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DIRECTORATE OF
INTELLIGENCE

Intelligence Report

Airlift and Auxiliary Air Support for Soviet Military Forces

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Contents

Components of the Military Transport Forces

There are three categories of aircraft which provide transport for the Soviet military: Military Transport Aviation transports, Tactical Air Force helicopters, and transport aircraft and helicopters assigned in general support of major elements of the armed forces and other agencies. (Tables in Annex B show total numbers and major categories of transport aircraft and helicopters.)

Military Transport Aviation (VTA),* one of the major arms of the Soviet air forces, provides the main intertheater and long range airlift capability for the Soviet armed forces and the national government. One of its main missions is support of the airborne troops. VTA is organized into 6 divisions--with a total of 17 to 19 regiments--and 2 independent regiments. All are west of the Urals except for 1 division (with 2 regiments) and an independent regiment along the Sino-Soviet border. (The map on page 8 shows the disposition of VTA regiments.) Each regiment is equipped with 30 to 40 AN-12 Cub medium assault transports. (Table 4, Annex B, shows the number of aircraft assigned to VTA.)

Helicopters assigned to the Tactical Air Forces (TAF) have the primary missions of supporting front and theater forces with intratheater or short range airlift and of performing a variety of support tasks. (Table 5, Annex B, gives the number of tactical aviation helicopters in this role.)

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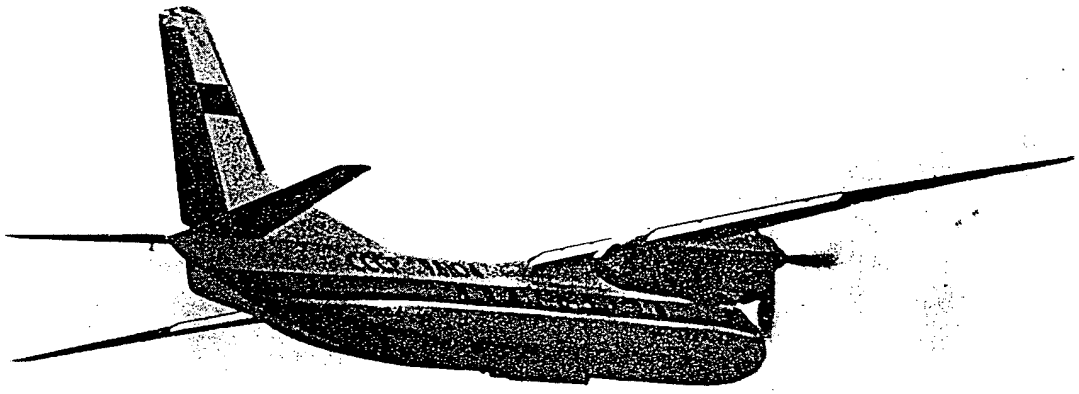
* *The term VTA is frequently used as the generic term for all Soviet military transports and helicopters but the term VTA in this report refers solely to the main force of transport aircraft.*

Soviet Military Transports



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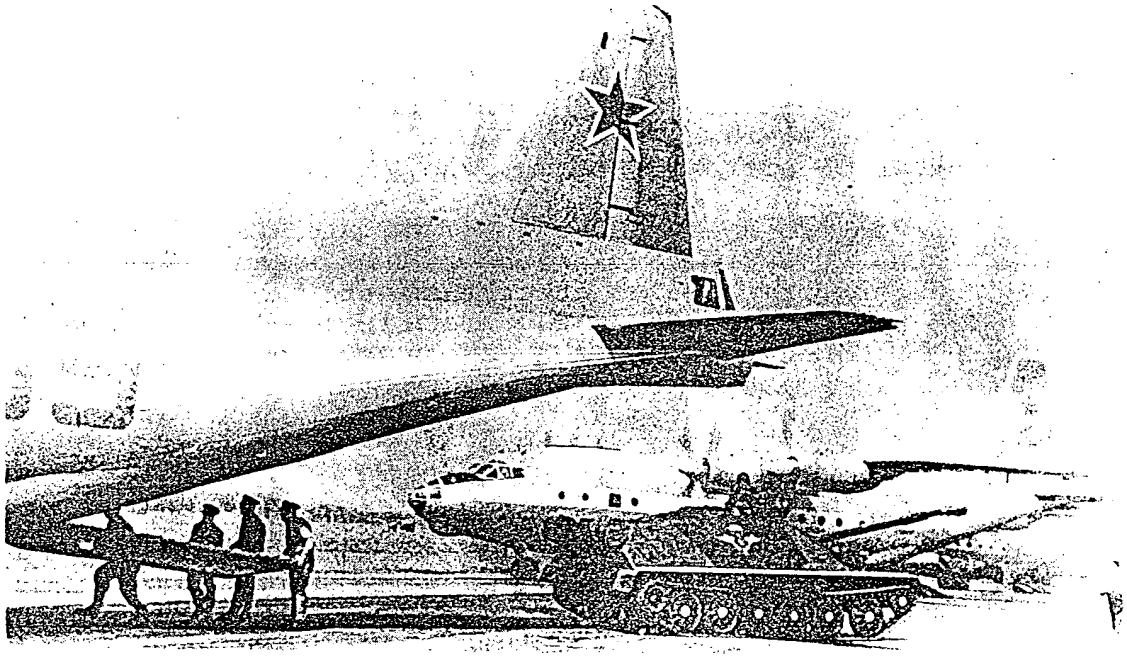
The AN-24 Coke is a light transport expected to be assigned in increasing numbers to Soviet military transport forces. Shown here is the civil passenger version. A new variant with full-width rear loading doors to facilitate loading and paradropping troops and light equipment will probably be the primary one in military service.



The AN-12 Cub medium assault transport is the backbone of the Soviet airlift forces. Equipped with rear loading doors, the AN-12 is capable of landing or airdropping both troops and equipment. The ASU-85 assault gun shown here must be landed, but the lighter ASU-57 can be airdropped.

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In addition, other transport aircraft and helicopters are assigned to and perform general support functions for TAF, Long Range Aviation, Air Defense, Strategic Rocket Forces, and the Ministry of Defense. A General Purpose Transport Unit (GPTU) based at Moscow and one at Khabarovsk serve the highest military authorities. Other units probably support special activities. (Table 6, Annex B, shows the number of transports and helicopters in general support.)

The Soviet civil air fleet--Aeroflot--constitutes a significant reserve adjunct to the military airlift capabilities. Aeroflot has about 1,300 active high performance (jet and turboprop) transports in the light, medium, and heavy categories, and some 900 light piston engine transports. In addition, as many as 2,000 helicopters--including transport and utility types--may be in civil use.

The light piston engine and turboprop transports together with helicopters would be a valuable asset during tactical operations involving the use of temporary airstrips. Many of the medium and all of the heavy transports would have to use airfields with longer and more durable runways. They could, for example, ferry troops and supplies to well-developed airfields and evacuate casualties.

Medium Transports

The most important component of the military airlift forces consist of the AN-12 medium transports of VTA.

There are now about 950 medium transports in military units, including about 800 AN-12s. About 725 of the AN-12s are assigned to VTA and the rest to the Ministry of Defense and the other major elements of the Soviet air forces such as TAF and Long Range Aviation. If the current rate of growth continues, by 1971 the total number of medium transports could reach some 1,000 aircraft, including about 850 AN-12s.

Table 1

Characteristics and Performance of Selected Soviet Transport Aircraft

Designation		Engines	Gross weight (lbs)	Cargo capacity (lbs)		Cabin dimensions a/ (ft)			Troop capacity		Range and radius (nm)		Average cruise speed (kts)
Soviet	Western			Basic	Maximum	Height	Width	Length	Troops	Paratroops	Basic cargo	Maximum cargo	
Heavy (over 25,000-lb payload)													
AN-22 b/	Cock	4 turboprop	550,000	99,000	176,000	14.4	14.4	88 c/	175	d/	5,100/2,820	2,800/1,800	360
Medium (10,000- to 25,000-lb payload)													
AN-12	Cub	4 turboprop											
AN-12	Version 1		119,000	21,060	35,000	7.9	9.8	44.3	91	60	1,980/970	480/170	335
AN-12A	Version 2		119,000	17,260	35,000	7.9	9.8	44.3	91	60	2,330/1,200	460/160	335
AN-12B	Version 3		123,500	17,385	44,100	7.9	9.8	47.6	91	60	2,860/1,490	210/80	335
AN-12B	Version 4		134,500	10,635	44,100	7.9	9.8	47.6	91	60	4,230/2,130	900/460	335
AN-12A	Version 5		134,500	16,835	44,100	7.9	9.8	44.3	91	60	3,560/1,850	910/480	335
AN-8	Camp	2 turboprop	88,000	15,900	27,750	9.4	10.4	40.0	75	60	2,650/1,440	800/440	285
Light (up to 10,000-lb payload)													
AN-24	Coke	2 turboprop	46,300	8,100	12,600	6.3	9.1	32.0	50	50	1,150/580	300/200	255
IL-14 e/	Crate	2 piston	36,300	4,750	8,100				18	18	1,600/720	500/210	130
IL-14M	Crate	2 piston	38,500	6,350	10,000				24	21	1,600/720	/200	130
LI-2	Cab	2 piston	25,300	3,300	6,600				25	25	1,200/530	345/135	130
AN-2 f/	Colt	1 piston	12,100	2,250	3,350				13	13	630/300	/90	100
AN-14 f/	Clod	2 piston	7,700	1,320	1,600				6	6	420/190	220/	95
YAK-12 f/	Creek	1 piston	3,500		660				3			410/200	100

Note: Performance shown is for cargo load. Troop and paratroop capacity is shown as an alternate load, but performance would differ. Categories (heavy, medium, and light) are based on normal payload, which is the load that can be carried with full internal fuel load at maximum takeoff weight.

a. Cargo versions described are those with large rear-loading doors, which permit loading of bulky items of equipment.
b. Soviet performance data. Believed to be exaggerated, and under operating conditions would be less than shown.
c. Length including rear door ramp is 108 feet.
d. Believed to be intended mainly for landing troops and equipment and possibly dropping heavy equipment and equipment operators.
e. The performance of the IL-12 Coach, not shown, is similar.
f. These are normally referred to as very light or small utility aircraft.

Airlift capabilities in the western USSR have expanded since 1967 through the probable addition of a fourth regiment to at least 1 of the 5 VTA divisions there, and the 2 medium transport regiments which provide the major airlift capabilities in the Soviet Far East probably are almost completely re-equipped with AN-12s.

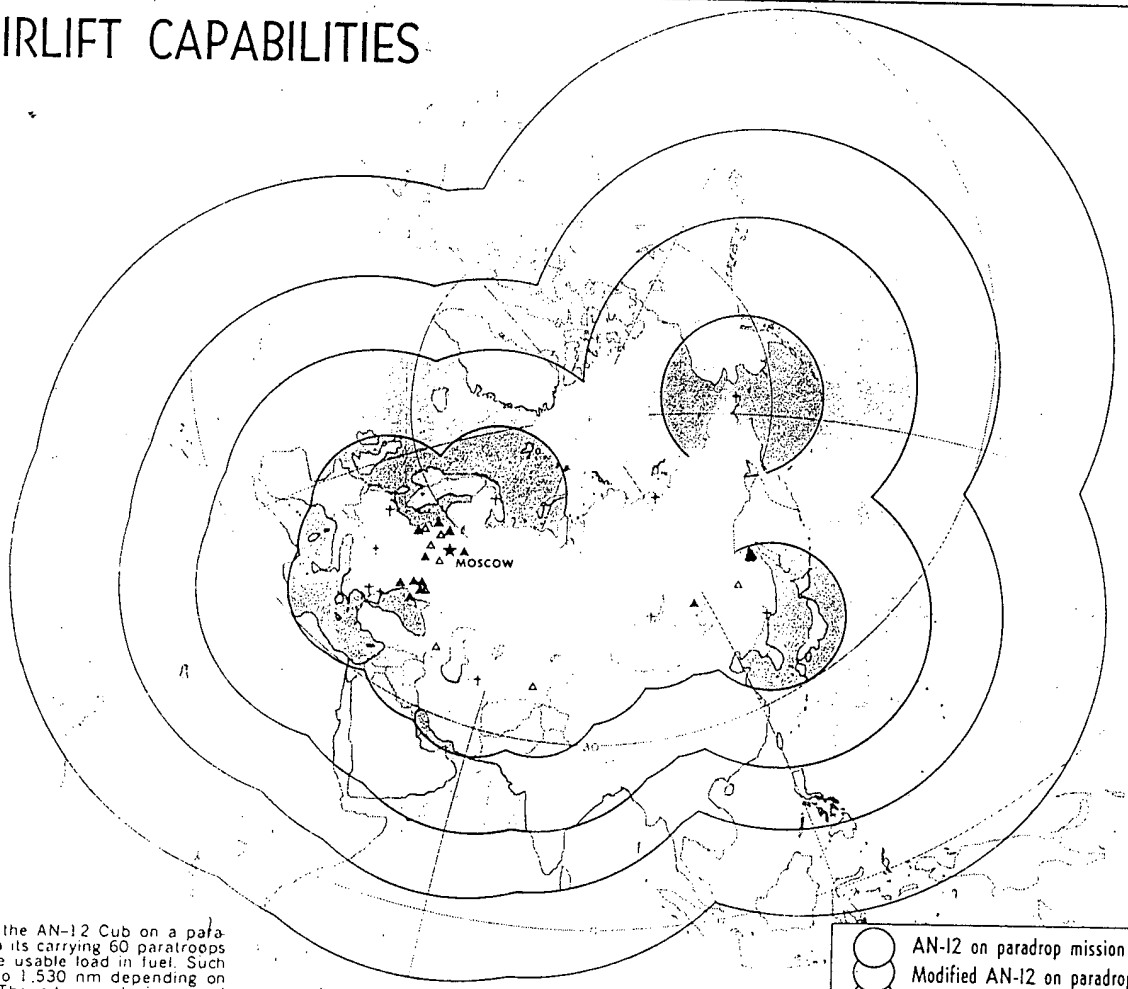
Requirements for heavy airlift capabilities have been increasing in the Soviet Far East as a result of the ground forces buildup on the Chinese border. The division there may be expanded to 3 or 4 regiments over the next year or two, making it comparable to divisions in the western USSR.

Other than the VTA AN-12 regiments, the only other known medium transport regiment is one in East Germany equipped with AN-8 Camp transports. This unit is subordinate to the Soviet tactical air army there and supports both Soviet air and ground force elements in Eastern Europe. The remaining medium transports (AN-12s, AN-8s, TU-104 Camels, AN-10 Cats, TU-124 Cookpots, and IL-18 Coots) which perform general support functions are assigned to transport units of varying size, many of which also include other categories of transports and helicopters.

Current Long Range Airlift Capabilities

The backbone of Soviet long range airlift is the VTA force of some 725 AN-12s. (See photo on page 4.) The missions this force can perform depend on the version of the AN-12 employed (5 versions exist, each with different range and payload capabilities--see Table 1 on page 6), the loading of the aircraft,

SOVIET AIRLIFT CAPABILITIES



AN-12 on paradrop mission to 760 nm radius*
Modified AN-12 on paradrop mission to 1,530 nm radius*
Modified AN-12 on basic cargo mission to 2,130 nm radius**
AN-22 on basic cargo mission to 2,820 nm radius***

▲ Regiment of Military Transport Aviation (VTA)
△ VTA regiment collocated with airborne division
+ Selected peripheral airfield

*The maximum radius of the AN-12 Cub on a paradrop mission is based on its carrying 60 paratroops and the remainder of the usable load in fuel. Such radius varies from 760 to 1,530 nm depending on the model of the aircraft. The radius can be increased by some 200 to 300 nm if the mission is flown at about 25,000 feet for reduced fuel consumption. Paratroops must wear oxygen masks at such altitude.

**The basic mission is accomplished with full internal fuel and the remainder of the usable load in payload. The radius, depending on which AN-12 variant is used, is from 970 nm with a payload of 21,060 pounds to 2,130 nm with a payload of 10,635 pounds.

***Soviet data indicate that the AN-22 Cock is capable of carrying 99,000 pounds to a radius of 2,820 nm, but this probably exaggerates its capability.

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the availability of aircraft, and the altitude at which the mission is flown.*

The 725 AN-12s of the main airlift force could, on a single mission, theoretically lift assault elements totaling some 10,000 men and supporting equipment for airdrop at a radius of about 800 to 1,000 nm.

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* *Cruising altitudes from 25,000 to 40,000 feet give the best fuel economy and thus the greatest range for AN-12 operations. Past assessments have generally concluded that AN-12s probably would not carry troops above 10,000 feet since the main cabin area is not pressurized and the use of oxygen masks results in excessive fatigue. A recent* Red Star *article, however, referred to paratroopers wearing oxygen masks to the drop zone.*

The British Institute of Aviation Medicine has stated that the maximum tolerable altitude for troops about to go into battle is 25,000 to 30,000 feet wearing oxygen masks, and that decompression sickness would have an increasingly detrimental effect on the troops above 25,000 feet. Even though some flights are conducted at the higher altitudes, AN-12s carrying troops on long missions probably would usually fly below 25,000 feet, if fuel requirements permitted, to reduce or eliminate detrimental effects on the troops. When carrying equipment only or returning from a mission the aircraft could fly at optimum altitudes.

(The AN-12 aircraft does have a small pressurized cabin which can accommodate 9 to 14 passengers, permitting aircraft carrying equipment such as assault guns and their crews to operate at best cruising altitudes.)

(The number of aircraft that would actually be available for an airlift depends in part upon serviceability rates, which are assumed to be 85 percent after a standdown of 10 days for a total of about 620 aircraft.) Considering past practices, the need for AN-12s to continue to fly other priority missions, and the feasibility of assembling and staging the aircraft, however, a force of up to half this size is a more realistic measure of what the Soviets would employ in an airlift operation. For example, some 300 AN-12s were used during the early hours of the invasion of Czechoslovakia (see Annex A).

Large numbers of AN-12s were used in out-of-country operations during the Soviet airlift to the Middle East and to Yemen in 1967-1968. Taking account of the major factors influencing airborne operations--loading factors, flight altitudes, and aircraft availability (but not opposition resulting in non-optimum flight profiles or casualties)--a force of 125 improved AN-12s could lift about 1,800 paratroops with supporting equipment to a radius of 1,500 nm or a range of about 2,200 nm. The range could be increased to about 2,800 nm if all aircraft were able to fly at altitudes best for fuel economy.

(The map on page 8 shows AN-12 ranges for a variety of missions staged from Soviet airfields.)

Heavy Transports

The limited range of the AN-12 medium transport when carrying heavy payloads and its inability to carry bulky equipment such as tanks and some heavy

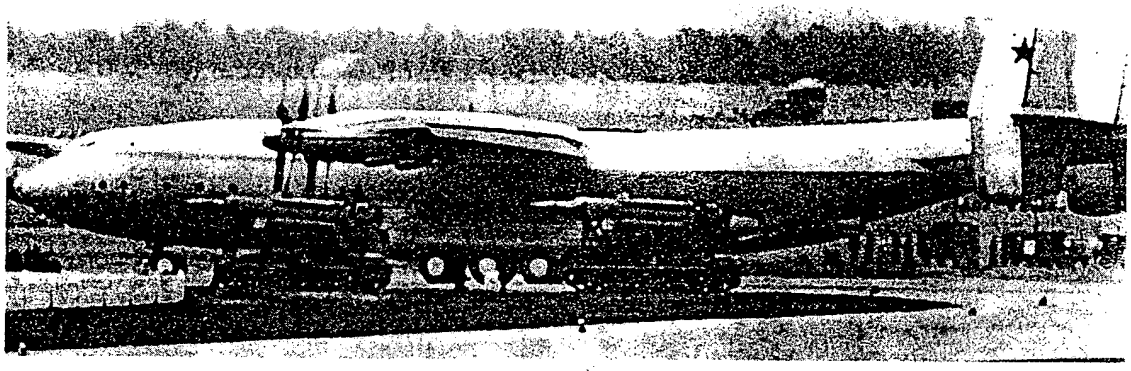
artillery point up the Soviet requirement for the AN-22 Cock heavy transport aircraft. According to the Soviets, the AN-22 can carry 99,000 pounds a distance of 5,100 nm but this performance is believed to be overstated for regular service use of the AN-22.

The first AN-22 prototype was produced in 1965 and, after some delay, the AN-22 has now been operationally deployed. A statement by the Soviet first deputy minister of civil aviation which appeared in *American Aviation* of April 1969 and observation of the aircraft by knowledgeable observers at the 1967 Paris Air Show suggest that one reason for the slow deployment is that the aircraft has had vibration problems. Soviet statements indicate, however, that AN-22 production will increase and that the Soviets envisage widespread use of this aircraft.

As many as 15 AN-22s could be operational by mid-1970 and some 40 to 50 could be operational by mid-1973. These projections are based on a continuing increase in the rate of production, postulated force requirements, and the rate at which sufficient base facilities to accommodate the aircraft and trained crews to fly them can be provided.

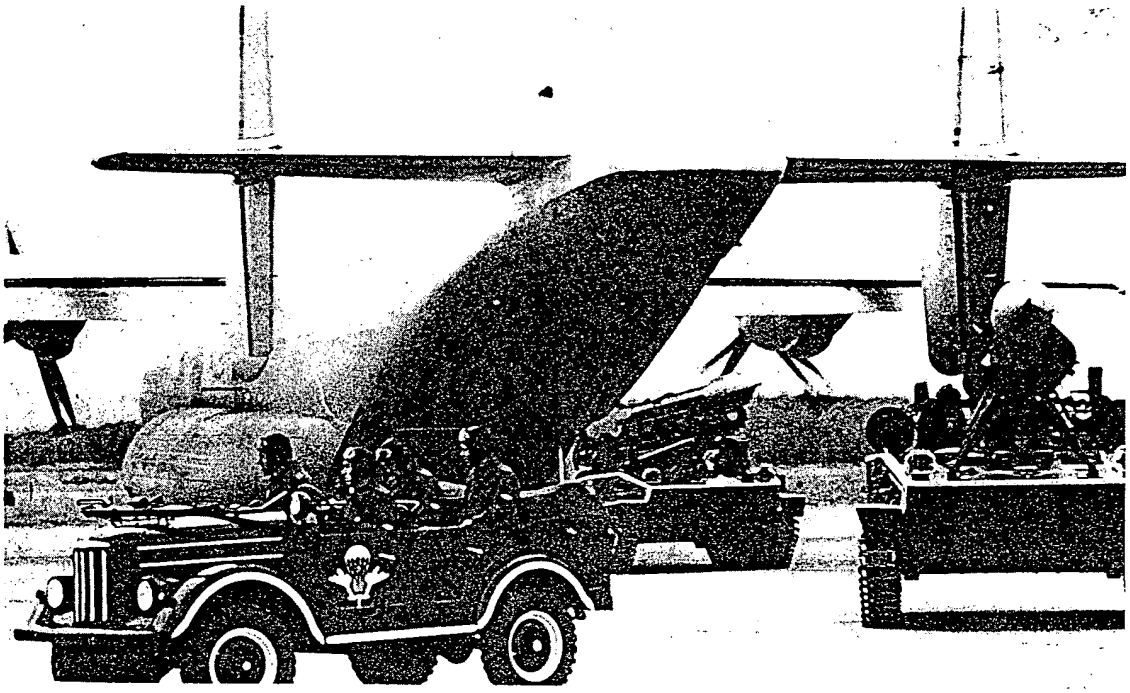
The manner in which the AN-22 will be employed in VTA units is not yet clear, but there are several options available. At the July 1967 Moscow Air Show a highlight of the large air assault demonstration was the landing of FROG tactical rockets and Ganef defensive missiles by 3 AN-22s. (See photographs on page 12.) When engaged in support of airborne troops,

AN-22 Heavy Transport



AN-22 with Ganef mobile surface-to-air missiles which have been unloaded and . . .

. . . unloading FROG tactical missiles.



The new AN-22 Cock is the first Soviet military heavy transport. Now probably entering operational service in limited numbers, the AN-22's ability to carry heavy, bulky items such as tanks and tactical missile systems will add significantly to Soviet airlift capabilities.

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the AN-22 will probably be used mainly to land heavy equipment and crews on airfields rather than to drop paratroops, although some equipment aboard the AN-22 at the 1969 Paris Air Show suggests that drop tests are currently being conducted by the aircraft.

To date, out-of-country missions by the AN-22 have included flights to air shows and at least one flight in follow-on support of the invasion of Czechoslovakia.

Light Transports

There are currently about 800 light military transports, mostly IL-14 Crates and LI-2 Cabs and a few AN-24 Cokes and IL-12 Coaches. About 200 of the 800 aircraft are assigned to the Tactical Air Forces (TAF).

Short range military lift capabilities should significantly increase as additional numbers of AN-24 twin-turboprop transports (see photograph on page 4) are assigned to operational units. Some 200 could be in service by the mid-Seventies, mainly with TAF. The new version shown at the 1969 Paris Air Show had full-width rear loading doors to facilitate loading and paradropping, and this version will probably be the primary one to go into military service. The AN-24 can carry 8,100 pounds of cargo to a range of 1,150 nm.

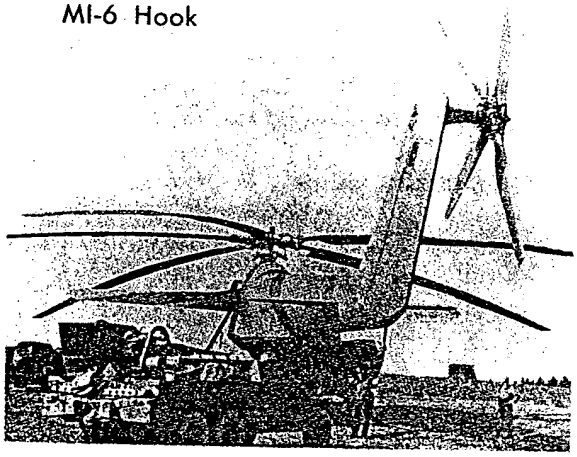
In addition to the 800 light transports, there are an estimated 750 to 1,000 very light or small utility aircraft in Soviet military units. These aircraft are the AN-2 Colt, which can carry up to 13 passengers; the AN-14 Clod, 6 passengers; and the YAK-12 Creek, 3 passengers.

Helicopters

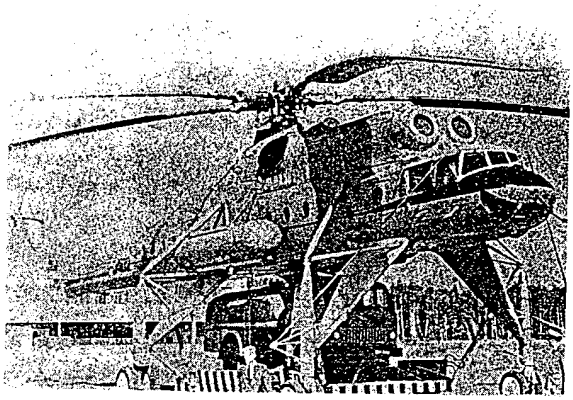
Analysis of sightings by attaches and other observers and classified Soviet military articles

Soviet Military Helicopters

MI-6 Hook



MI-10 Harke



The MI-6 Hook, shown loading a self-propelled antiaircraft gun, and the crane-like MI-10 Harke, with a fuel truck on a carrying pallet, are the two heavy helicopters now in Soviet military aviation forces. The MI-6 is deployed in much greater numbers than the MI-10.

The MI-8 Hip is the newest Soviet medium helicopter now in service in significant numbers. This MI-8 is carrying pods for launching unguided air-to-ground rockets, and in this configuration is typical of Soviet armed helicopters, which are transport helicopters fitted with a variety of armament.

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indicate that, excluding helicopters used in an ASW role, there are some 2,200 helicopters--about 300 heavy, 900 medium, and 1,000 light--in Soviet military units. These helicopters are found both in units up to regimental size which are equipped solely with helicopters, as in the case of many TAF units, and in smaller elements of varying strength, many of which have some transport aircraft as well. The helicopters are used for airlift, for general support of theater ground and air forces and other elements of the national government and Ministry of Defense, and for special missions in support of the ground forces. (See the tables in Annex B for the present and projected numbers of helicopters by type and mission.)

Helicopters in Tactical Aviation Units

Tactical aviation, which provides the major helicopter airlift capability, has about 850 heavy and medium helicopters for this mission: over 220 MI-6 Hook and 5 to 10 MI-10 Harke heavy helicopters and up to 580 MI-4 Hound and at least 40 MI-8 Hip medium helicopters. (See photographs on page 14 and Table 2 on page 16.) Most of the 850 helicopters are in the western USSR or Eastern Europe, but there are now some 175 opposite Communist China and the number there probably is still increasing.

There are up to 23 TAF helicopter regiments equipped with varying numbers of helicopters. Over half the regiments appear to consist of 10 to 15 heavy helicopters and 25 to 30 medium helicopters. A helicopter regiment of this size is capable of handling an assault force the size of a lightly equipped battalion.

Table 2

Characteristics and Performance of Selected Soviet Helicopters

Designation			Takeoff weight (lbs)		Cargo capacity (lbs)		Troop capacity	Radius and range with normal load (nm)	Average cruise speed (kts)	Cabin dimensions e/		
Soviet	Western	Engines	Rolling a/	Hovering b/	Useful load c/	Normal payload d/				Height	Width (ft)	Length
Heavy												
MI-12	Homer	4 turbine	218,000		89,500	59,500	200	140/260	110	f/	f/	f/
				190,000	61,500	31,500	200	180/340	130			
MI-10	Harke g/	2 turbine	110,150		45,950	36,000 h/	28	80/135	90			
				95,800	31,000	17,000	28	130/250	120			
MI-6	Hook g/	2 turbine	104,100		43,700	29,700	65	150/290	130	8.2	8.7	38.5
				90,500	30,100	16,100	65	165/320	150			
Medium												
MI-8	Hip	2 turbine	27,800		12,000	8,800	24	125/240	115	5.9	7.2	17.5
				26,200	10,400	7,200	24	125/240	130			
MI-4	Hound	1 piston	17,200		5,200	3,650	16	125/230	100	5.0	5.0	14.7
				16,250	4,250	2,700	16	125/230	100			
KA-25	Hormone	2 turbine	17,500		8,000	4,400	12	180/350	95			
				16,100	6,600	3,000	12	180/350	100			
MI-2	Hoplite	2 turbine	9,250		3,850	2,800	7	75/150	85			
				8,100	2,700	1,650	7	75/150	90			
KA-26	Hoodlum	2 piston		7,200	2,600	1,600	6	130/240	70			
Light												
MI-1	Hare	1 piston		5,400	1,200	800	3	105/200	75			

Note: Categories (heavy, medium, and light) are based on the useful load which can be lifted.

a. The weight at which a rolling takeoff can be made.

b. The weight at which a takeoff from a hover can be made.

c. The weight of the combined fuel and payload that can be carried.

d. The payload which can be carried with a full fuel load. Generally, additional payload can be carried with less fuel, but to reduced radius or range.

e. For helicopters with significant cargo space and clamshell doors at rear of fuselage for loading bulky items.

f. The cabin dimensions are unknown. The fuselage is some 126 feet in length and has a nearly square cross section of about 18 feet.

g. Performance shown is for helicopters with engines uprated from 5,500 shaft horsepower (SHP) to 6,500 SHP. Performance of those equipped with the 5,500 SHP engines would be less.

h. Some fuel would have to be offloaded to lift this payload.

Armed Helicopters

The Soviets are demonstrating a growing appreciation for the use of armed helicopters in a tactical role. Although the present Soviet concept appears to be mainly one of providing fire support for heliborne assault operations, some recent Soviet and East European military writings also visualize the armed helicopter as a potential asset for on-call and search and destroy operations.

There is no evidence that the Soviets have developed a helicopter, like the US Huey Cobra, specifically for armed missions, and they continue to use transport helicopters fitted with a variety of armament. Normal nose gun armament installed on the MI-4, MI-8, and MI-6 helicopters is a 12.7mm (50 caliber) machine gun although some MI-4s may now carry 2 such machine guns or a 23mm weapon. In addition, both the MI-4 and MI-8 have been seen fitted with 4 detachable rocket launcher pods (see photograph on page 14). Each pod can launch 16 57mm (2.25 inch) unguided rockets.

A Soviet MI-4 recently sighted in Hungary was fitted with 6 armament pylons and had a possible protuberance which could be a sighting system for antitank guided missiles. (An MI-1 Hare light helicopter was seen firing an antitank guided missile in 1968.) The 6 pylons could be used to carry antitank guided missiles, small bombs and bomb clusters, unguided rockets, or gun pods.

A capability to fire antitank guided missiles has not yet been observed on the MI-8, which is now in service in significant numbers, but presumably it has been or will be equipped with a system

which is similar to that seen on the MI-1 and possibly now available for the MI-4.

Light Aviation Units Supporting the Ground Forces

Helicopters and small utility transport aircraft found at or near and routinely available to Soviet ground force elements provide a wide variety of services. They are organized into squadrons and flights, and are conventionally referred to as air liaison or light aviation units.

These aircraft are in addition to the heavy and medium helicopters and light transport aircraft of Soviet tactical aviation regiments, which provide the ground forces with their major airlift capability for short range tactical operations and satisfy logistic and auxiliary requirements for both air and ground elements.

The light aviation units of the ground forces are probably manned and maintained by TAF even though operationally subordinate and permanently attached to the ground forces.

Strength and Disposition

For reconnaissance functions, the Soviet tables of organization and equipment allow for 12 MI-1 Hare light helicopters and 5 MI-4 Hound medium helicopters for light aviation units at the combined arms army level and 12 MI-1s and 4 MI-4s at the tank army level. These are assigned as follows:

	Number of helicopters			
	MI-1 Hare		MI-4 Hound	
	(CAA)	(TA)	(CAA)	(TA)
Separate special mission radio battalion			1	1
Separate special mission radiotechnical battalion			1	0*
Separate reconnaissance artillery regiment--fire directing-reconnaissance helicopter squadron	12	12		
Radiological and chemical reconnaissance flight			3	3
Total	12	12	5	4

Since corps are evidently similar to armies in function, they may also have light aviation units. The number of helicopters authorized, however, may be fewer than with an army since corps appear to have fewer support units and usually control fewer divisions.

Ground sightings indicate that the 5 armies in the Group of Soviet Forces in Germany (GSFG) have their full complement of helicopters. A complement of 16 or 17 reconnaissance helicopters in the 21 ground armies and 11 corps would require about 540 helicopters.

Soviet press articles have alluded to the assignment of a flight of helicopters (probably 3) at the division level. By the mid-Seventies most division and higher headquarters may have 1 to 3 helicopters for liaison and other missions.

* *A tank army has no radiotechnical battalion.*

Photography of Soviet bases in East Germany in July and August 1969 indicates that some light aviation units there are receiving the MI-2 Hoplite, a Soviet-designed helicopter produced in Poland. The MI-2 can carry 7 troops. In addition, a new light observation helicopter could be in service in the early Seventies.

Army and some subordinate headquarters appear to have a few small utility transports, either the YAK-12 Creek or the AN-2 Colt or both, as well as helicopters. The AN-14 Clod twin-engine aircraft is expected to eventually replace the aging YAK-12s and AN-2s. It is estimated that there are some 400 to 600 such aircraft in light aviation units.

Mission and Functions

The mission of the aircraft in light aviation units is varied. Some of the MI-4s are equipped to detect and intercept ground-based radio and radar emissions and others for the detection of radiologically and chemically contaminated areas.

The MI-1s mainly provide a means of reconnaissance and fire direction for army rocket and artillery troops. The helicopter squadron of 12 MI-1s consists of an administrative headquarters, a platoon for airfield technical support, and a technical unit. With 9 of the MI-1s airborne simultaneously a helicopter squadron could conduct reconnaissance

on a 90 to 100 kilometer (49 to 54 nm) front to a depth of 15 to 20 kilometers (8 to 11 nm).

The small utility transports are generally used for support of ground reconnaissance elements, transfer of personnel and courier material between headquarters, and training paratroops.

* * * * * *

Summary

The Soviets are continuing to augment their military air transport capabilities. Growth of the medium transport force, which provides the major portion of the airlift capability, is particularly noteworthy. Its capabilities were successfully put to the test during the invasion of Czechoslovakia.

Soviet capabilities for short range tactical operations and logistic support have been increased through a buildup and modernization of the tactical aviation helicopter force, particularly along the Soviet-Chinese border.

Long Range Airlift Forces

The continuing buildup of the main airlift force for intertheater or long range airlift with additional AN-12 transports enhances Soviet capabilities for airborne operations and other airlift missions to all of Europe and much of Asia and Africa. Although the AN-12 is adequate for airlift missions to these areas, its ability to perform large scale distant operations is limited by the need to reduce payload to carry the necessary fuel. For example, one AN-12 version can carry troops or high priority cargo to a range of up to 4,200 nautical miles but the payload would be only about 10,000 pounds, limiting the types of support weapons and equipment which could accompany the force.

The strength of the main airlift force--Military Transport Aviation or VTA--now stands at about 725 AN-12s. Soviet airlift operations to the Middle East and Africa and to Czechoslovakia during the intervention show that the Soviets are willing to commit up to one-half this force to achieve major objectives. A force of this size (about 360 AN-12s) could, for example, carry some 5,000 paratroops with full supporting equipment to a radius of 1,500 nm or a range of 2,200 to 2,800 nm depending on the altitudes flown.

The maximum cargo lift capacity of the same force would permit carrying some 7,700 tons of supplies and equipment to a distance of 900 nm in one lift. Cargo and troop carrying missions to significantly greater distances are possible with AN-12s carrying reduced payloads.

A few of the new AN-22 Cock heavy transports are now operationally deployed. As additional aircraft enter service, Soviet capabilities for distant airlift will be increased. The AN-22 is designed to accommodate bulky cargo such as tanks and can, according to the Soviets, carry 99,000 pounds of cargo to 5,100 nm. This assessment is believed to be optimistic for service use of the AN-22 but the aircraft will still provide a significant augmentation of Soviet capabilities. Some 40 to 50 AN-22s could be operational by mid-1973.

Overall Soviet long range airlift capabilities will continue to be limited by vulnerability to hostile action. Most Soviet fighters can provide escort from the USSR only to a radius of 500 nm or less, and airlift forces on distant missions face the danger of destruction by hostile forces while en route to their objectives. In addition, even with the AN-22, the lack of jet transports--such as the US C-141 and C-5A--limits Soviet abilities to respond quickly to high priority airlift requirements, and range and payload limitations of the AN-12 limit the effective operating range of the force on large missions.

Short Range Airlift Forces

The Soviets are continuing to increase their capabilities for intratheater or short range airlift with the assignment of additional heavy and medium helicopters to the Tactical Air Forces and the better positioning of helicopter units in an enlarged air base structure, particularly in the area opposite the border of China. The helicopter force, which now totals some 850 helicopters, has a high degree of mobility but its overall strength and disposition are inadequate to lift a large ground force.

Auxiliary Air Support

Some steps may now be under way to expand the role of armed helicopters to include ground attack missions, but the basic Soviet concept of employment still appears to be one of providing fire support for heliborne assault forces. Helicopters used for such support are standard transport helicopters equipped with machine guns, a 23mm weapon, unguided rockets, or antitank guided missiles. This permits the force to maintain a good degree of flexibility of employment in either combat or transport roles, but force capabilities probably would be increased by the introduction of high speed close support helicopters designed specifically for armed missions and carrying armament turrets and external stores attachments. There is no evidence that such a helicopter is being developed, but a program of this nature would be difficult to detect in its early stages.

Light aviation units which serve the ground forces in a wide variety of roles such as reconnaissance, artillery spotting, and liaison are apparently being improved with the assignment of new helicopters and small utility aircraft. The number of helicopters (16 or 17) now assigned at the army level may be enough to serve all subordinate divisions on a common front.

Some Soviet military authors have long advocated the assignment of helicopters at division level in larger numbers than the few light helicopters which may now be available for liaison functions, and the Soviets may provide some selected divisions with their own complement of helicopters to enable them to operate more efficiently with less dependence on a higher headquarters. It has not been determined, however, whether any divisions now have such a unit.

ANNEX A

Soviet Airlift During the Intervention In Czechoslovakia

Soviet airlift operations at the time of the intervention in Czechoslovakia in August 1968 provide an insight into Soviet airlift capabilities and operational procedures.

The Operation

Preparatory Activity

As in the case of some TAF units, some AN-12 transport units of VTA probably deployed to forward bases days or even weeks before the invasion.

Staging the AN-12s to forward bases--which follows Soviet doctrine--placed the aircraft closer to Czechoslovakia and permitted them to carry heavier loads. It probably also served to disperse the aircraft for faster loading of troops and equipment and permitted expeditious launch of assault elements.

Following the probable pre-invasion deployment to staging bases, the prime measure which assured a successful airlift into Czechoslovakia was the prepositioning of ground control teams. A number of reports point to the arrival of 2 Soviet transports in Czechoslovakia several hours before the arrival of the first AN-12s carrying troops from the USSR. According to a number of reports, including one by an employee of the Czechoslovak state airline who was on duty at the Prague/Ruzyne airfield at the time, these aircraft carried airfield technicians and civilian air controllers whose task was to take over air traffic control facilities at Prague in preparation for the arrival of the main airborne invasion force.

Airlift Into Czechoslovakia

A total of about 300 AN-12s probably were involved in the invasion during the early morning hours on 21 August. Some transports probably were given fighter cover en route to Prague. The Soviets also employed electronic countermeasures in support of the invasion.

Some 125 to 175 of the AN-12s landed in the Prague area, with others landing in the Brno and Bratislava areas. Reports of paradrops of elements to secure some airfields for the main landing force have not generally been confirmed, but some elements were probably prepared for such a contingency in the event the Czechoslovaks resisted the takeover.

The number of troops brought in by the AN-12s is unknown, although at least a regiment of airborne troops was reported to be in the Prague area and one report indicates that some nonairborne elements were flown to Czechoslovakia as well. Operational planning probably ensured that the distances flown by the assault transports from their staging bases to Czechoslovakia and then to recovery bases would permit most if not all of the aircraft to carry their maximum payload of 35,000 to 44,000 pounds.

The number of airborne troops which could have been brought in depends on the amount and type of support equipment carried and what proportion of the force was prepared for an airdrop. If the entire force was prepared for an airdrop, the 125 to 175 AN-12s which flew into the Prague area during the early hours could have carried from 2,000 to 3,000 paratroops and supporting equipment. The number of paratroops and other troops probably was considerably higher, however, since the major supporting equipment carried probably was largely limited to assault guns. AN-12s which flew into Czechoslovakia in the days following the initial landings probably brought in additional troops and equipment to augment the force.

Helicopter Support

Ground sightings show that several Soviet units equipped with heavy and medium helicopters moved into Czechoslovakia. For example, a reliable source reported that Kosice/Barca airfield in the easternmost part of Czechoslovakia was occupied by parachutists dropped in the early hours of 21 August by MI-6 heavy helicopters and transport aircraft. The MI-6s then occupied the airfield along with a regiment of fighter aircraft. The same source further reported that after 21 August MI-6s frequently flew in specialized construction material from the USSR for a Soviet camp near Kosice.

Evaluation of the Airlift Operation

The Soviet airlift was well executed and played a major role in the intervention in Czechoslovakia. The speed with which the Soviets took over Czechoslovakia hinged on the ability of the airborne forces to quickly secure the main population centers and on the ability of the motorized rifle and tank divisions to expeditiously link up with the airborne elements. The closeness of the elements of the Group of Soviet Forces in Germany which intervened and favorable advance routes combined with a lack of opposition permitted this quick link-up.

The airborne forces probably would not have succeeded as well had they been opposed while in the air and at the landing areas. Sizable elements would have had to be paradropped to secure airfields for landing of the AN-12s carrying support equipment such as 85mm assault guns. Paradrops at night would probably have resulted in scattering the force over a wide area, hampering the process of quickly regrouping for an assault.

The airborne force the Soviets would need to employ against other East European countries would

vary in size according to differences in terrain, the nature and number of routes for the link-up forces, the distance of the objectives from Soviet or allied borders, and the potential opposition. The intervention in Czechoslovakia showed that the Soviets are capable of quickly airlifting a large assault force, at least when unopposed and when landings rather than airdrops are made. A force like the 125 to 175 AN-12s used in the initial lift into the Prague area--less than one-fourth of those assigned to military transport units--could lift several thousand paratroops if they are landed rather than airdropped and if much of their supporting equipment, vehicles in particular, is not included. The success of such a procedure would depend on Soviet ability to have these items brought in quickly by the link-up forces or by subsequent support flights.

ANNEX B

Soviet Military Transports and Helicopters

This Annex presents estimates of Soviet holdings of military transports and helicopters, by type and mission, from 1965 to date and projects forces through 1979.

Current order of battle is based on analysis of sightings by attaches and other observers, classified Soviet and East European military articles, and open-source magazine and newspaper items.

Projections are based on current and anticipated trends in the force structure; the number and type of organizations to be supported; the anticipated availability of airbases, supporting facilities, aircraft, and trained crews; production programs and capacity; and likely attrition and retirement rates for current aircraft.

Table 3

Total Soviet Military Transport Aircraft and Helicopters
Number of Aircraft at Midyear 1965-69 and Projections to Mid-1979

	1965	1966	1967	1968	1969
Transports					
Very light	1,150-1,500	1,000-1,350	900-1,200	800-1,100	750-1,000
Light	800-900	775-850	750-825	725-825	725-825
Medium	700-800	775-875	800-900	825-925	875-975
Heavy	0	0	0	0-3	3-7
Helicopters					
Light	875-1,025	900-1,050	900-1,075	900-1,075	900-1,100
Medium	600-750	650-800	725-850	775-900	850-950
Heavy	110-175	140-200	175-235	215-275	265-315

	1970	1971	1972	1973	1974
Transports					
Very light	700-950	650-900	600-850	600-850	600-850
Light	725-825	700-825	675-800	650-775	650-750
Medium	925-1,025	925-1,050	925-1,050	925-1,050	925-1,050
Heavy	10-15	20-25	30-35	40-50	55-70
Helicopters					
Light	900-1,100	900-1,150	900-1,175	900-1,200	925-1,250
Medium	875-1,025	900-1,074	925-1,125	975-1,175	975-1,225
Heavy	275-350	300-375	325-400	325-425	350-450

	1975	1976	1977	1978	1979
Transports					
Very light	600-850	600-850	600-850	600-850	600-850
Light	625-750	625-725	600-700	575-700	575-700
Medium	925-1,050	900-1,025	900-1,000	900-1,000	900-1,000
Heavy	70-95	80-105	80-120	80-120	80-120
Helicopters					
Light	925-1,275	950-1,325	975-1,350	1,000-1,350	1,000-1,350
Medium	1,000-1,275	1,000-1,325	1,000-1,350	1,000-1,350	1,000-1,350
Heavy	375-475	375-500	375-500	375-500	375-500

See notes on page 35.

Table 4

Soviet Military Transport Aircraft in Military Transport Aviation Units, Number of Units and Aircraft at Midyear 1965-69 and Projections to Mid-1979

(For intertheater and long range airlift)

	1965	1966	1967	1968	1969
Military Transport Aviation (VTA) Units					
Divisions	5-6	5-6	5-6	6	6
Regiments	17-18	15-20	18-20	19-21	19-21
VTA Aircraft					
Medium transports (AN-12)	575-650	600-675	625-700	650-725	675-750
Heavy transports (AN-22)	0	0	0	0-3	3-7

	1970	1971	1972	1973	1974
VTA Units					
Divisions	6-7	7-8	7-9	7-9	7-10
Regiments	21-24	21-25	22-27	22-28	23-29
VTA Aircraft					
Medium transports (AN-12)	725-800	725-825	725-825	725-825	725-825
Heavy transports (AN-22)	10-15	20-25	30-35	40-50	55-70

	1975	1976	1977	1978	1979
VTA Units					
Divisions	8-10	8-10	8-10	8-10	8-10
Regiments	24-29	24-29	24-29	24-29	24-29
VTA Aircraft					
Medium transports (AN-12)	725-825	700-800	700-775	700-775	700-775
Heavy transports (AN-22)	70-95	80-105	80-120	80-120	80-120

See notes on pages 35-36.

Table 5

Soviet Helicopters in Tactical Air Force Units
Number of Units and Helicopters at Midyear 1965-69
and Projections to Mid-1979

(For intratheater and short range airlift)

	1965	1966	1967	1968	1969
TAF Units					
Regiments	14-17	15-18	16-19	18-20	21-23
TAF Helicopters					
Medium	475-525	500-550	525-575	550-600	600-650
Heavy	85-140	115-160	145-185	180-215	225-250

	1970	1971	1972	1973	1974
TAF Units					
Regiments	22-24	23-26	24-27	25-28	25-30
TAF Helicopters					
Medium	625-675	650-725	675-750	700-775	700-825
Heavy	235-280	255-300	280-320	280-340	300-360

	1975	1976	1977	1978	1979
TAF Units					
Regiments	26-32	26-33	26-33	26-33	26-33
TAF Helicopters					
Medium	700-875	700-900	700-900	700-900	700-900
Heavy	325-380	325-400	325-400	325-400	325-400

See notes on pages 35-36.

Table 6

Soviet Military Transport Aircraft and Helicopters Used In General Support, Number of Aircraft at Midyear 1965-69 And Projections to Mid-1979

	1965	1966	1967	1968	1969
Transports					
Very light	575-750	500-675	450-600	400-550	375-500
Light	800-900	775-850	750-825	725-825	725-825
Medium	125-150	175-200	175-200	175-200	200-225
Helicopters					
Light	525-575	525-575	525-575	525-575	500-575
Medium	25-75	50-100	75-125	100-150	125-175
Heavy	25-35	25-40	30-50	35-60	40-65

	1970	1971	1972	1973	1974
Transports					
Very light	350-475	325-450	300-425	300-425	300-425
Light	725-825	700-825	675-800	650-775	650-750
Medium	200-225	200-225	200-225	200-225	200-225
Helicopters					
Light	500-550	475-550	450-550	450-550	450-550
Medium	125-175	125-175	125-175	125-175	125-175
Heavy	40-70	45-75	45-80	45-80	50-90

	1975	1976	1977	1978	1979
Transports					
Very light	300-425	300-425	300-425	300-425	300-425
Light	625-750	625-725	600-700	575-700	575-700
Medium	200-225	200-225	200-225	200-225	200-225
Helicopters					
Light	425-525	425-525	425-525	425-525	425-525
Medium	125-175	125-175	125-175	125-175	125-175
Heavy	50-95	50-100	50-100	50-100	50-100

See notes on pages 35-36.

Table 7

Soviet Helicopters and Very Light Utility Transports Assigned to Ground Forces, Number of Aircraft at Midyear 1965-69 and Projections to Mid-1979

	1965	1966	1967	1968	1969
Helicopters					
Light	350-450	375-475	375-500	375-500	400-525
Medium	100-150	100-150	125-150	125-150	125-175
Transports					
Very light	575-750	500-675	450-600	400-550	375-500

	1970	1971	1972	1973	1974
Helicopters					
Light	400-550	425-600	450-625	450-650	475-700
Medium	125-175	125-175	125-200	150-225	150-225
Transports					
Very light	350-475	325-450	300-425	300-425	300-425

	1975	1976	1977	1978	1979
Helicopters					
Light	500-750	525-800	550-825	575-825	575-825
Medium	175-225	175-250	175-275	175-275	175-275
Transports					
Very light	300-425	300-425	300-425	300-425	300-425

See notes on pages 35-36.

Notes to the Tables

Table 3: This table includes all Soviet military transport aircraft and helicopters except those used in an ASW role. These aircraft make up elements which are variously used for airlift, for general support of theater ground and air forces and other elements of the national government and Ministry of Defense, and for direct support of the ground forces. Aircraft are broken down by mission in Tables 4, 5, 6, and 7.

Categories are based generally on the normal payload which the aircraft can carry with a full internal fuel load. Very light transports are differentiated from light transports on the basis of their smaller size and the fact that they carry fewer passengers, and because they are used for a wider variety of missions.

Very light transports include the AN-2 Colt, AN-14 Clod, and YAK-12 Creek. Most light transports are IL-14 Crates and LI-2 Cabs, but the category also includes the AN-24 Coke and IL-12 Coach. AN-24s will be assigned in increasing numbers over the next several years and the BE-30 Cuff and possibly the YAK-40 Codling will be introduced as well. Most mediums are AN-12 Cubs, but include the AN-8 Camp, AN-10 Cat, TU-124 Cookpot, TU-104 Camel, and IL-18 Coot. A few TU-134 Crustys may be assigned by 1970. The heavy transport is the AN-22 Cock.

The light helicopter is the MI-1 Hare. Other light helicopters, including a light observation helicopter, could be introduced in the early Seventies. Most mediums are MI-4 Hounds, but MI-8 Hips are being introduced in increasing numbers and there are some MI-2 Hoplites as well. Other mediums which probably will be introduced over the next several years include the KA-25 Hormone and KA-26 Hoodlum. Most heavy helicopters are MI-6 Hooks, but include MI-10 Harkes. The MI-12 Homer may enter service by 1971 or 1972.

Table 4: This force supports the airborne troops and meets special and heavy airlift requirements of other

elements of the armed forces and national government. A few transport aircraft other than AN-12s and AN-22s assigned to this force are carried in Table 6.

The numbers of regiments are derived from an estimate of 35 medium or 20 heavy transports per regiment.

Table 5: Soviet Tactical Air Force helicopters are those which provide airlift for short range tactical operations and logistics support of ground and air elements.

The numbers of regiments are derived from an estimate of 10 to 15 heavy and 25 to 30 medium helicopters per regiment.

Table 6: This table includes transports and helicopters which perform general support functions for major elements of the armed forces. They are assigned to Long Range Aviation, Tactical Air Forces, Air Defense, Naval Aviation, Ministry of State Security, General Purpose Transport, and special Soviet Air Force units.

Table 7: This table includes those helicopters and very light utility transports under the operational control of and permanently assigned mainly to army and corps commanders. They are manned and maintained by Tactial Air Force personnel.