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Joint Memorandum

Warsaw Pact Tactical Nuclear Forces in Central Europe

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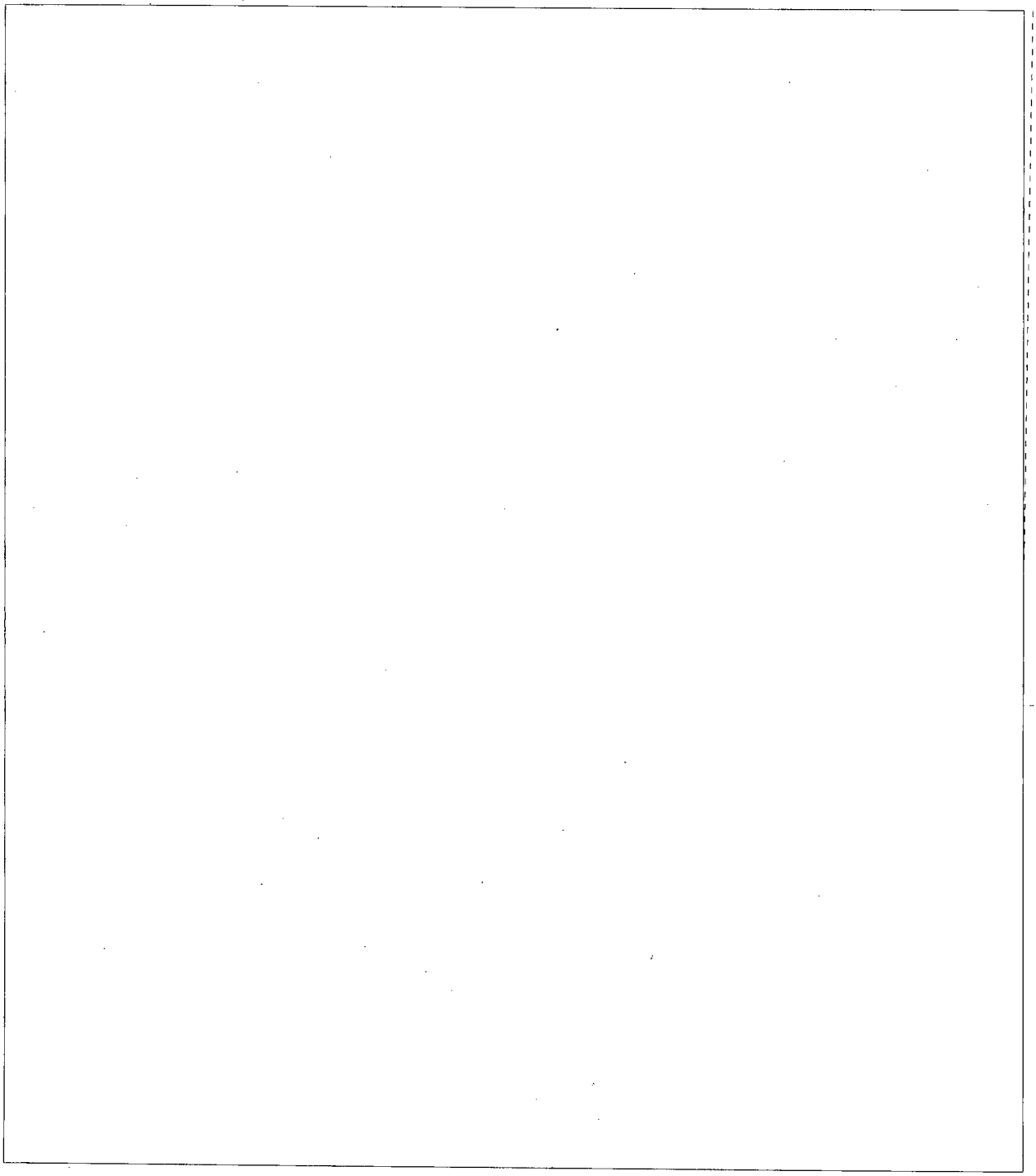

HR70-14

Warsaw Pact Tactical Nuclear Forces in Central Europe

Summary

Since the late sixties the Soviets have upgraded their tactical nuclear forces in Central Europe in an ongoing effort to broaden their range of nuclear options.

— The number of forward-based tactical air units estimated to be capable of delivering nuclear weapons has more than doubled.

— The number of launchers in most ground force tactical missile units has increased by some 25 percent.

The Soviets continue to rely on USSR-based MRBMs, IRBMs, and bombers for strikes against important European targets that are beyond the ranges of most of their tactical systems. The improvements in the tactical nuclear forces in Central Europe, however,

suggest that the Soviets may be interested in a sanctuary option for the territory of the USSR.

Numerically, the most important Warsaw Pact delivery systems in Europe are tactical aircraft. In East Germany, Poland, and Czechoslovakia—the Pact countries in the MBFR "reduction area"—about 720 aircraft are in units assessed as probably having a nuclear mission. Only about 300 of the pilots in these units are qualified for such missions, however. Some 1,600 other aircraft in these three countries are considered technically capable of delivering nuclear weapons, but there is little or no evidence that they are intended for this role.

Pact ground forces in the reduction area have two nuclear delivery systems—the FROG rocket, with a range of 40 nautical miles, and the Scud missile, which has a range of about 160 nm. There are some 200 FROG launchers and about 190 Scud launchers in the area. Pact field artillery is not believed to have been equipped with nuclear rounds.

Ongoing and expected programs to upgrade Soviet forward-based nuclear delivery capabilities will result in significant qualitative improvements but are not expected to increase significantly the total ground and air forces in the reduction area.

— One or more new missiles now under development probably are intended to replace some FROG and Scud launchers on a one-for-one basis over the next few years.

— The nuclear delivery capability of tactical air forces will improve during the seventies as new, longer range aircraft replace older models and more pilots become qualified for nuclear missions.

CENTRAL INTELLIGENCE AGENCY
DEFENSE INTELLIGENCE AGENCY
March 1975

JOINT MEMORANDUM

Warsaw Pact Tactical Nuclear Forces in Central Europe

Preface

There is an increased likelihood that during future negotiations on mutual and balanced force reductions specific options will be raised which will treat in one way or another the tactical nuclear forces in the Central European reduction area.* This memorandum was prepared jointly by CIA and DIA to provide for those involved in the deliberations a brief overview of the composition and capabilities of Warsaw Pact tactical nuclear forces. It is not intended to break new analytical ground but rather to summarize the latest estimates of Pact tactical nuclear capabilities and to describe the nature of the evidence and uncertainties which underlie these estimates.

* *Reduction area* is a term used in MBFR talks to denote the geographical area in which reductions of both stationed and indigenous forces are being negotiated. This area encompasses the FRG and the Benelux countries on the NATO side and the GDR, Poland, and Czechoslovakia on the Warsaw Pact side.

This memorandum was prepared in the Office of Strategic Research, CIA, and in the Directorate for Intelligence, DIA. Comments and queries may be directed to

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Tables

Illustrations

[redacted]

Composition and Capabilities

Warsaw Pact tactical nuclear forces in the MBFR reduction area basically reflect Soviet military planning of the late fifties and the sixties, the principal elements of which were:

-- Use of nuclear weapons in a war in Europe was viewed as linked or leading inevitably to strategic nuclear war.

-- The primary forces for nuclear operations in Europe, particularly for strikes in the depth of the theater, were USSR-based medium- and intermediate-range ballistic missiles and bombers. There is evidence, for example, that as late as 1970 Soviet military planning called for up to 90 percent of the nuclear strikes in the initial nuclear attack of a European conflict to be delivered by strategic systems based in the USSR.

-- Tactical nuclear weapons were regarded mainly as an adjunct to the strategic peripheral strike forces--to provide battlefield strikes in direct support of the individual armies and fronts.*

Pact tactical nuclear delivery systems in the reduction area, therefore, generally have considerably shorter effective strike ranges than NATO systems. Pact fighter-bombers, for example, originally were designed as interceptors and later adapted to the nuclear strike role. As a result, most of these aircraft do not have the capability to strike targets deep in the NATO rear.

Until recently, the bulk of the Pact's tactical nuclear firepower consisted of short-range ground

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* In Warsaw Pact terminology, a front is a wartime formation usually consisting of several field armies and a tactical air army plus combat and service support units.

force missiles. Nuclear-capable tactical aircraft in Eastern Europe were intended primarily to complement the ground force missile systems by engaging targets requiring quick reaction--such as enemy mobile missile launchers--and striking targets beyond the ranges of the tactical missiles. Most of the aircraft were also short ranged, however, and there is evidence that the Soviets did not consider any of their forward-based tactical systems capable of delivering strikes against targets deep in enemy territory. There is clear evidence, for example, that at least until the recent introduction of new models, Pact planners considered most NATO airfields in West Germany to be beyond the range of their tactical aircraft.

In the late sixties the Soviets began to implement some significant changes to improve the overall capabilities of their forward-based nuclear forces. These programs, which are still under way, will reduce the necessary dependence on USSR-based nuclear systems and thereby provide some flexibility for confining a nuclear conflict to the European theater.

-- The number of forward-based tactical air units equipped and trained for nuclear delivery missions has doubled since about 1969 as additional pilots--particularly in units equipped with late-model MIG-21 and MIG-23 aircraft--have been qualified for such missions. This has been accompanied by a much greater emphasis on the role of tactical aircraft in Pact theater nuclear planning. The latest model aircraft now being deployed with Soviet units in the USSR and Central Europe have considerably improved range and penetration capabilities over older Soviet tactical aircraft and would be able to strike targets throughout NATO Europe even from bases in the USSR.

-- The numbers of launchers in both FROG and Scud units have been increased by some 25 percent in most Soviet and some non-Soviet Warsaw Pact (NSWP) units.

[redacted]

[redacted]

[redacted] the Soviets may be interested in a sanctuary option for the territory of the USSR. Despite improvements, however, most Pact tactical delivery systems are still limited by range. Strategic missile and bomber systems will therefore continue to play a key role in Soviet theater nuclear strike planning at least until the late seventies, when longer range tactical systems--such as a new swing-wing fighter-bomber now entering service (Fencer A) and a new missile [redacted] become available in sufficient numbers.

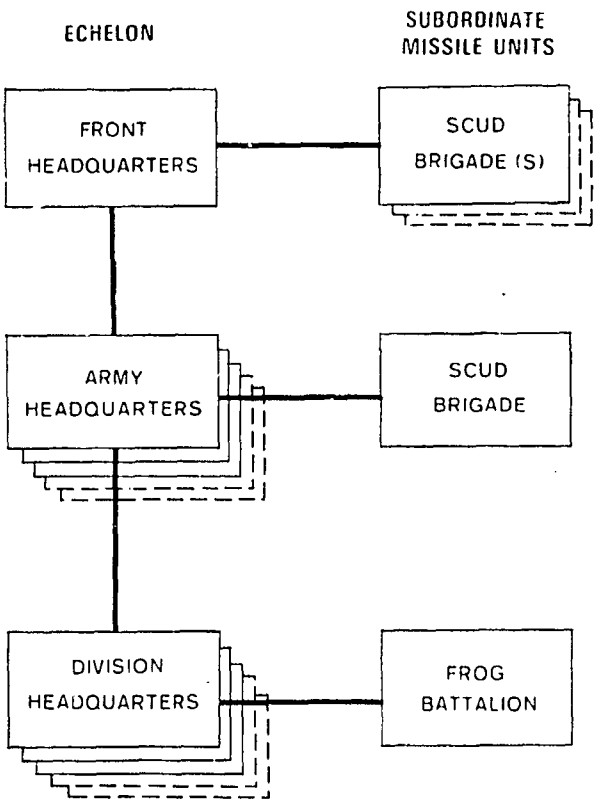
Ground Systems

FROG and Scud missiles are the only nuclear delivery systems known to be held by Warsaw Pact ground forces in the reduction area. The FROG, with a range of 40 nm (70 km), is a divisional weapon--a battalion of three or four launchers being organic to each division. The Scud missile, with a range of about 160 nm (300 km), is found at the army and front echelons. Normally, one Scud brigade is subordinate to the headquarters of an army, and at least one brigade is available for each wartime front headquarters. *(See chart, page 6.)* The headquarters of the Group of Soviet Forces, Germany, which would command the largest of the wartime fronts, has three Scud brigades. The number of launchers per Scud brigade varies; Soviet brigades in the reduction area have 9 to 12 launchers, and East European brigades, 6 to 9.

In all, the Warsaw Pact is estimated to have 57 FROG battalions with some 200 launchers and 18 or 19* Scud brigades with as many as 190 launchers in the

* One recently formed East German Scud brigade may not yet have reached full operational status.

Subordination of Nuclear Delivery Systems in Warsaw Pact Ground Forces

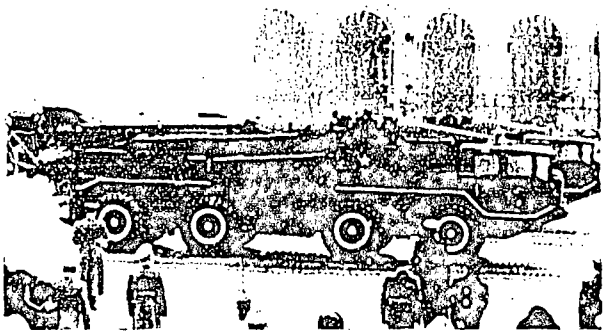


In wartime, each front headquarters would have one or more Scud brigades. There are five Scud brigades in the MBFR reduction area that would be subordinate to the three fronts—Soviet, Polish, and Czechoslovak—that probably would be formed there.

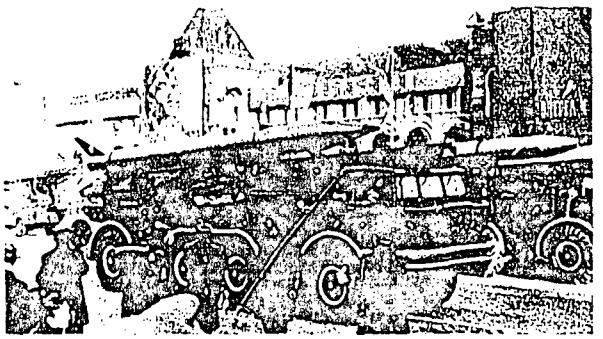
In the reduction area there are 13 or 14 Scud brigades subordinate to the Soviet and East European army headquarters and the two Soviet groups of forces in Poland and Czechoslovakia.

Each of the 56 Soviet and East European tank and motorized rifle divisions in the reduction area, as well as the Polish assault landing division, has a FROG battalion.

Scud B



FROG-7



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Warsaw Pact Tactical Missile Launchers in Reduction Area

	Scud	FROG
East Germany		
Soviet	96	80
East German	9-18 [a]	24
Poland		
Soviet	9	8 [c]
Polish	30-32 [b]	39-42
Czechoslovakia		
Soviet	9	20
Czech	27	30
Totals		
Soviet	114	108
East European	66-77	93-96
	180-191	201-204

a. East Germany recently began forming a second Scud brigade, which in all likelihood will also have nine launchers.

b. There is evidence that until recently the Poles had 24 Scud launchers in operational units--four brigades with six launchers each. They have, however, bought a number of later model Scud launchers from the Soviets over the past year or so, raising the number of launchers in at least three of the brigades to eight.

c. Polish organizational concepts call for each Polish division, with the exception of the airborne division, to have a battalion of three FROG launchers. Some of the divisions apparently do not yet have their full complement. It is clear, however, that the Poles intend to bring all the divisions up to this standard, and they may be testing a four-launcher battalion concept in one or two divisions.

reduction area. (A detailed breakdown of nuclear delivery systems by type and country is provided on page 7.)

Information on the numbers of FROG and Scud units is better and generally viewed with higher confidence than are estimates of the numbers of launchers.

-- There is considerable evidence that the nuclear missile units are organic to the ground forces in the structure shown in the chart on page 6.

-- Evidence supports our estimate that all active Warsaw Pact divisions in the reduction area--with the exception of the Polish airborne division--have a FROG battalion.

-- The subordination of Scud units does not appear to follow as consistent an organizational pattern as the divisional FROG battalions. Therefore, estimates of Scud brigades in the reduction area are made on an individual, unit-by-unit basis

The main uncertainty in estimates of Pact missile forces concerns the numbers of launchers in each FROG or Scud unit.

Current estimates are based on the following judgments:

-- The program to increase each Soviet and East German FROG battalion from three to four launchers has been completed.

-- Polish FROG battalions still generally have three launchers, and Czechoslovak, two to three launchers, although some battalions in both countries may recently have received a fourth launcher.

-- The eight Soviet Scud brigades in East Germany have each been increased from 9 to 12 launchers over the past several years; the other two Soviet brigades in the reduction area still have nine launchers but probably will also be enlarged; and indigenous brigades generally have from eight to nine launchers each.

Another nuclear missile system, the 500-nm Scaleboard, is held at military district level by Soviet ground forces in the USSR. This system probably is intended for front-level support in wartime. Thus far, however, there has been no evidence of Scaleboard deployment in Eastern Europe.

The Soviets are not believed to have deployed nuclear rounds for their currently operational tube artillery. They began a development program for nuclear tube artillery in the fifties and formulated tactical employment doctrine for these systems. After developing two super-caliber artillery pieces, in about 1960, they decided to deploy nuclear-capable FROG rockets instead. This decision probably was prompted by technical difficulties, better technical characteristics of the rocket systems, and competing requirements for fissionable material. At the same time, Soviet military doctrine was modified to reflect the deployment of FROGs rather than nuclear-capable artillery.

Since then, research, development, and testing of low-yield warheads for artillery probably have continued. The Soviets probably had developed prototype nuclear projectiles for medium-caliber artillery weapons by the mid-sixties and by the end of the

decade could have begun production had they chosen to do so. There is some evidence that the Soviets have nuclear rounds for the 152mm naval rifle on board some cruisers.

Air Systems

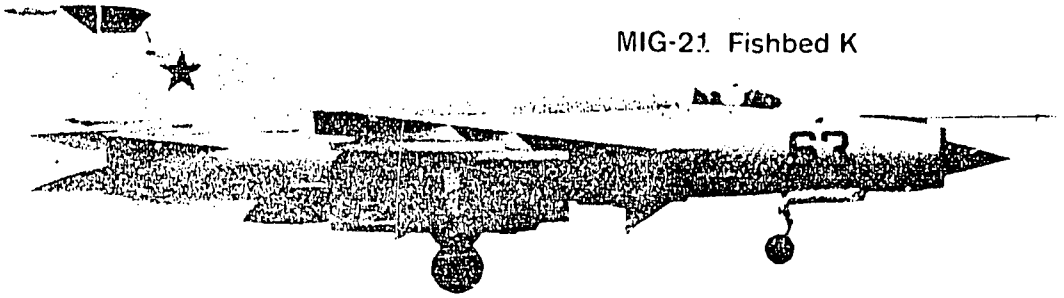
Estimating numbers of nuclear delivery aircraft is more complex than estimating numbers of ground force delivery systems because of the dual conventional-nuclear capability and role of tactical aircraft. While aircraft can be generally classified as "nuclear-capable" on the basis of performance characteristics, this group would include nearly all modern combat aircraft--not all of which are intended for use in a nuclear role.

There is no information available which specifies the aircraft or combat units "dedicated" to nuclear operations in Pact war plans. Nor is there evidence that all aircraft of any one model in Eastern Europe--even those that are known to have a nuclear delivery role--are uniformly equipped with special mechanisms for the delivery of nuclear weapons, or that such equipment is required as it is on Western nuclear delivery aircraft.

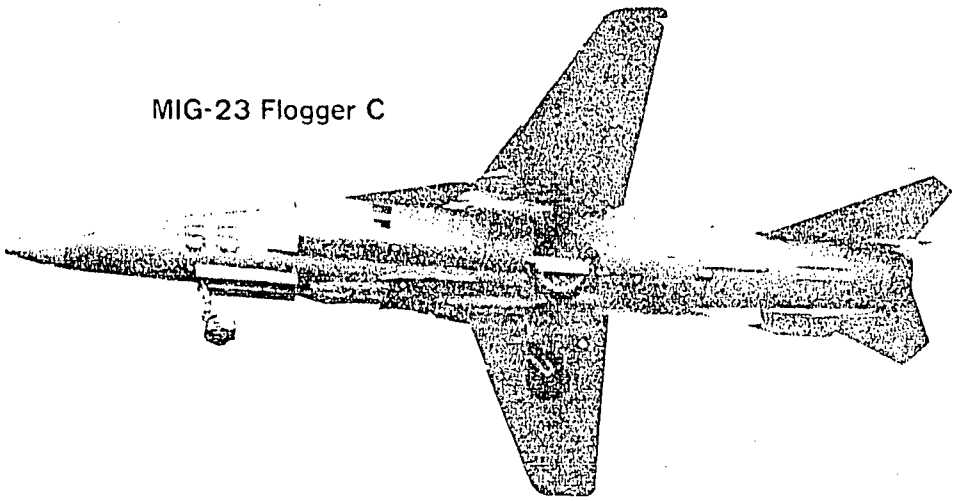
In addition to assessments of technical capability, therefore, our estimates of Pact nuclear delivery aircraft also take into account the role of the unit to which the aircraft are assigned, and any evidence from other reporting on Pact nuclear planning. On this basis,

Soviet Tactical Aircraft With Nuclear Strike Missions

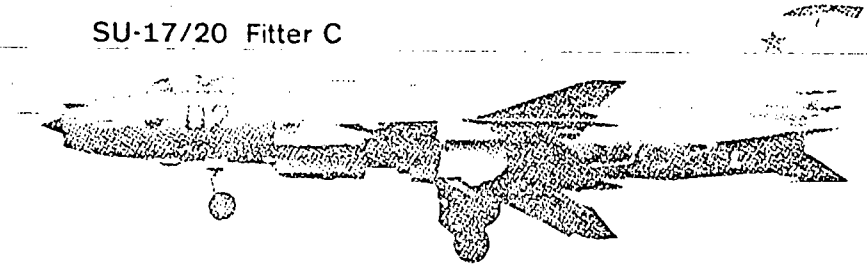
MIG-21 Fishbed K



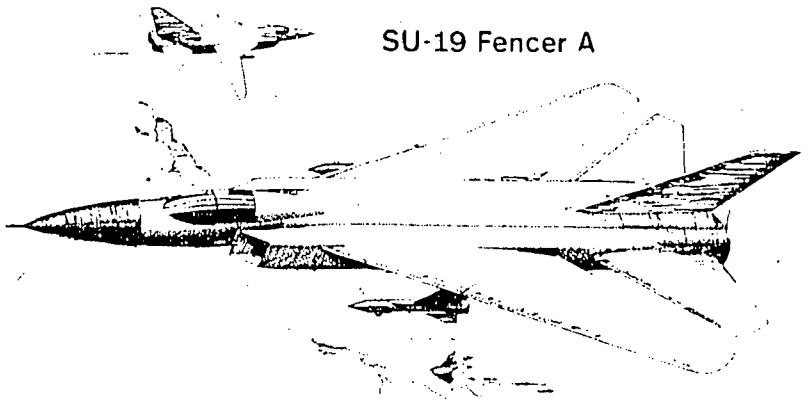
MIG-23 Flogger C



SU-17/20 Fitter C



SU-19 Fencer A



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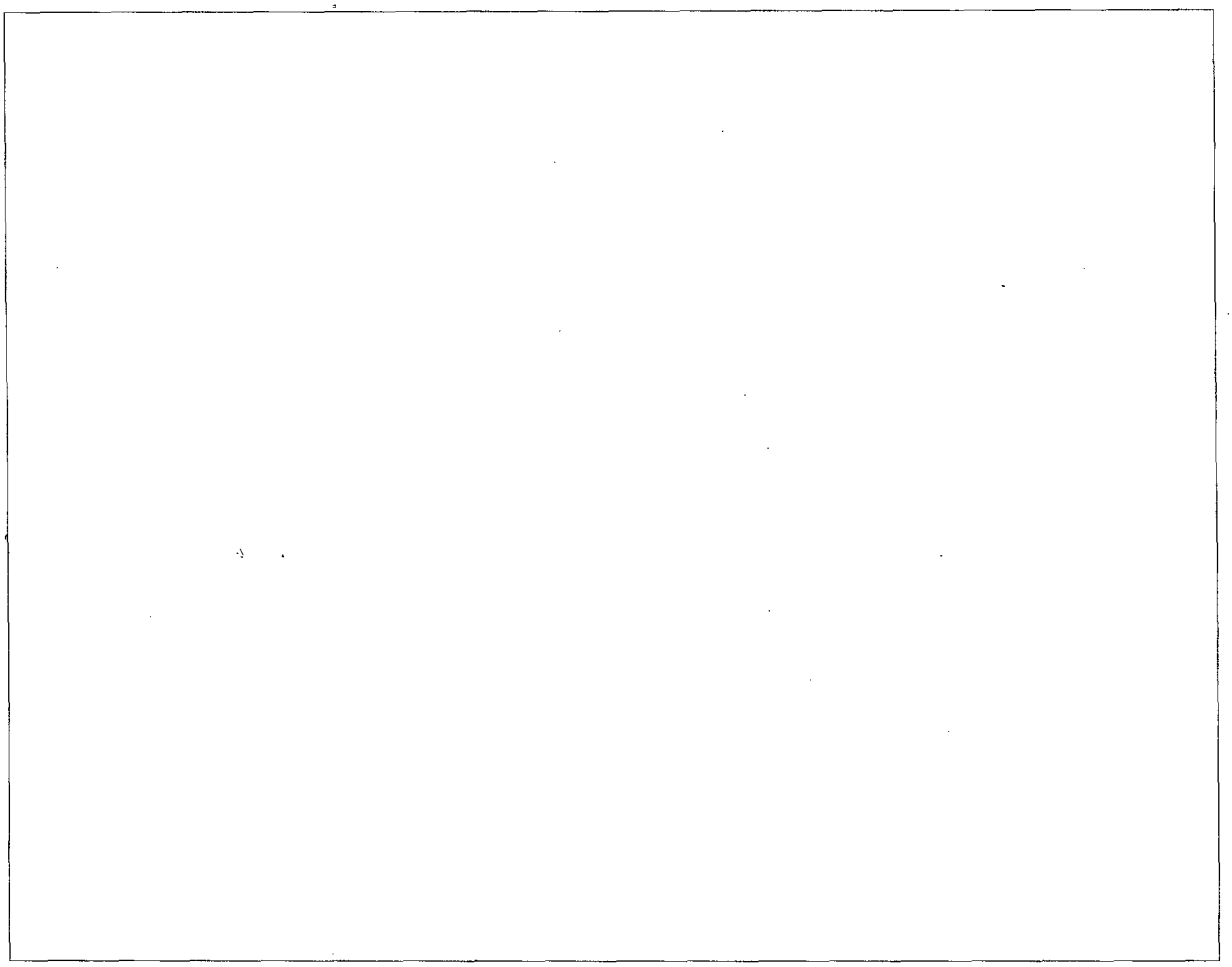
Pact aircraft that are technically capable of delivering nuclear weapons are categorized according to the probability of their having a nuclear mission, as follows:

Probable -- All aircraft (except trainers) having the technical capability for nuclear delivery and assigned to Soviet units assessed as having a nuclear delivery role [redacted] however, only about 300 of the pilots--usually those in the most proficient squadrons--are qualified [redacted]	720 (all Soviet)
Possible -- Aircraft of the same type as those in the "probable" category but assigned to East European ground attack units, those trainers deployed with Soviet units which probably have a nuclear role, plus Foxbat reconnaissance aircraft and Beagle bombers.	390 (130 Soviet, 260 NSWP)
Possible, but unlikely -- Older model aircraft never associated with nuclear operations, most reconnaissance aircraft, and late-model East European aircraft assigned to air defense units.	1,245 (240 Soviet, 1,005 NSWP)

There are some 110 East European aircraft--mainly SU-7s in ground attack regiments--which generally meet the criteria of the "probable" category but, because of uncertainties regarding control and availability of nuclear warheads, have been counted only as "possible."

Since the late sixties the number of tactical air units in Eastern Europe assessed as probably having nuclear missions has doubled as more pilots have been

qualified for such missions and new model MIG-21s--the Fishbed J, K, and L; the SU-17/20 Fitter C; and the MIG-23 Flogger have been delivered. The percentage increase was even greater than initially believed because earlier estimates of the nuclear delivery force, based solely on technical assessments of airframe capability, included older model MIG-21s which it now appears were never intended for a nuclear delivery role.



Possible Effects of Negotiated Force Reductions or Limitations

Future programs for continuing improvement of Soviet tactical nuclear capabilities probably will increase the number of nuclear delivery aircraft and nuclear-qualified pilots and will qualitatively improve the tactical missile forces. These programs are not expected to result in a significant increase of the total manpower, missiles, or aircraft in the reduction area, however.

-- The program to increase the number of launchers in Soviet tactical missile units is complete for the FROG units in the forward area and nearly complete for the Scud units. The number of launchers in most East European tactical missile units has not been increased, and it is not clear whether it will be.

-- Future changes in ground force delivery systems are likely to result from deployment of one or more new missiles [redacted] These are expected to replace existing FROG and Scud missiles, and are not likely to result in any significant increase in numbers of launchers.

-- Deployment of nuclear artillery rounds could provide a significant increase in the Pact tactical nuclear arsenal and would not be affected by restrictions on the numbers of missile launchers.

-- Increases in the proportion of nuclear delivery aircraft have taken place as part of an aircraft modernization program, and have not affected the overall number of Warsaw Pact aircraft in the reduction area. Future aircraft--whether intended for nuclear or conventional missions--will probably all be technically capable of nuclear delivery.

-- Insofar as the capabilities of Pact forward-based nuclear systems are concerned, the extended range and improved penetration capabilities provided by the Fitter C, MIG-23 Flogger, and the new Fencer A aircraft are considerably more important than any impact their deployment is likely to have on the overall number of nuclear delivery aircraft.

Without restrictions on qualitative improvement, therefore, even some reduction in overall numbers of delivery systems would have minimal effect on Soviet efforts to increase their forward-based nuclear delivery capabilities.