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CIA/SR/77-10058JX

April 22, 1977

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MEMORANDUM

SUBJECT: Soviet Strategic Offensive Systems

1. This memo will briefly address significant developments and trends of Soviet strategic offensive forces during the first quarter of 1977.

ICBMs

2. Silo preparations for the new generation of ICBMs continued, as did dismantling of launchers for older ICBMs. Work is nearing completion on three support bases for the first deployment of a mobile strategic missile system -- probably the SS-X-20 IRBM.

3. The Soviets continued to dismantle SS-7 and SS-8 launchers. All SS-8s are now either dismantled or being dismantled.

4. No significant SS-11 activity was noted this quarter. The Soviets last year completed a program begun in 1973 to modernize 420 SS-11 silos at six ICBM complexes. The SS-11 Mod 2 and Mod 3 are installed in these silos.

5. No firings of the SS-11 Mod 4 occurred during the quarter. This variant could be operational later this year. The Mod 4 uses the same booster as the SS-11 Mod 2 and Mod 3

6.

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7. Recent analysis suggests that some SS-X-16 missiles have been delivered to the Strategic Rocket Forces and have been available for deployment since at least mid-1976. Development of the SS-X-16 was essentially complete by the end of 1975. We cannot confirm any deployment and it is possible that the Soviets are stockpiling the system. Evidence indicates that the Soviets are continuing to produce both the original and a modified version of the SS-X-16. There were no flight tests of either variant this quarter.

8.

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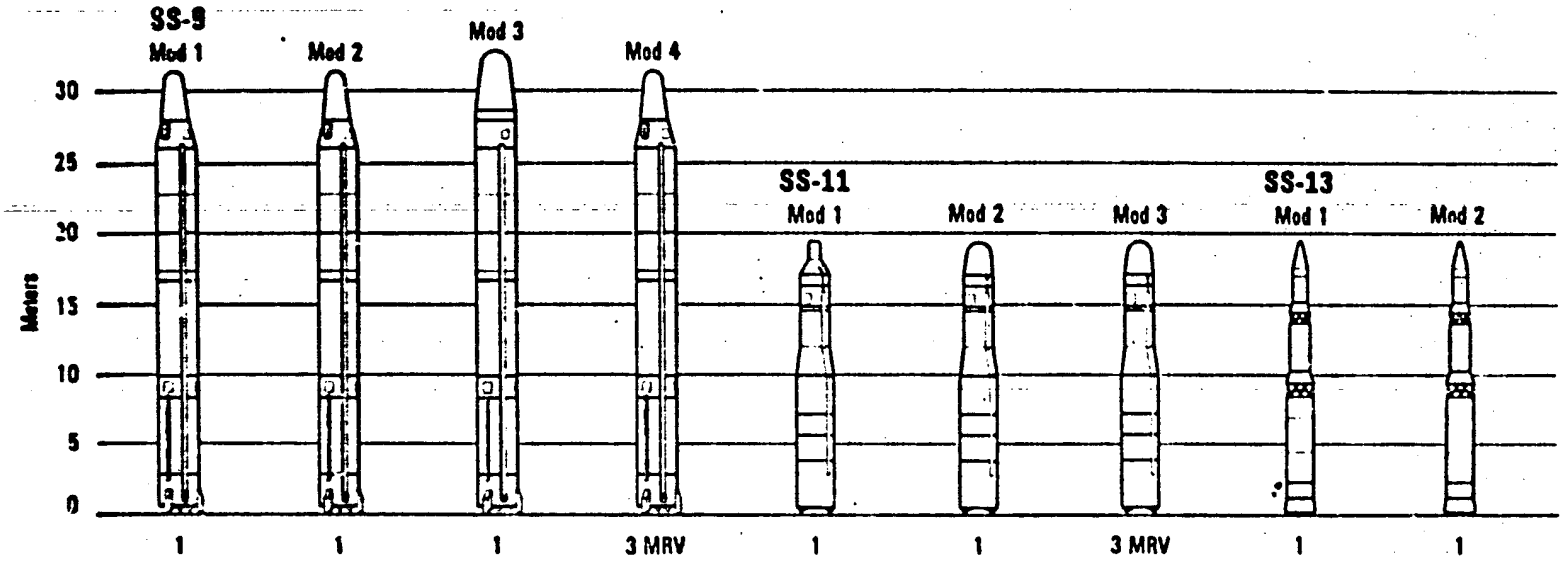
10. The SS-17 Mod 2 was not test fired this quarter. The Mod 2 is probably ready for the field now. This variant carries a single reentry vehicle on a highly modified postboost vehicle, but it uses the same booster as the MIRVed SS-17.

11. The Soviets continued to convert SS-9 silos for the new SS-18 ICBM. The SS-18 Mod 2 was tested twice this quarter. There are now 80 operational SS-18 launchers, 36 of which are believed to contain the Mod 1. The others probably contain a mix of the Mod 1, Mod 2, and Mod 3. The Soviets are expected by the end of 1980 to field 308 SS-18s, most of which we believe will be the MIRVed Mod 2s.

Third Generation ICBMs



RVs	1	1	1	3 MRV	1	1	3 MRV	1	1
Operational mode	Single silo	Single silo	Single silo	Single silo	Single Silo	Single silo	Single silo	Single silo	Single silo
Year operational	1967	1968	1969	1971	1966	1973	1973	1969	1972

*This estimate is for the depressed trajectory ICBM (DICBM) mode.
The estimate for the fractional orbit bombardment system (FOBS) mode is 1.5-3.0 nm.

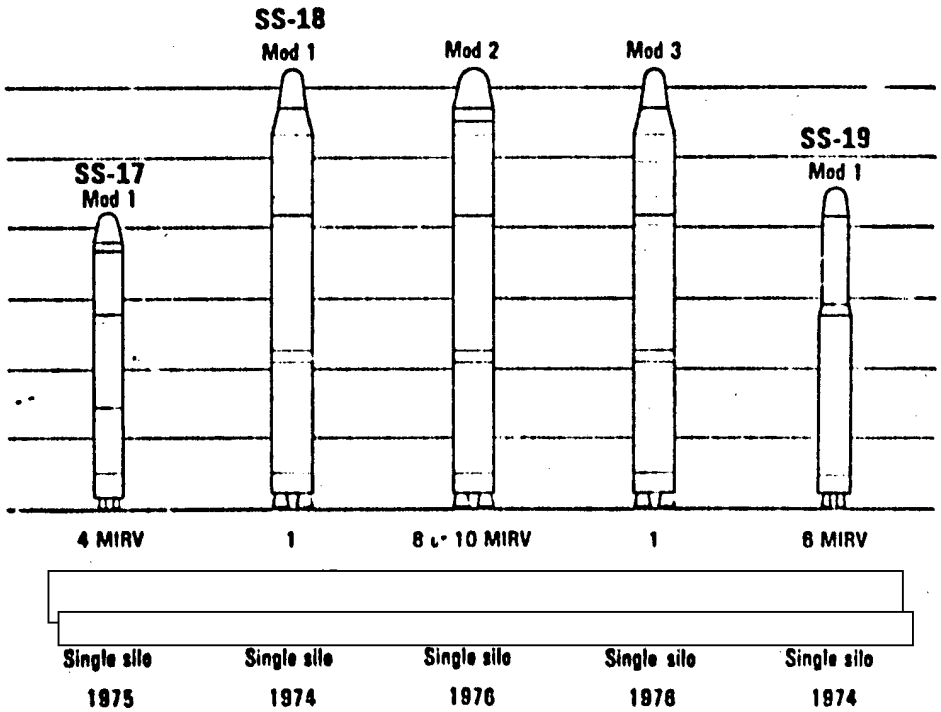
ICBM Launchers

	Jan 1977		Apr 1977		End 1977	
	Operational	In Preparation	Operational	In Preparation	Operational	In Preparation
Above-ground						
SS-7	32		32			
Silo						
SS-7	45		45		18	
SS-9	174		156		120	
SS-11*	840		820		740	
SS-13	60		60		60	
SS-17	40	10	50	20	70	30
SS-18	80	54	80	72	134	54
SS-19	90	50	90	50	140	50
Subtotal	1,361	114	1,333	142	1,282	134
SS-9s (believed to be operational at Tyuratam)	18		18		18	
Total	1,379	114	1,351	142	1,300	134

*Includes the 120 SS-19-type silos at Derazhnya and Pervomaysk believed to contain SS-11: A new assessment of 120 vs 60 was made in February and, at that time, January's figures were adjusted accordingly.

This table does not include those SS-7 and SS-8 launchers that are in the process of being dismantled.

Fourth Generation ICBMs



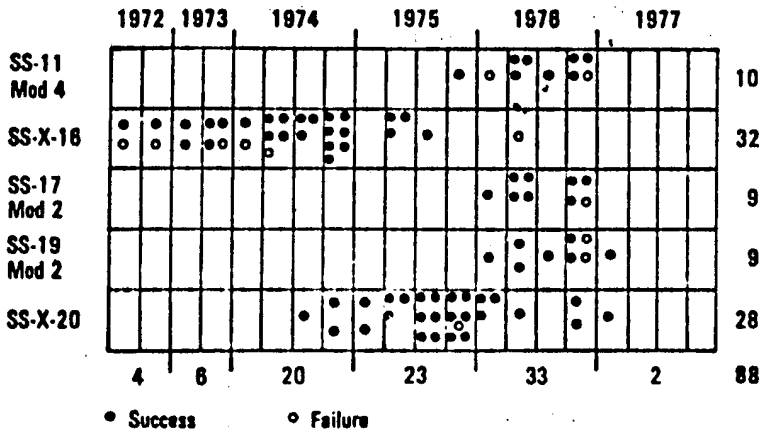
12. The Soviets continued to convert SS-11 silos to the new, more survivable SS-19 configuration.

13. The SS-19 Mod 2 was tested once -- successfully -- during the quarter. The Mod 2 carries a single reentry vehicle on a postboost vehicle similar to the Mod 1. It will probably be available for deployment later this year.

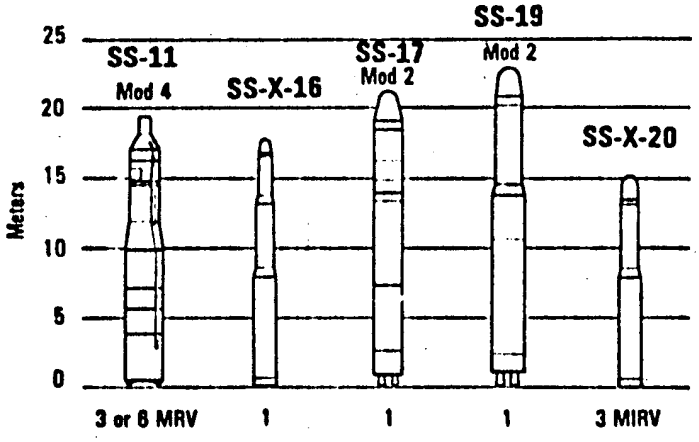
14.

15. The mobile SS-X-20 IRBM was fired once this quarter. This solid-propellant missile -- a two-stage version of the SS-X-16 -- has a demonstrated range of 2,200 nautical miles and carries a MIRV system with three warheads. Series production of the SS-X-20 appears well under way and the Soviets should begin fielding it later this year. By early-to-mid 1980, the MIRVed SS-X-20 will probably have replaced most of the current force of some 570 SS-4 MRBMs and SS-5 IRBMs, and may have assumed the mission of any ICBMs now targeted against peripheral areas.

Developmental Firings



Developmental Missiles Being Flight-Tested



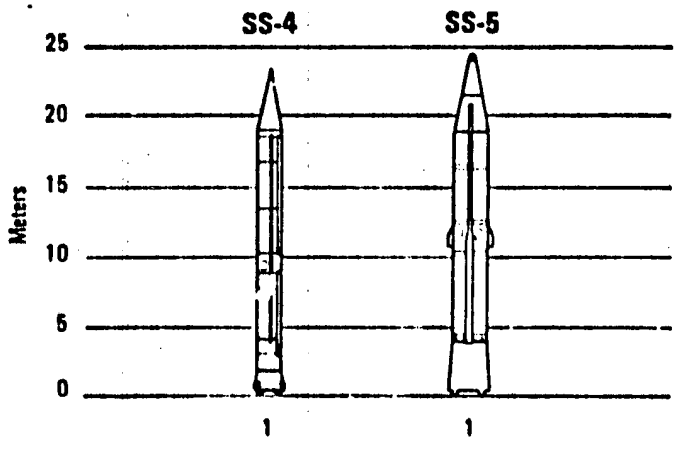
RVs	3 or 6 MRV	1	1	1	3 MIRV
Operational mode	Single silo	Single silo	Single silo	Single silo	Mobile
Year operational	1977	•	1977	1977	1977

*The Intelligence Community is uncertain whether the current version of the SS-X-16 will be deployed.

MRBM and IRBM Launchers

	Jan 1977	Apr 1977	End 1977
Aboveground			
SS-4	408	408	396
SS-5	42	42	42
Subtotal	450	450	438
Silo			
SS-4	76	76	76
SS-5	45	45	45
Subtotal	121	121	121
Mobile			
SS-X-20	0	0	30
Total	571	571	589

MRBMs and IRBMs



Operational mode	Soft pads or quadruple silos	Soft pads or triple silos
Year operational	1959	1961

SLBMs

16. The Soviets launched their fifth D-III ballistic missile submarine -- their newest submarine class -- preparations under way for launch of the sixth. The SS-NX-18 missile will probably be available for deployment in the near future.

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20. Ballistic missile submarine patrols were at a normal level during the quarter.

coast. At least one D-class unit was always on patrol [redacted] There is good evidence that two D-class submarines in the Northern Fleet are now kept on continuous patrol, but this cannot be confirmed. There were no D-class patrols in the Atlantic. In the Pacific, we identified one D-class patrol lasting about a month and a half. The Soviets probably have begun regular D-class patrols in the Pacific, but these apparently are not yet continuous like those in the Northern Fleet.

21. The SS-NX-17 was not tested during the quarter. To date, the missile has been tested with only a single reentry vehicle. The two-stage, solid-propellant SS-NX-17 carries a postboost vehicle, however, and it may eventually be tested with MIRVs. It has an estimated maximum range of 1,700 nautical miles.

[redacted]

next.

23. No flight tests of the SS-NX-18 were detected during the quarter. Both the single-warhead and MIRVed versions of the SS-NX-18 have been launched from the D-III submarine. The two-stage, liquid propellant SS-NX-18 has an estimated range of 4,900 nautical miles for the single-warhead version and 3,900 for the MIRVed version. This system will probably be available for deployment in the near future.

Ballistic Missile Submarines and Launchers

Operational or on Sea Trials

	Jan 1977	Apr 1977	End 1977
Submarines			
Y-class	34	34	34
D-I class	15	15	17
D-II class	4	4	4
D-III class	4	4	7
Subtotal*	57	57	62
G-class	20	20	20
H-class	8	8	8
Total	**85**	**85**	**90**
SLBM Launchers			
SS-N-5	21	21	21
SS-N-6	532	532	532
SS-N-8	256	256	280
SS-NX-17**	12	12	12
SS-NX-18	64	64	112
Subtotal*	885	885	957
SS-N-4	15	15	15
SS-N-5	39	39	39
Total	**939**	**939**	**1,011**

*These subtotals include only those submarines and launch tubes counted under the Interim Agreement, which expires in October 1977. Although eight Y-class and two G class submarines converted for modern missiles do not count against the Interim Agreement limit of 62 modern SSBNs, the 21 SS-N-5, 4 SS-N-6, and 12 SS-N-8 launchers in these submarines are subject to the limit of 950 on submarine-launched ballistic missiles.

**These 12 SS-NX-17 launchers are on the Y-class submarine that was previously equipped with 16 SS-N-8 launchers.

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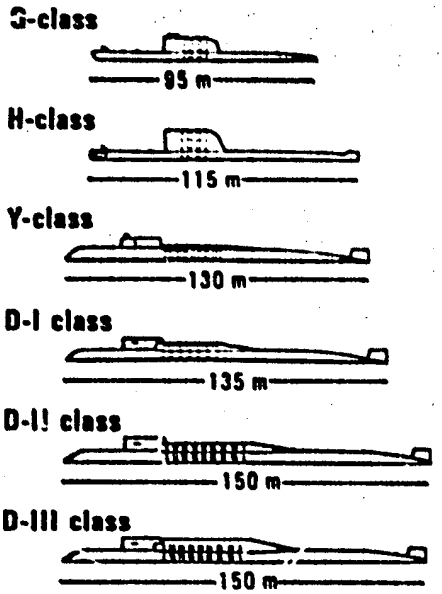
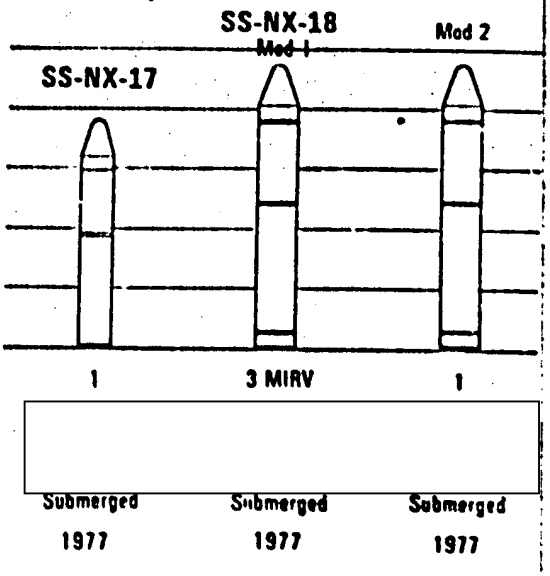
Submarines



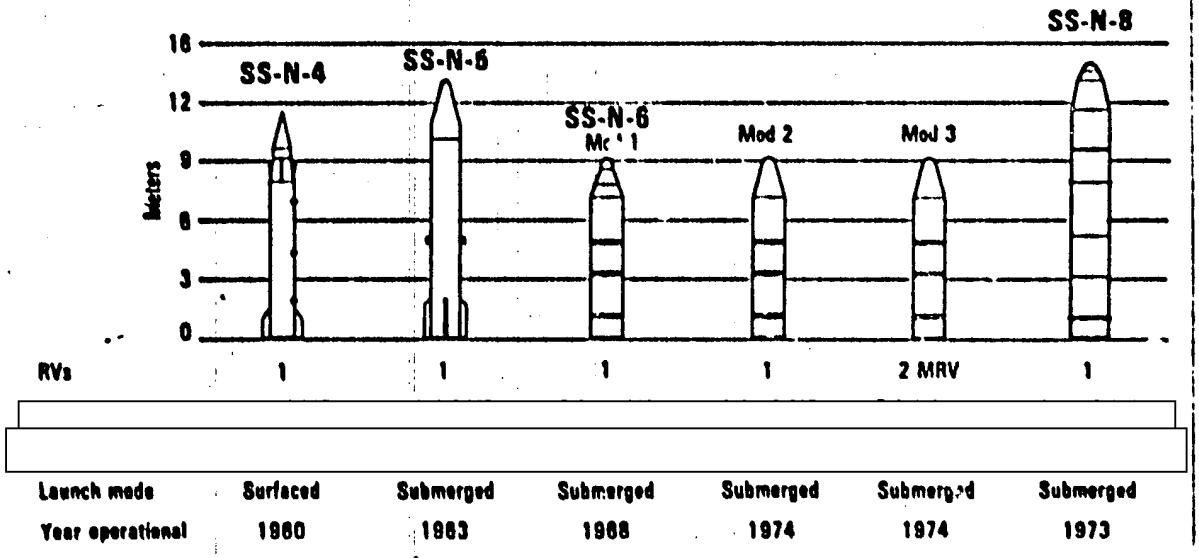
Year operational	Propulsion	Missile
1960	Diesel	3 SS-N-4 (300 nm) or 3 SS-N-5 (700 nm)
1960	Nuclear	3 SS-N-5 (700 nm)
1968	Nuclear	16 SS-N-8 (1,300-1,800 nm)
1973	Nuclear	12 SS-N-8 (4,200-4,900 nm)
1975	Nuclear	16 SS-N-8 (4,200-4,900 nm)
1977	Nuclear	16 SS-NX-18 (4,000-4,600 nm)

Note: One H-class and one G-class submarine have been modified to carry six SS-N-8 missiles. A G-class has also been modified to carry four SS-N-8 missiles.

Developmental SLBMs



SLBMs



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Bombers

24. There were no significant changes in the status of Long Range Aviation and Naval Aviation. Some 25 Backfires are now assigned to two Long Range Aviation bases -- one operational and one training -- and about 25 more to three Naval Aviation bases -- two operational and one training. All of these bases are in the western USSR.

25. [redacted] indicates that Backfires from the Long Range Aviation regiment at Poltava practiced supersonic dashes for the first time and that at least one aircraft was equipped with an air-to-surface missile that was partly submerged in the bomb bay. Previously, the only Backfire known to be equipped with an air-to-surface missile under the fuselage was assigned to a Soviet Naval Aviation unit. It is possible that there are two Backfire strike variants in both Long Range and Naval Aviation -- one that could carry up to three missiles, and another with two missiles and a bombload.

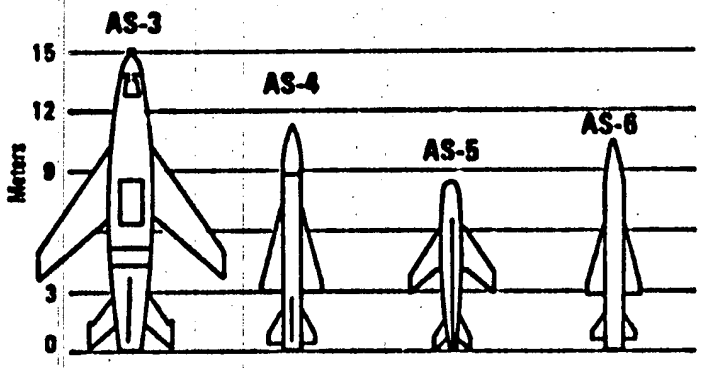
Bombers

	Jan 1977	Apr 1977	End 1977
Long-Range Bombers			
M-type Bison	85	85	85
TU-95 Bear	105	105	105
Total	190	190	190
Intermediate-Range Bombers			
TU-16 Badger	475	475	470
TU-22 Blinder	150	150	150
Total	625	625	620
Backfire*	25	25	40
Total	25	25	40

This table includes 35 to 45 Bisons that are configured as tankers but probably could be converted to bombers. It also includes 35 to 45 Badgers and 9 Backfires that are used as trainers but are capable of conducting operational missions. The totals do not include about 600 bomber-type aircraft assigned to the navy in strike, reconnaissance, and training roles.

*There are an additional 25 Backfire bombers assigned to Naval Aviation.
The Backfire has extensive capability for use in various missions in Eurasia and for naval missions over the open seas. There are differing views within the Intelligence Community about the capability of the Backfire for operations against the continental US and about Soviet intentions to use it for this purpose. For this reason, the Backfire is listed separately.

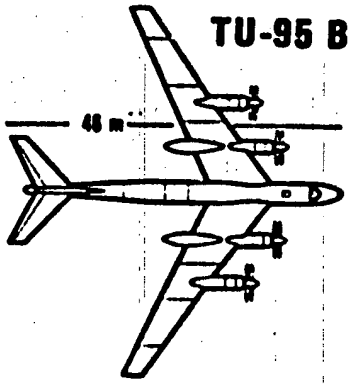
Air-to-Surface Missiles



Maximum range	350 nm	250 nm	125 nm	300 nm
Maximum speed	1,040 kts	2,030 kts	695 kts	1,740 kts
Year operational	1960	1967	1965	1970

Long-Range Bombers

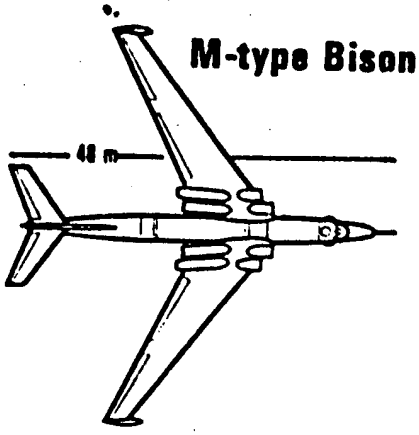
TU-95 Bear



Combat radius (at 435 kts)	3,950 nm with ASMs 4,150 nm with bombs
Max. speed	500 kts
Year operational	1956

About two-thirds of the TU-95s carry the AS-3 ASM.

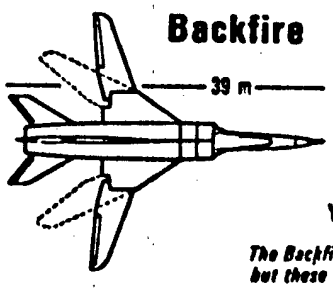
M-type Bison



Combat radius (at 445 kts)	2,800 nm with bombs
Max speed	545 kts
Year operational	1956

None is equipped to carry missiles.

Backfire

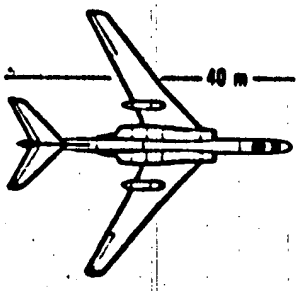


Range	3,500-4,150 nm
Radius	1,800-2,150 nm
Max speed	1,050 kts
Year operational	1974

The Backfire can carry two, possibly three, AS-4 ASMs but these would significantly reduce its radius and range.

Intermediate-Range Bombers

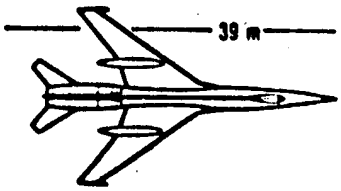
TU-16 Badger



Combat radius (at 445 kts)	1,200 nm with ASMs 1,650 nm with bombs
Max speed	540 kts
Year operational	1954

About 220 TU-16s are equipped to carry two AS-5 or two AS-6 ASMs.

TU-22 Blinder



Combat radius (at 515 kts)	1,450 nm with ASMs 1,750 nm with bombs
Max speed	1,030 kts
Year operational	1962

About 75 TU-22s are equipped to carry an AS-4 ASM.