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Copy No. 4
17 August 1976

MEMORANDUM FOR: Deputy to the DCI for the Intelligence Community

25X1 FROM: [redacted] USN, PAID

VIA: Chief, Production Assessment and Improvement Division

Director of Performance Evaluation and Improvement

SUBJECT: BACKFIRE

1. For your information, the following is a summary of where things stand in the Community regarding the BACKFIRE question, based on discussions with OWI, OSR, Air Force and DDR&E analysts, A/NIO/SP and [redacted], OPBD (ex-CO, FTD). 25X1

2. The Substantive Problem

a. A majority of the Community still believes the BACKFIRE is best suited for a peripheral attack role and is unlikely to be specifically assigned to intercontinental missions. The Air Force believes the basic design of the aircraft indicates the Soviets developed the BACKFIRE to perform a variety of missions, including intercontinental attack.

b. While no one disputes the intercontinental capability of the BACKFIRE (with staging/refueling/one-way missions as required), there are major uncertainties about its performance characteristics which result primarily from insufficient evidence on the aircraft's lift/drag, velocity, specific fuel consumption, operational weight empty, and fuel weight. This has caused significant differences regarding BACKFIRE's estimated performance. For example, on a high-altitude subsonic, unrefueled mission, the bomber's combat radius is said (in NIE 11-3-8-75) to be either 2900 N.M. (DIA, ARMY, AIR FORCE), 2700 N.M. (CIA), or 2400 N.M. (Navy). CIA 25X1 [redacted] is expected to complete in early September a reanalysis of their work on this problem which attempts

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to reduce the range of uncertainties and will also reduce their combat radius estimate from 2700 N.M. to probably as low as 2000 N.M. [redacted]

c. These differences in assessed capabilities become more meaningful, however, when viewed in the context of BACKFIRE's threat to the US. And here it all depends on the kind of mission selected. On high-altitude, subsonic range missions--using either the DIA/Air Force or last year's CIA estimates (5400 vs. 5100 N.M.)--the bomber could cover targets anywhere in the US and recover in non-hostile territory such as Cuba without staging or refueling. CIA's current reanalysis will have the effect of requiring the bomber to stage at Anadyr (in the Arctic), fly a high altitude subsonic range mission, and probably flame-out in CONUS or over water if it wants to cover all the continental US without refueling. On subsonic radius missions, if it is staged but not refueled, the Air Force would say it could strike targets in a large portion of the western US. With both staging and refueling, the BACKFIRE could cover virtually all the US on radius missions, using the Air Force's estimates. Using the new CIA figures, even with staging and refueling, it probably could not effect full coverage of the US on a radius mission; but could on a one-way flight. On intercontinental missions of all types, tanker support would of course be required if extended low-altitude operations were planned.

d. The above debate over BACKFIRE capabilities should not obscure the salient fact that the Community still does not have a good handle on just what the Soviets' intentions are for this aircraft which has been operational since 1974. (It may be of course that the Soviets, themselves, have not yet made hard decisions regarding the aircraft's mission(s).) While there is agreement that the BACKFIRE is a highly versatile aircraft capable of carrying out the various jobs of Soviet Long Range and Naval Aviation, the majority believes that supersonic dash and low-altitude penetration of heavily defended areas (e.g., in Europe and the Middle East) were prime considerations in the aircraft's design. However, the Soviets could indeed assign

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BACKFIRE to an intercontinental attack role and--to support this (Air Force) argument--all BACKFIREs seen to date have had refueling probes. Moreover, the options clearly remain open to the Soviets to modify the bomber to increase significantly its radius and range capabilities, although there are no signs yet of any such upgrading. If the BACKFIRE were to have an intercontinental role, the Soviets would almost certainly develop a compatible new tanker support force. But here again, there is no evidence of a Soviet attempt to increase their limited tanker capabilities.

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3. The Bureaucratic Problem

a. All interested agencies appear to have had equal access to all the available intelligence on BACKFIRE. However, there have been basic differences of approach to the data between that of the Air Force and CIA, and their respective contractors. [redacted] STAT

b. As noted earlier, the CIA/[redacted] sensitivity analysis should be published next month and will undoubtedly exacerbate the Agency's differences with the Air Force. In anticipation of this, Gen Keegan has sent a message to Mr. Bush and yourself (copy at Tab A) blasting what the Air Force has already seen of this analysis. From the USAF viewpoint, [redacted] used a selectively limited, highly suspect data base and improper assumptions in its study, the results of which are too dependent on analytical sensitivities, unacceptable in terms of commonly accepted aeronautical engineering norms, and, hence, inconclusive at best. OWI has responded to these charges and reaffirmed the validity of its analysis in a 6 AUG memo to the Director (copy at Tab B). 25X1 25X1

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c. Given the above, the State Department (INR) questions whether it is possible to pick a "best" BACKFIRE mission radius and believes that policy decisions (e.g., in relation to SALT) will have to be made without benefit of an agreed, unambiguous assessment of the bomber's performance.

4. Where do we go from here?

a. A panel of "neutral" experts (from NASA, Lockheed, etc.) is being convened by DD/S&T for an "in-house" review/critique of the CIA/McAir sensitivity analysis. This review should be completed by the end of August.

b. Concurrently, a Community interagency group (Air Force, Navy, NSA), under the auspices of WSSIC, is reviewing the CIA and Air Force FTD analyses.

c. In addition, a DOD group of outside specialists, headed by James Wade (DIR, SALT Task Force), is reviewing the different analytical methodologies being applied to the BACKFIRE problem and critically examining their results. They are expected to report their findings to the SECDEF in late August.

d. The results of the foregoing are to be presented to the WSSIC on 7 SEP 76 for resolution in so far as possible, and subsequent consideration by the NFIB.

e. As to the outcome of all this, the current best bet is that:

-- no Community agreement on BACKFIRE performance will be achieved; however,

-- the divergencies of opinion will be defined more precisely.

5. Conclusion.

a. The BACKFIRE controversy is obviously driven to a significant extent by bureaucratic/political sensitivities and equities. Nonetheless, it appears that all the data are "on-the-table" and that the process of arriving at the best Community viewpoint(s) on the matter is proceeding satisfactorily.

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b. Moreover, the heart of the intelligence debate--BACKFIRE performance--is an issue around which rational men can legitimately disagree. The evidence is inconclusive, the range of uncertainties is large, the analytical methodologies involved are exceedingly complex, and the answers one gets are determined to a large extent by the assumptions with which one starts.

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