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31 July 1958

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MEMORANDUM FOR: Deputy Assistant Director, National Estimates

Subject: N.E.S.C. Intelligence Requirements,
Ad Hoc Working Group, Soviet Air Defenses
In Mid-1962References: a. Memorandum 30 June 1958
b. Memorandum 11 July 1958

8-1284

T. S. Cont. No.
AFCIN, HQ USAF

In accordance with reference b, above, an Ad Hoc Working Group on Soviet Air Defenses in Mid-1962, chaired by the Joint Staff, with members and advisors invited from all agencies and JTIB, GMIC, JAEIC and SEC, reviewed appropriate portions of NIE 11-57, "Sino-Soviet Bloc Air Defense Capabilities Through Mid-1962" (16 July 1957) from 10 July 1958 to date, for the purpose of providing the IAC with intelligence assumptions for the Net Evaluation Sub-Committee.

The Ad Hoc Working Group, after re-examination of NIE 11-57, believes that most of the NESC Soviet Air Defense requirements are presently covered by NIE 11-57, and that this coverage continues to be valid, with exception of the additions, updatings and modifications that follow. The Ad Hoc Working Group recommends that paragraphs 24, 25, 33, 34, 38, 40, 47 and 57 be revised where necessary to conform with the S.E.C. contribution to N.I.E. 11-4-58, when approved.

<u>Page</u>	<u>Paragraph</u>	
2	2	Third Sentence: Delete "1300" and substitute "1600". Last Sentence: Delete "35,000" and substitute "up to 40,000 to 45,000 feet". Add at end of Paragraph: "By mid-1962 we estimate that the Sino-Soviet Bloc fighter strength will be about 15,000 with approximately 40% of that number all-weather types."
2	5	Third Line: Delete word "low".

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<u>Page</u>	<u>Paragraph</u>	
3	11	Third Sentence: Delete and substitute: "We estimate that the USSR will probably not increase its present numerical fighter strength and a cutback in the number of Soviet manned interceptors will probably begin prior to mid-1962."
3	12	Delete last clause and substitute: "By 1960 the Soviets will probably have in full operation a digital data handling system for aircraft reporting and control purposes."
6	24	Revise to conform with N.I.E. 11-4-58, when approved.
6	25	Add: "There is some evidence that Soviets may be introducing a new IFF system which will probably be fully operational by 1960."
7	29-31	<u>NOTE</u> : Should be revised to conform with NIE 11-5-58 when approved.
8	33	Revise to conform with N.I.E. 11-4-58, when approved.
8	34	Revise to conform with N.I.E. 11-4-58, when approved.
9	38	Change next to Last Sentence to read: "The USSR has been engaged in the development of automatic data handling devices suitable for air defense purposes." Delete the last sentence and substitute: "It is believed that the Soviets are introducing such equipment into operational use and that many key areas have this equipment at the present time."

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<u>Page</u>	<u>Paragraph</u>	
9	40	<p>Second Sentence: Delete all after ". . . microwave frequencies." Substitute for deleted clause the following sentence:</p> <p>"Both shipborne and ground-based X-Band jamming equipment are in operational use."</p> <p>Fourth Sentence: Delete sentence beginning "The vulnerability . . ." and substitute the following: "A trend has been noted towards frequency diversification, reducing the earlier concentration of frequencies in the 75-85 mc/s, 2610-3100 mc/s, and 9200-9500 mc/s bands. This trend includes the addition of L-Band frequencies near</p> <p>500 mc/s and probably the use of rapidly changeable frequencies in some radars."</p>
10	43	<p>Add, "By mid-1962 there will be about 285 regiments of fighters in Soviet Air Forces. Add, "The European Satellites and Communist China are expected to receive increasing quantities of AAA guns of the 100 and 57 mm types. In addition, newer type radar for warning and control purposes will be allotted in these countries."</p>
11	47	<p>First Sentence: Delete "500" and substitute "600". Add, "We estimate that the entire periphery of the USSR now has early warning radar. The long standing gaps in peripheral early warning radar coverage along the Arctic coast between Dikson and the Chukotski is now believed to have been filled, though perhaps not as extensively as in other areas. The Soviets by mid-1962 will probably have radar cover for all areas, except for inland areas of central and eastern Siberia."</p>

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<u>Page</u>	<u>Paragraph</u>	
11	48	Fourth Sentence: Delete "frequently" and "up to", and add "or longer".
13	57	Add new Last Sentence: "However, with the anticipated implementation of data handling equipment, this traffic-handling capacity is expected to increase to at least twenty simultaneous raids."
14	63	Add, "By mid-1962 we estimate that some of the static subdistrict, and District Headquarters, and major GCI sites will have underground facilities."
14	64	Change Third Sentence to read: ". . . will probably rise to <u>more than</u> one-third by <u>mid-1962</u> . In addition, there. . . "
14	65	Delete Third Sentence, change Fourth Sentence, as follows: "A few recent reports reflect the construction of detached heavy shelters for government and economic units. The Moscow and Leningrad subways are available for use as shelters, and additional subways are under construction in Kiev and Tblisi. Vladivostok, Baku. . ."
14	67	Delete Last Sentence, Add: "The USSR is presently conducting a three-stage course in civil defense training announced as being for the entire population. The target completion date for these courses is the end of 1960. Field demonstrations are conducted and

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<u>Page</u>	<u>Paragraph</u>	
14 (Cont'd)	67 (Cont'd)	air raid drills are prescribed. There is some evidence that drills have been conducted on a city wide basis. By mid-1962 we estimate that this type of defense will be expanded to most major cities and target areas.
15-16	70-75 incl 76 (1st sentence)	<u>NOTE</u> : Discussion of Western developments appears in these sections. It is estimated that the Soviets will assess Western developments accurately for just what they will be. The NESC, presumably, will be informed fully of the Western air and missile threat to the Bloc.
16-17	76	Change Fourth Sentence as follows: ". . . into operational units as follows: in late 1958, a FISHBED-FACEPLATE type; in late 1958 the FITTER day fighter, and in . . . "
17	77	Change Second Sentence: "Maximum speeds of about 1200 knots will probably be achieved by the 1958-1959 day fighter." In the Fourth Sentence, change the first word "Most" to "All".
17	78	Delete from Last Sentence "60 percent" and substitute "50 percent".
17	79	Delete Last Sentence, add: "On this basis; we hold estimated Soviet fighter strength constant at about 10,000 through mid-1960 at which time the Soviets will probably gradually decrease their fighter strength. By mid-1962 we estimate the Soviet fighter strength to be slightly over 9,000 aircraft."

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19 89 Change Fifth Sentence and all Sentences thereafter, as follows: "Considering operational availability dates as falling within a two-year period, in some cases, (Refer N.I.E. 11-5-58), and air defense missiles as a high-priority element in an over-all Soviet missile program, we believe that the USSR might produce, by mid-1962, sufficient missiles and guidance equipment to accomplish an operational program of a general order of magnitude about as follows:

<u>Estimated Missile Types</u>	<u>No. of Missile Units</u>
SA-1	56
SA-2	175
SA-3	150
SA-4	<u>100</u>
Total	<u>481</u>

In addition, they could equip about 6 cruisers and 16 destroyers with surface-to-air missiles; and equip all Bloc all-weather fighters and some Bloc day fighters with air-to-air missiles or unguided rockets of various types."

21 96 Delete Second Sentence and substitute: "We also have evidence that in addition to the Soviet employment of individual cruisers and destroyers in air early warning exercises, Soviet minesweepers are now being adapted for use as station radar picket ships for continental early warning."

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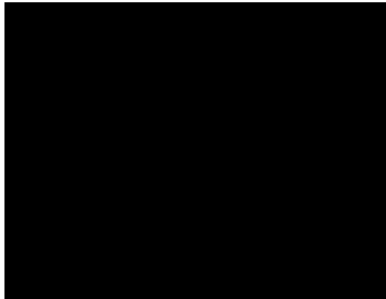
Page Paragraph

21 98 Delete last three Sentences and substitute:
 "The limitation imposed by current air-ground radio communications equipment is probably being overcome by use of an air-ground data-link system. By mid-1962 it is estimated that this equipment will be in widespread use."

22 100 Delete Third and Fourth Sentences and substitute following: "By mid-1960, the air defense control and reporting system will be passing information in digital form and computers will be employed to increase the traffic handling capacity and to solve the complex problems associated with ground-controlled intercepts. This system will be in widespread use within the USSR and probably in the European Satellite countries."

31 Table 3 Change Table as follows:

<u>WEAPON</u>	<u>CALIBER</u>	<u>WEIGHT OF PROJECTILE</u>	<u>EFFECTIVE CEILING</u>	<u>MUZZLE VELOCITY</u>	<u>MAXIMUM RATE OF FIRE</u>
14.5 mm AA HMGs (single, dual, and quadruple barrelled)					
57 mm AA Gun M 1950					
100 mm AA Gun M 1949					



25X4 USAF

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Page Paragraph

11 48 Substitute new Table herewith:

Bloc Airfields in Mid-1958

Minimum Runway Lengths (feet)

<u>AREA</u>	<u>9,000</u>	<u>8,000</u>	<u>7,000</u>	<u>6,000</u>	<u>5,000</u>
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USSR:

EUROPEAN SATELLITES:

ASIATIC COMMUNIST NATIONS:



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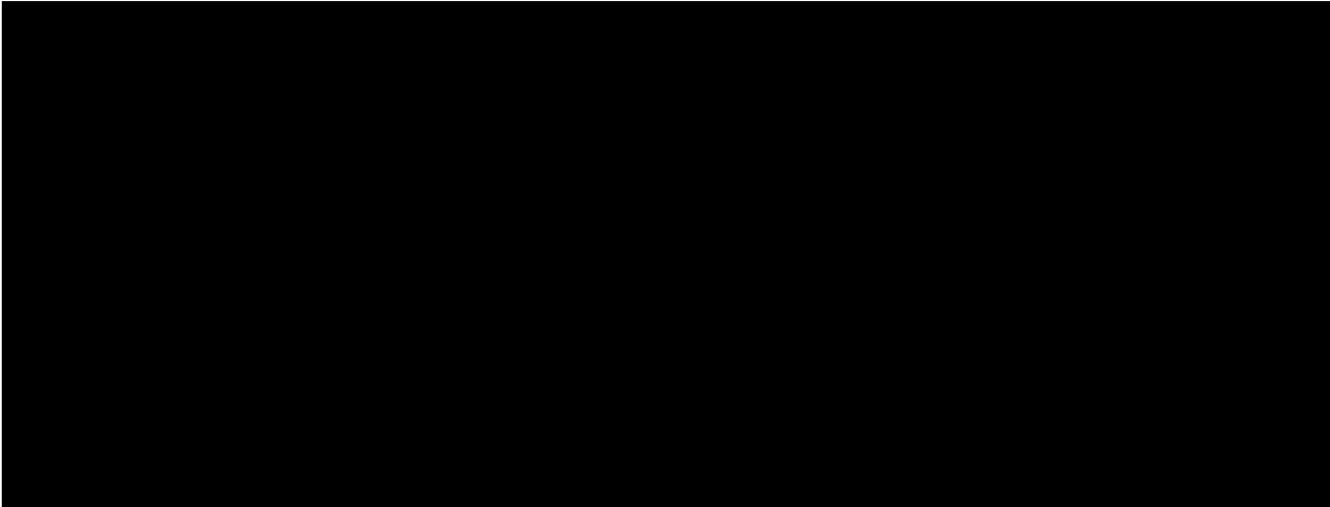
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Page 30, Table 2

ESTIMATED PERFORMANCE OF SOVIET INTERCEPTOR AIRCRAFT (External Fuel)
OPTIMUM

(Calculated in accordance with U.S. Mil C-5011A Spec except that fuel reserves are reduced to permit a maximum of 20 minutes maximum endurance at Sea Level and aircraft operate at altitudes permitting maximum Radius)

25X4 USAF	<u>FAGOT</u>	<u>FRESCO A & B</u>	<u>FRESCO C & D</u>	<u>1/ FARMER</u>	<u>FLASH- LIGHT A</u>	<u>1950 FACEPLATE</u>	<u>1958 AWF-58</u>	<u>1958 FITTER</u>	<u>1959 AWF-59</u>	<u>1962 AWF-62</u>
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1/ FRESCO E is the same as D but without afterburner and would have about the same performance as the A and B.
 2/ Combat ceiling is [redacted] for FRESCO D. 25X4
 3/ Data shown at take-off gross weight.
 4/ Internal fuel only.
 5/ Military power. 25X4
 6/ FRESCO D has [redacted]

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Page Paragraph
34 Table 5 Substitute new Table:

Table 5

Estimated Actual Bloc Jet Fighter Strength in Operational Units

<u>USSR</u>	<u>Mid-1962</u>
Day	4410
All-weather	<u>4890</u>
Subtotals	9300
<u>European Satellites</u>	
Day	2860
All-weather	<u>740</u>
Subtotals	3600
<u>Asiatic Communist</u>	
Day	1900
All-weather	<u>690</u>
Subtotals	2590
<u>Bloc Totals</u>	
Day	9170
All-weather	<u>6320</u>
Subtotals	15,490

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Page Paragraph
35 Table 6 Amend present Table as follows:

TABLE 6

OPERATIONAL SITES

<u>Prime Early Warning</u>	<u>1958</u>	<u>1962</u>
Token	325	135
New Type	-	<u>175</u>
TOTAL	325	310

GCI

Token	350	115
New Type	-	<u>295</u>
TOTAL	350	410

OPERATIONAL RADAR EQUIPMENTS

Air Search Types

Token	600	600
Gage & other new types	75	495

NOTE: Remainder of Table unchanged, including footnotes.

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PAGE PARAGRAPH

36 Table 7 - Amend Table as follows:

Estimated Actual Strength and Deployment of Certain Sino-Soviet Bloc Air Defense Equipment (Mid-1962)Jet Fighter Acft in Op Units

<u>AREA</u>	<u>DAY</u>	<u>ALL WEATHER</u>	<u>TOTAL</u>	<u>JET FIGHTERS REGIMENTS</u>
Northwestern USSR	670	720	1390	43
Western USSR	985	1070	2055	63
West Central USSR	600	900	1500	45
Caucasus	555	575	1130	35
East Central USSR	305	315	620	19
Far Eastern USSR	850	820	1670	51
TOTAL WITHIN USSR	3965	4400	8365	256
Soviet Forces East Europe	445	490	935	29
TOTAL SOVIET:	(4410)	(4890)	(9300)	(285)
Satellite Nations	<u>2860</u>	<u>740</u>	<u>3600</u>	<u>113</u>
TOTAL EAST EUROPE:	3305	1230	4535	142
Asiatic Communist:	1900	690	2590	76
TOTAL BLOC:	9,170	6,320	15,490	474

NOTE: Radars, AAA now under review.
Footnotes remain unchanged at present.

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ANNEX C, MAPS

Approximate Number of Bloc Airfields Suitable for Jet
Fighter Operations for Use in Connection with Map I.

Mid-1962

USSR:	470
European Satellites:	180
Asiatic Communist Nations:	180

Approximate Number of USSR Airfields for Map I:

West USSR:	145
Caucasus:	50
North West USSR:	92
West Central USSR:	92
East Central USSR:	38
Far East USSR:	<u>93</u>
	510

Estimated Fighter Strengths in 1962 for the Areas
Listed for Use in Connection with Map I:

Eastern Europe:	Day: 3305	All-weather: 1230
West USSR:	Day: 985	All-weather: 1070
North West USSR:	Day: 670	All-weather: 720
West Central USSR:	Day: 600	All-weather: 900
Caucasus:	Day: 555	All-weather: 575
East Central USSR:	Day: 305	All-weather: 315
Far East USSR:	Day: 850	All-weather: 1,670
Asiatic Communist Nations:	Day: 1,900	All-weather: 690

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Revised "Antiaircraft Artillery and Surface-to-Air Missile Deployments" have not been shown as it is not possible, at this time, to assess the rate of phase-out of gun artillery, nor to determine, in a geographic sense, the location of SAM complexes.

GEORGE G. DEVERALL,
Colonel, USAF
Chairman, AHWG

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