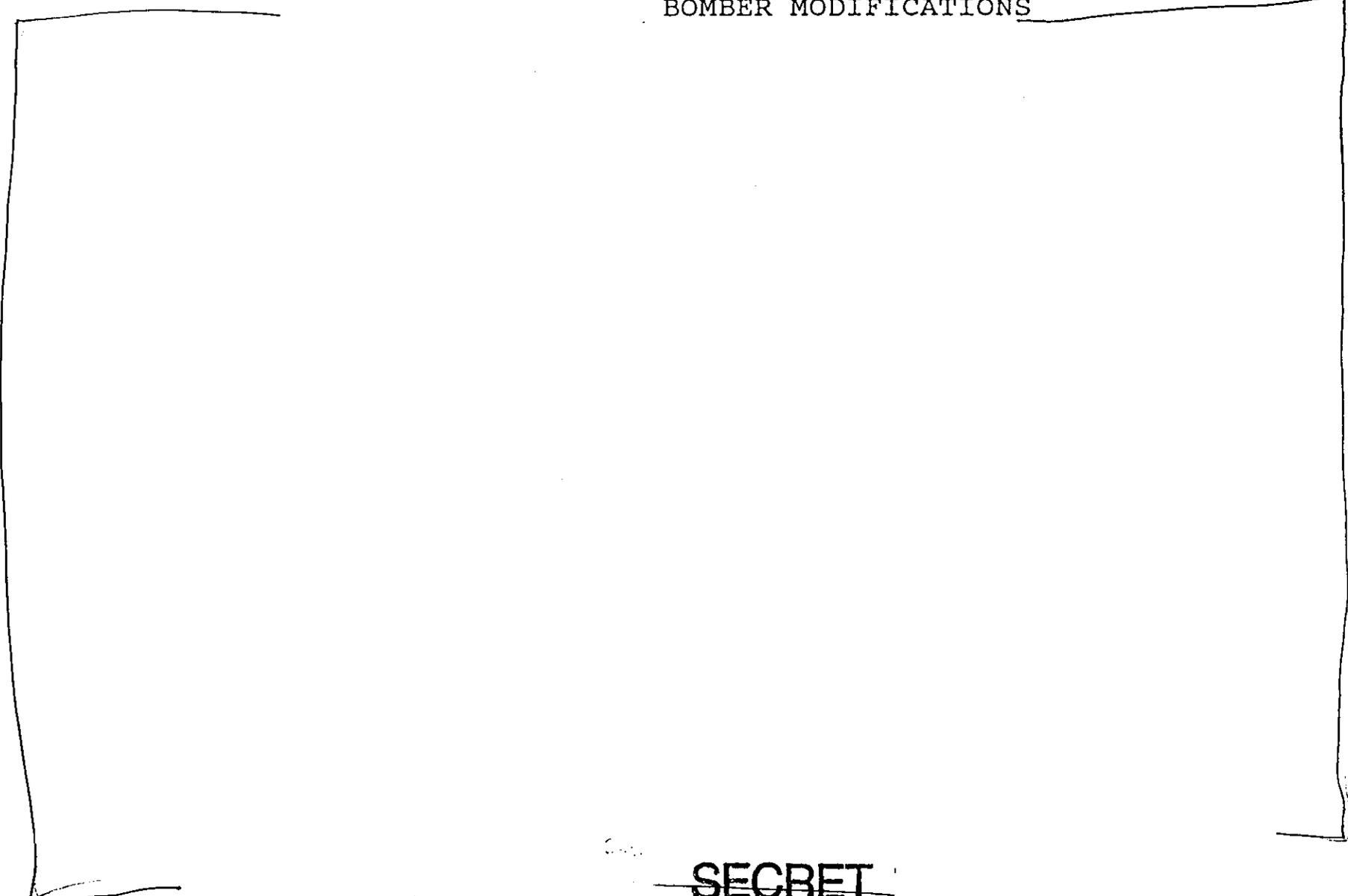
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BOMBER MODIFICATIONS



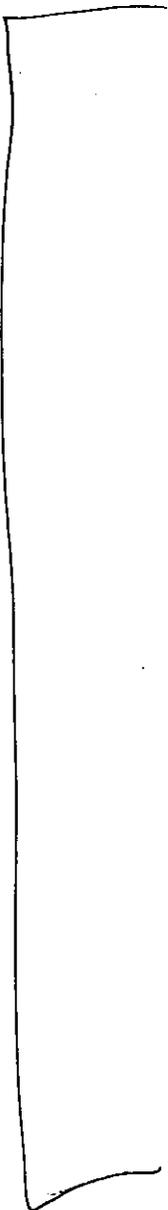
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ICBM MODIFICATIONS

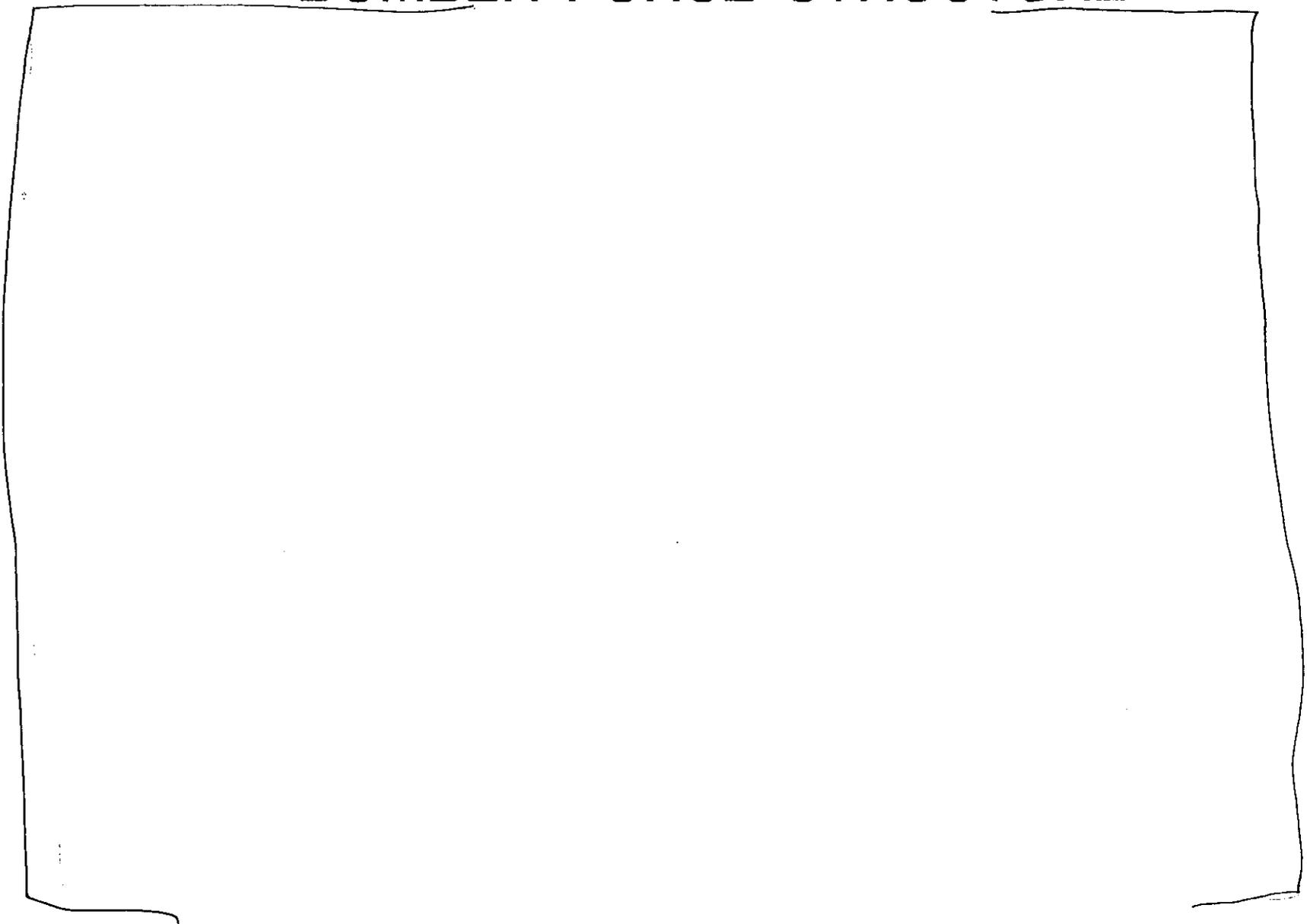


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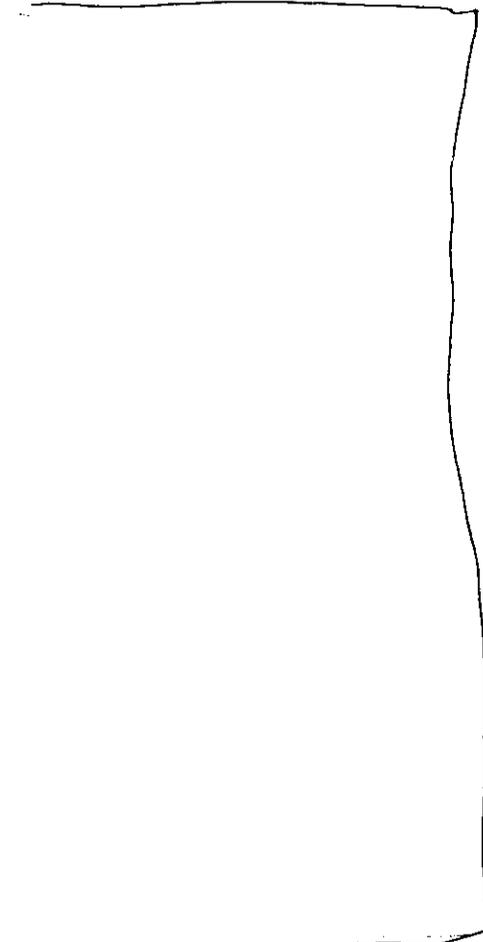
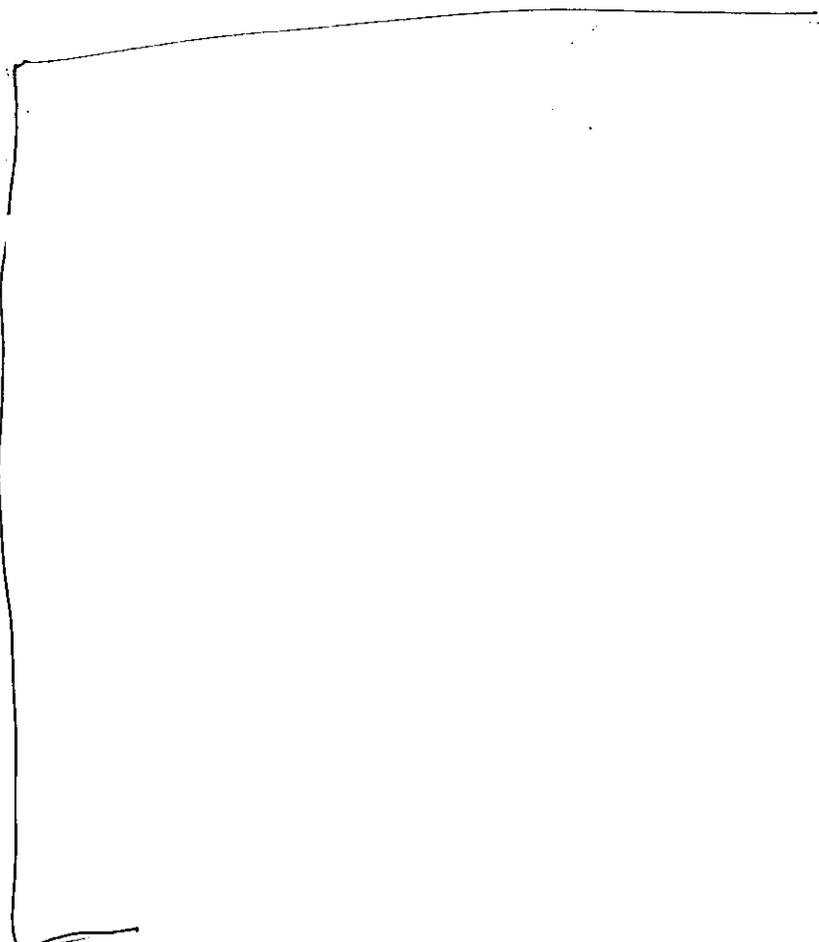
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# BOMBER FORCE STRUCTURE



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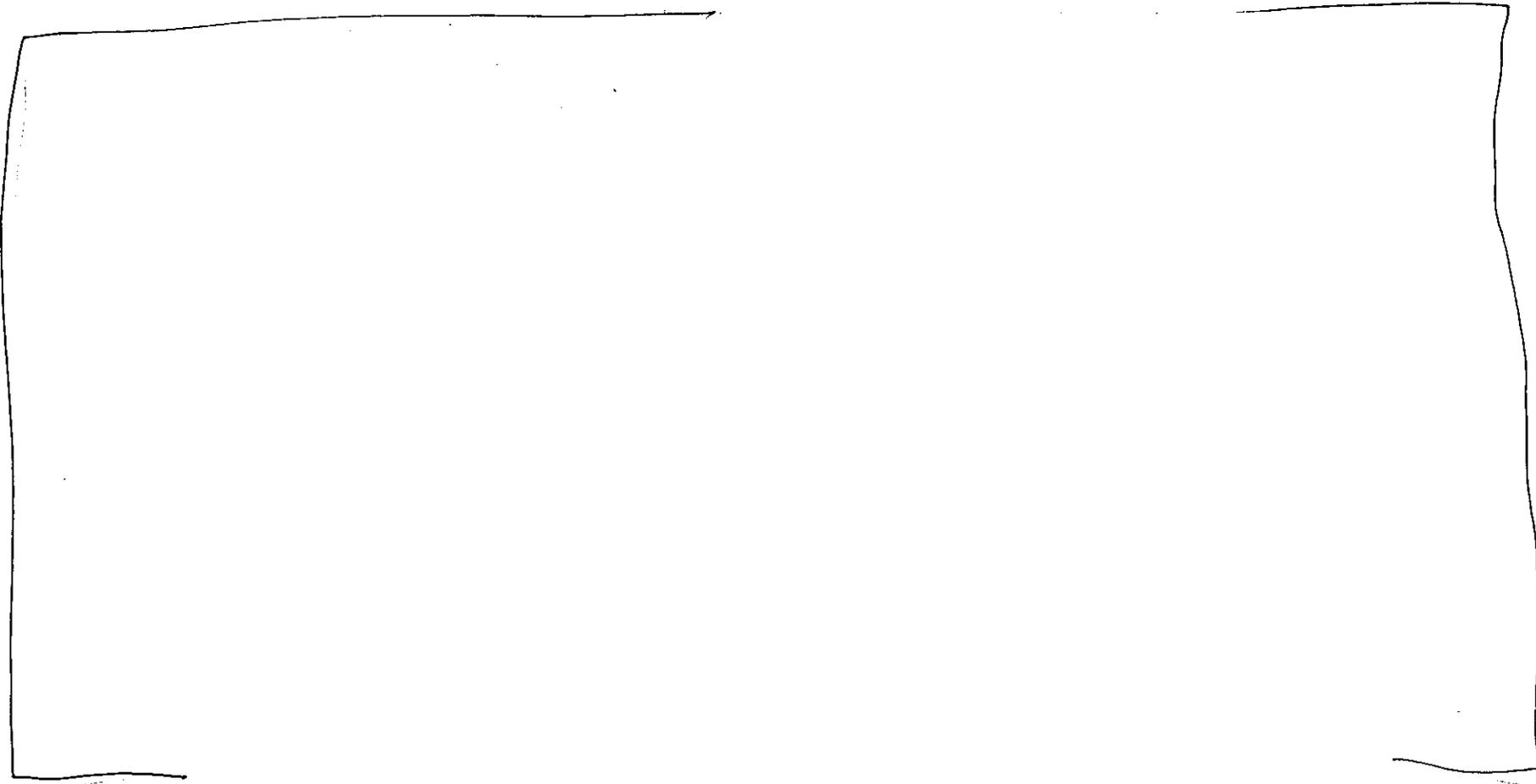
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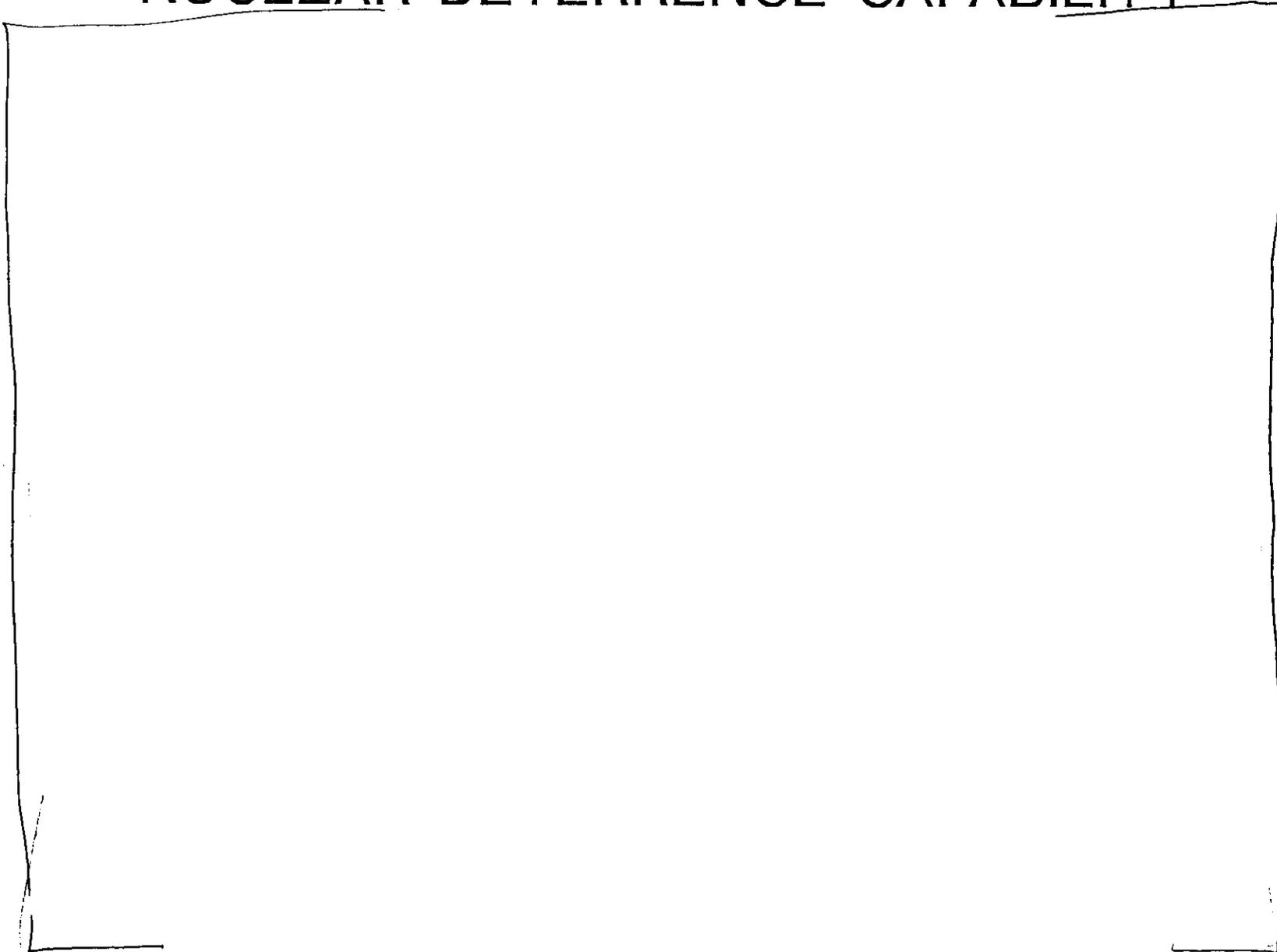
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# NUCLEAR DETERRENCE CAPABILITY



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# NUCLEAR DETERRENCE CAPABILITY



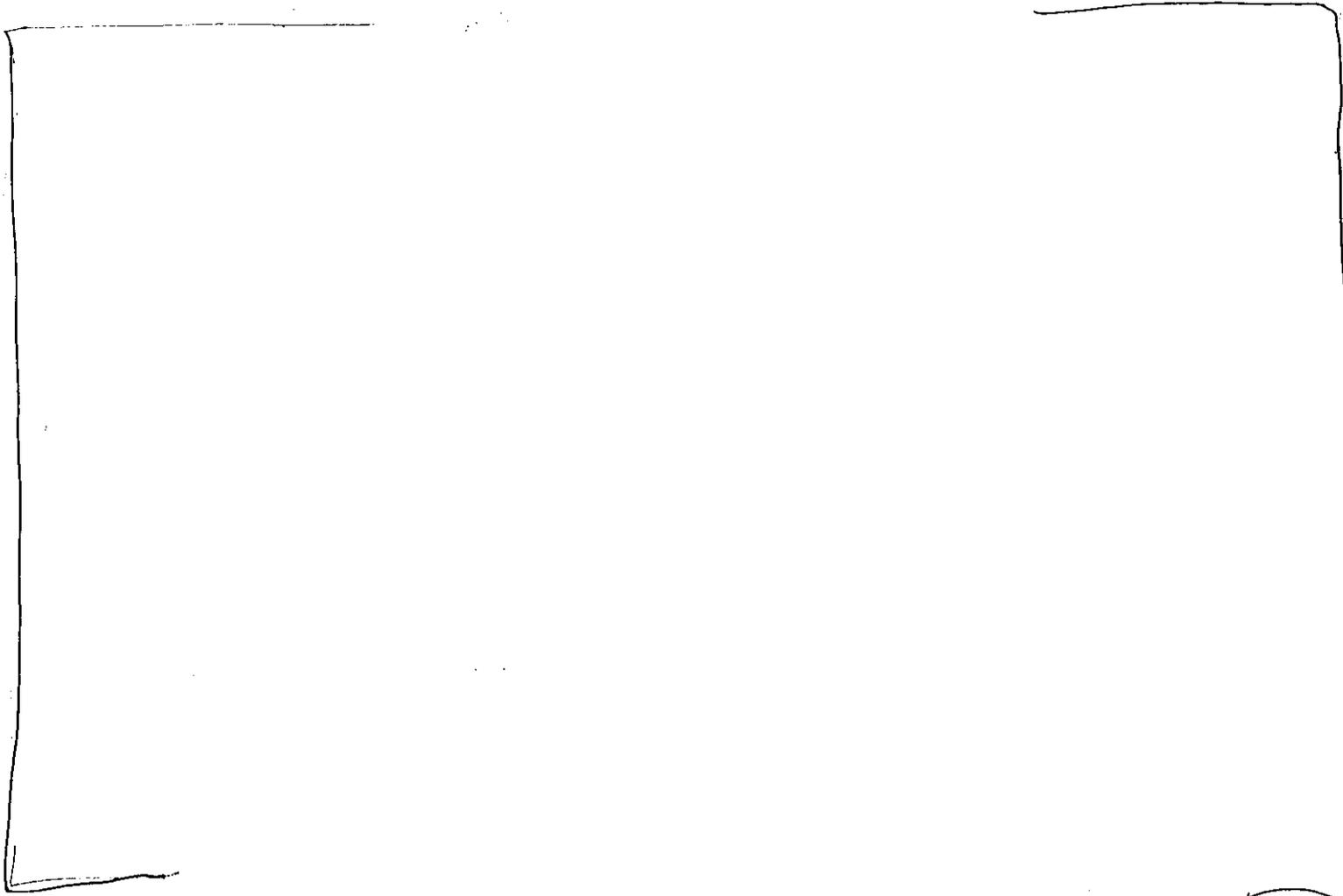
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START ACCOUNTABILITY UNCLASSIFIED



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DEPARTMENT OF DEFENSE  
UNITED STATES STRATEGIC COMMAND

Reply To:  
USSTRATCOM/J0734  
901 SAC BLVD STE 1E5  
OFFUTT AFB NE 68113-6073

18 November 1997

Mr. Hans M. Kristensen  
1927 Tulare Avenue  
Richmond CA 94805-2024

Reference your 5 September 1997 Freedom of Information Act (FOIA) request (97-42h) for "The Phoenix Study."

Our denial authority, Charles J. Dunlap, Jr., Colonel, USAF, Staff Judge Advocate, is denying release of certain portions of the requested document. See the annotations along the right margins. The annotations "b1;" and "b5" refer to specific exemptions authorized by the Freedom of Information Act 5 U. S. C. 552, as explained below.

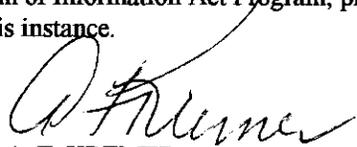
"b1;" 5 U.S.C. 552(b)(1). The information contained in the sentence or paragraph is properly and currently classified in the interest of national defense or foreign policy, as it **contains information concerning historical military plans and intelligence projections of the future target base**, and are specifically classified under the criteria established by Executive Order 12958, Section 1.5(a).

"b5;" 5 U.S.C. 552(b)(5). Internal advice, recommendations, and subjective evaluations, as contrasted with factual matters, that are reflected in records pertaining to the decision-making process of any agency, whether within or among agencies, or within or among DOD Components.

Should you decide to appeal this decision, you must write to the Assistant to the Secretary of Defense (Public Affairs) within 30 days of the date of this letter. Include any reasons for reconsideration you wish to present, and attach a copy of this letter. Address your letter as follows:

**Assistant to the Secretary of Defense (Public Affairs)**  
**THRU: USSTRATCOM/J0734**  
**901 SAC BLVD STE 1E5**  
**OFFUTT AFB NE 68113-6073**

Department of Defense Directive 5400.7-R, DOD Freedom of Information Act Program, provides we assess fees for processing FOIA requests. However, we waive fees in this instance.

  
A. F. KREMER  
Command FOIA Manager  
Office of the Chief, Information Management

Attachment: The Phoenix Study