TOP SECRET
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D/I USAF PROPOSED CHANGES TO INITIAL DRAFT OF SE-36

SECURITY INFORMATION

1. Page 2, Paragraph 2. Change second sentence as follows:

. . . . . "In calculating stockpiles it has been assumed that the USSR will fabricate both all-plutonium weapons and composite weapons, and that it will produce as many of the more efficient composite type weapons as possible."

2. Page 5, Paragraph 8: Amend as follows:

8. Present strength of Long Range Aviation: Long Range Aviation, consisting essentially of three Air Armies, one in the Far East and two in the western USSR, constitutes the strategic striking force of the USSR. The TU-4, which was copied from the American B-29, is the only Soviet bomber, known to be in operational use, capable of carrying a bombs mass destruction weapons to distant targets. ~~In December 1952, the number of TU-4's believed to be in operational use was estimated at 900 aircraft.~~ As of 1 January 1953, a total of 900 to 950 TU-4's was estimated to be available for operational use. ~~(This figure was based primarily upon the Table of Equipment strength of Soviet air regiments known to be equipped with or in the process of being equipped with TU-4 aircraft.)~~ totals 1190 aircraft, but the TU-4 regiments currently are estimated to be at only 75 to 80 per cent of T/O strength.) ~~Only about 20% per cent~~ 180 TU-4's, ~~or about 190 TU-4's (seven regiments with a T/E strength of approximately 220)~~ of the ~~medium bomber~~ TU-4 strength aggregate are located in the Far East.

3. Page 6, Paragraph 9: Insert new table as follows:

Tot Postat Strength

	Mid-1953	Mid-1954	Mid-1955
Medium Bomber			
Jet	Possibly Prototype	10/20	120
Piston	1,000*	1,250	1,100
Heavy Bomber	Few	40/80	180
Total	1,000*	1300/1350	1,400

*~~Estimated actual strength~~ Table of Equipment strength of TU-4 units is expected to be ~~1,250 bombers~~.

4. Page 7, Paragraph 10: Revise as follows:

10. The TU-4, under normal operating conditions, is estimated to have a combat radius of ~~1999~~ 1700 nautical miles and a combat range of ~~3329~~ 3100 nautical miles with a 10,000 pound bomb load. Under cruise control conditions necessary to reach distant target areas, its speed would be approximately ~~175~~ 190 knots at an altitude of about 10,000 feet. However, it is capable ~~for a limited period of time~~ of attaining a maximum speed of 347 knots at about 32,500 feet for a limited period of time. ~~With a~~ Service ceiling ~~of~~ is 39,500 feet. Although there is no intelligence to indicate the Soviets have done so, it is considered they are capable of modifying the TU-4 to increase its range in the same manner that the American B-29A was stripped to produce the B-29B. This modification involves removal of defensive armament, except for the tail turret, and increase in the fuel capacity, with a net weight reduction of 2,600 pounds in take-off weight. So modified, a TU-4 would have markedly reduced defensive capabilities against interceptor attack, but its combat radius would be increased to 2,150 nautical miles and its combat range to 3,960 miles carrying a 10,000

pound bomb load. Considering the marginal range characteristics of the TU-4 in attacks against the continental United States it is believed the Soviets would give serious attention to all means of extending its range, including aerial refueling. With one refueling, combat radius of a modified TU-4 would be increased from 2,150 nautical miles to approximately 3,000 nautical miles, and on a one-way mission such an aircraft would be able to strike any target in the United States as well as the Panama Canal. ~~With technical modifications and improvements, the TU-4 by mid-1955 might be able to increase its combat radius to 2,650 nautical miles (3700 with one aerial refueling) and its range to 5000 nautical miles.~~ With moderate technical advances, it is possible that by mid-1955 the Soviets may be able to improve performance characteristics of the TU-4 somewhat, but there is no current evidence of output of the more powerful piston engines which would be essential to major improvement. ~~It would appear more logical that the~~ Soviets would seek to improve operating capabilities of the TU-4 by refueling techniques and devote future development and production effort to heavy ~~bombers and medium jet bombers.~~ Other

5. Page 7, Paragraph 11: Delete and rewrite as follows:

11. It is estimated that the prototype heavy bomber, assuming it is equipped with a turbo-prop power plant, may be available in a very limited number in mid-1953 and if so, will have a probable combat radius of 3,420 nautical miles and a combat range of 6,600 nautical miles with a bomb load of 10,000 pounds. By mid-1955 it is believed that technical modifications and improvements on this heavy bomber could permit a combat radius of 3,700 nautical miles and a combat range of 7,000 nautical miles with a

10,000 pound bomb load. Aerial refueling of this improved heavy bomber could be accomplished with TU-4 type tankers, thereby permitting increased range capabilities to permit attack on any target in the United States on a two-way mission basis.

6. Page 8, Paragraph 12: Delete and substitute:

12. Base Areas for direct air attack on the US: The closest base areas to the US are the Kola Peninsula in the northwest USSR, Soviet and Soviet-controlled territory along the Baltic and in Eastern Germany, and the Chukotski Peninsula in northeast Siberia. Of these three areas, the Chukotski Peninsula is nearest to the United States. From this area, TU-4's equipped as were the American B-29's which the Soviets had as models, could not reach the continental United States on two-way missions ~~are~~ Even on one-way, non-refueled missions could reach targets only in that area north and west of an arc drawn from about San Diego to Lake Superior. A modified TU-4 poses a more serious threat, since it could reach Seattle and return to base without refueling. With one outbound refueling it could cover almost as much of the US on a two-way mission as the unmodified TU-4 could reach on a one-way basis. Flying a one-way, non-refueled mission from Chukotski bases the modified TU-4 could reach targets anywhere in the United States except Florida. Some improvement in TU-4 capabilities may occur before mid-1955, but it would appear more logical to expect that principal effort would be applied to improving the Soviet long range refueling capability and to creation of a heavy bomber force. If the expected developments in this latter field actually take place, Soviet heavy bombers, in limited numbers, could operate from northeast Siberia on a two-way basis with one refueling against targets anywhere in the United States, and even

without refueling against targets located north and west of an arc drawn generally from central Texas through central New York. How well the Soviets would be able to utilize an intercontinental heavy bomber in the first year or two after it becomes operationally available can only be speculated upon, but if the bombers were in units it should be expected they would be utilized against the continental United States.

7. Page 9, Paragraph 13: Delete and substitute:

13. Logistics problems are difficult in the Chukotski Peninsula, but these could be minimized by advance stockpiling and use of the area for staging bases only. Bombers attacking the United States from northeastern Siberia would have favorable tail winds most of the year. Airfield information, however, is not sufficient to enable positive identification of any specific installation as a launching site or staging base for medium bombers. Markovo (65-41N 179-15W) and Anadyr/Mys Niamenny (64-48N 177-33E) could possibly support minimum operations by TU-4's, at least during nine months of the year. Other possibilities are Velkal, Tanyurer, Magadan, and Petropavlovsk. It is entirely possible that new airfields have been built without detection. The Soviets have emphasized use of frozen surfaces in the Arctic, which makes possible the wintertime use of airfields with a minimum of preparatory effort.

8. Page 9, Paragraph 14: Delete and substitute:

14. Present TU-4 aircraft based in the Kola Peninsula areas and Baltic-East Germany area could not reach the United States and return to their bases, even with one outbound refueling. Unless the Soviets develop a refueling capability which they consider would make both an outbound and an inbound refueling operation feasible, principal TU-4 threat to the United

States from these base areas will stem from one-way missions flown by modified aircraft possessing a combat range of 3,960 nautical miles. From the Murmansk area, such a range would permit Soviet bombers to reach targets roughly north and east of a line from Charleston, South Carolina, to southern Oregon. From the Baltic area, such a range would enable TU-4's to attack targets north and east of a line drawn generally from Charleston, South Carolina, through Montana. All of the industrial northeastern centers of the United States could be reached from either area. By mid-1955 it is possible that the Soviet heavy bomber program will have reached such a point that at least limited numbers could be used against the United States on a sustained basis. The estimated characteristics of such bombers should enable them to reach the New York-New England area on two-way missions from either the Kola Peninsula or the Baltic area. With one outbound refueling they could attack any target in the industrial northeast and return to home base.

9. Page 9, Paragraph 15: Delete and substitute:

15. The Kola Peninsula has two airfields -- Alakurtti, at the base of the peninsula, and Murmansk-Vayenga, nine and a half miles northeast of Murmansk -- which readily could be adapted to accommodate TU-4's. Eight other airfields in 1945 offered runways or take-off areas 4,500 feet or more in length. It is possible that some or all of these bases could have been improved to accommodate medium bombers, although available intelligence is insufficient to enable any exact assessment. As elsewhere in the Soviet Arctic, virtually all of these airfields are extensible and all will bear the weight of TU-4's during the six or more months of the year the ground

is frozen. During the spring thaw and summer months only permanent, all-weather runways of suitable length could be used. Both Alakurtti and Murmansk/Vayenga are favorably situated logistically, and great circle routes from this area would avoid overflight of nations friendly to the United States.

9. The Baltic-East German area has adequate bases to support large numbers of medium bombers. These bases are favorably situated with respect to communications and weather and are adequately served by existing transportation facilities. A major disadvantage is that great circle routes to northeastern parts of the United States pass over portions of Western Europe or Scandinavia and any attempted air strike might be detected early enough to provide warning.

10. Page 10, Paragraph 16: Change as follows:

16. Achievement of a high level of combat effectiveness has been retarded by lack of combat experience, ~~and by restrictions upon flying imposed by the Soviet security system~~. Intensive training has been underway for five years, but there is no evidence of extensive training in long-distance flying and navigation, ~~or of the development of operational aerial refueling techniques and equipment~~. No intelligence is available concerning Soviet in-flight refueling techniques do not impose serious technical problems and because the USSR has had access to the techniques and equipment employed in the highly successful US experience in this field, it would be imprudent to assume that the Soviets have not developed both the techniques and the equipment for operational in-flight refueling.

11. Page 11, Paragraph 18: Change as follows:

No intelligence is available concerning Soviet in-flight refueling capabilities. However, inasmuch as in-flight refueling techniques do not impose serious technical problems and because the USSR has had access to the techniques and equipment employed in the highly successful US experience in this field, it would be imprudent to assume that the Soviets have not developed both the techniques and the equipment for operational in-flight refueling.

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11. Targeting and Bombing Accuracy: The USSR is able to obtain ~~all~~ the data necessary for identification of most targets in the US under visual and blind bombing conditions. The USSR possesses optical bombsights equivalent to US World War II type models. Soviet aviators could, therefore, be expected to execute satisfactory bomb placement under visual conditions. The USSR has produced, and is equipping its TU-4 and IL-28 (light jet) bombers with blind bombing and navigational type radars of the US AN/APS-15 and AN/APQ-13 variety. It is estimated that a sufficient number of these items of equipment devices could be made available to permit their use in aircraft employed in attacks on the continental United States. The tactical accuracy of the Soviet blind bombing system is estimated at about 3000' CEP. [~~at 30,000 feet~~ target.]

12. Page 12, Paragraph 20: Delete and substitute the following:

20. Weather: The Soviets have consistently devoted considerable emphasis to both short and long range meterological forecasting. Special techniques for upper air research and improved synoptic methods are being developed for use in weather forecasting for periods longer than one month. By 1955 it is believed that the Soviets will have achieved a short range prediction capability in at least European USSR of 85% reliability as compared with the present reliability of 60%. This prediction capability plus extensive experience in meteorological research in the extreme northern latitudes, excellent weather reporting facilities in Siberia, availability of records of weather conditions which have prevailed throughout North America for many years and constant access to current North American weather conditions and forecasts should enable the Soviets to predict ~~weather~~ both route and target weather with reasonable accuracy.