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The Case Against A Space Boundary

1. A wide spectrum of proposals has been offered from many quarters on the problem of defining the boundary between "air space" and "outer space", beginning with the Chicago Convention of 1944 -- which dealt with air sovereignty -- up to the conclusion of the recent meetings (Aug-Sep 1967) in New York of the Scientific and Technical Subcommittee of the UN Committee on Outer Space. The latter meeting was the most recent attempt to establish internationally agreed criteria to be used in defining the demarcation line. In brief, all efforts to date to deal with this issue have been unsuccessful, generally because (1) there are no solid scientific or technical data which would allow a "line" to be defined with any degree of precision, (2) there is a general temerity, except in the case of some of the smaller non-space powers, to establish an arbitrary line because of an inability to clearly foresee the consequences of such an act, and (3) those countries (i.e., the U.S. and U.S.S.R.) carrying out observations from space platforms prefer to avoid the issue.

2. The definition of a demarcation line based on less than clear and indisputable data would be analagous to opening Pandora's Box. Once such a line were established through international agreement, it would not be a simple matter to change the decision. Countries granted sovereign rights over a finite amount of air space above their territories would not easily give up such sovereignty, and, based on past experience, attempts to alter such a decision would lead to extremely difficult and protracted negotiations with very uncertain results. Further, advancing aerospace technology would make any "line" drawn now unstable and outmoded in time, with unforeseeable consequences.

3. Following are reasons discussed in some detail which argue against the establishment now or in the near-term future of a demarcation line between air space and outer space. These arguments are listed under two headings, (1) "white", i.e., those arguments that can be discussed without security restrictions and (2) "black", those classified arguments which are related to the desire to protect the National Reconnaissance Program from the possible consequences of an international agreement on the definition issue.

I. "White" Aruments

4. There are no scientific parameters which lend themselves with any degree of precision to a definition of the line between air space and

outer space. For example, there is no precise line where the atmosphere ends and outer space begins. Although it becomes thinner and thinner, traces of the atmosphere extend upwards for many hundreds of miles. Use of such an approach to obtain a "line" would place it far above many satellite orbits and missile flight paths. It thus would not only be too high but would also be very uncertain.

5. The Von Karman Line, based on technological criteria applicable to the altitude at which an object loses aerodynamic lift and enters orbital flight, has gained some supporters. However, even this definition is imprecise, due to atmospheric variations and technical and mechanical differences in various vehicles. Before the Von Karman Line could be accepted as the demarcation point, all the variables that go into the determination of the altitude at which aeronautical vehicles no longer perform efficiently would have to be resolved by aeronautical scientists and lawyers. A precise line would be extremely difficult to define.

6. Related to paragraph 5 above is the very real problem in the definition issue posed by advances in aerospace technology. It is practically certain that a definition derived by consideration of current state-of-the-art aerospace craft would soon be overtaken by new developments. The issue is already confused by vehicles such as the X-15 which "fly" out of the aerodynamic lift area. Future vehicles which would fly in the atmosphere, then go out into orbit and return for aerodynamic landing, would further compound the difficulty of establishing a stable boundary based on scientific or engineering criteria.

7. Establishment of an arbitrary boundary, particularly if one were defined in the region at which earth satellites fly, would make it possible for a few states, acting arbitrarily, to hold up sapce activities for whatever reasons they chose, even though such space activities were intended for the general use and benefit of all countries.

8. Although a negative argument, the absence of an agreement on the definition issue has not led to international tensions and does not appear likely to do so. Because no one can clearly foresee the consequences of establishing a demarcation line, the best approach would be to let whatever controls are eventually applied to space activities be the result of a case-by-case analysis of the consequences of such controls, and, when such cases arise, develop international agreement as to specific controls needed to protect the interests of sovereign states. Of pertinence to this argument is the agreement already reached in the UN to ban the placing of weapons in orbit.

9. The failure of a wave of protests to develop in reaction to space activities conducted to date and the evolution of a general international attitude which appears to limit claims of national sovereignty to relatively low altitudes (e.g., the U-2 case) are important developments which reinforce the view that it is premature and unwise to define the space boundary now. This in turn argues for the continuance of a U.S. position in international forums which agrees to a discussion of definition but at the same time urges deferral of any action to set a boundary now.

II. "Black" Arguments

10. The arguments which follow are specially classified.

11. We must avoid definition of a lower limit to space so that no nation could claim sovereignty in the area in which we are operating reconnaissance satellites. This position must be based on a hard headed and practical appraisal of what is best for U.S. interest and survival. Moreover, we must keep in mind that other countries often exhibit varying attitudes about their commitments to carry out treaty obligations. The Soviets in particular have been pragmatic in this regard; their desire in the early 1960's for an agreement to ban reconnaissance satellites evaporated when their own satellite reconnaissance program became active.

12. Likewise, even though we could frame a definition that would not hamper our current and projected satellite systems -- out to the early 1970's -- reconnaissance technology of the future almost certainly will be in the vanguard of aerospace system developments generally, and we must avoid any definition now that could lead to international -- and unforeseeable -- legal difficulties later. We must maintain flexibility so that we can take advantage of advances in the state-of-the-art.

13. Even a lower limit set to be consistent with previous DOD fall back positions -- say, 20 to 30 miles -- would place all air-breathing reconnaissance vehicles in operation or under development (e.g., TAGBOARD) squarely within the sovereignty limits of overflown territory. Without such a limit, it might be possible to argue legally -- even though somewhat thinly -- that such air-breathing vehicles fall outside the jurisdiction of subjacent states that are overflown. It is relevant to this argument that the legal aspects of the U-2 flights over the Soviet Union were never officially determined. The more delicate questions, such as whether Soviet sovereignty extended to the altitude at which the U-2's were flying, were buried in the political aftermath of the incident and lost in the display of concessions and proposals which followed. Eventually the entire

issue was brought to a close by the U. S. agreement to refrain from future overflight of the U. S. S. R. It might well be to our advantage to keep available an argument for the legal legitimacy of high altitude aircraft (or drone) overflight by avoiding a definition of the upper reach of state sovereignty.