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*Office Memorandum* • UNITED STATES GOVERNMENT

TO : AD/RR

DATE: 12 February 1953

FROM : OCh/R

SUBJECT: Evaluation of CIA/RR PR-22, "Production and Consumption of Aluminum in the Soviet Bloc"

1. On two careful readings of Parts III to VI of this report, I have been unable to find any references to Parts I and II or even any passages where this earlier material advances my understanding of the problem. My own feeling is that a technical description of this kind, however interesting or erudite it might be, just gets in the way. The average reader, not having been advised to the contrary, is likely to feel that he has to carry this baggage through the essential parts of our report and, if he doesn't see the relevance, will frequently conclude that he has missed something. I suggest we deny ourselves such purple passages unless necessary to the understanding of the problem at hand.

2. The marginal material in Part II is very well documented, at least on the surface, since Appendix C contains 23 specific references. In contrast, the crucial figures in line 1 of table 2 and all the equally crucial estimates in table 3 are described merely as CIA estimates. The reader is not given the slightest hint as to whether these are firm figures, reasonable estimates or wild guesses.

3. On page 13, 2nd paragraph, I cannot reconcile the figures in the first two sentences. Hungary supplies more than 70 percent of USSR requirements, (shown in table 2 to be 83 percent of total Bloc requirements) and presumably all of its own requirements (another 12 percent of the Bloc total). How does this add up to only 50 percent of the total for the Bloc?

4. The consumption of old scrap in the year 1952/53 is estimated at 20,900 metric tons (first paragraph, page 2). This estimate is derived largely from U. S. operating experience, and is I believe much too high on the following reason. It is well-known, and could indeed be derived from a priori reasoning, that the generation of old scrap in a given year is not directly related to the production of primary aluminum in that year, but is a complicated and unknown function of past production and other variables such as price of scrap aluminum and for that matter of scrap steel which would in most cases be a more important determinant of the decision to scrap a piece of machinery. In any case, past production is an important factor. For illustrative purposes, suppose we assume that the volume of old scrap flowing to the secondary refineries is directly related to the volume of primary production over the past ten years. In the year 1949, from which the ratio was extracted, U. S. primary production (and imports - exports) was some 11% of the total production (and net imports) over the preceding ten years; for the Soviet Union the corresponding figure for the year 1952-53 was 23% (after allowance for imports and for stockpiling which obviously generates no old scrap - there was no net U. S. stockpiling in the 40's). This would indicate that the ~~consumption of the USSR~~ <sup>is 14 + 15</sup> ~~is 14 + 15~~ 4

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<sup>Bloc</sup>  
is about twice what it should be. The matter is even worse for 1955. By that time current USSR production is estimated 35 to 40% of the net production for 1945-54. In addition, it would appear that the scrappage rate would be considerably lower for a scarcity economy like Russia's than for a lush one such as ours with a high obsolescence rate. 1/

In view of some of the large animals swallowed elsewhere in this report it may seem silly to strain at this gnat which would not affect the estimates by more than 3 or 4 percent even in 1955. However, in view of the possibility that this report might be brought to the attention of some picayunish aluminum expert, I believe it behooves us to show a little sophistication in these matters.

5. The documentation on consumption estimates leaves something to be desired. "Since such a lack of accurate information was encountered, the approach was taken of obtaining estimated aluminum consumptions by various consuming industries, adding a more or less arbitrary factor---and totaling the results." (Top of p. 18) There must be a great deal more in this than meets the eye because in Appendix A (methodology) the consumption estimates are declared to be "satisfactory."

At the very least, the military estimates might have been tied into the currently accepted estimates of aircraft production, requirements for transmission lines to whatever we have on electric power, etc. This might leave a sizeable residual but it appears to me preferable to tie some proportion of our consumption estimates to the work of other Divisions, than to guess at them all. If this were done, I wouldn't even despair of preparing an estimate for 1955, which was not done in this report. I believe, further, that in preparing consumption figures, the branch papers should stick to honest estimates, honestly described, and leave it to the integrators (D/A) to fill in the gaps where no genuine estimate is possible.

6. With respect to reserves, p. 19 and 20, these figures are obviously so important that I believe the reader is entitled to know how they are arrived at. After all, one does have to go through some mental process to arrive at a figure and if this process can't be described I would be inclined not to publish a figure.

7. In the last paragraph on p. 20, I fail to see even the appearance of a contradiction in the policy of importing materials to build up a stockpile. In fact, our own stockpile consisted originally of materials for which we were dependent in whole or in large part on foreign sources of supply, and therefore could be built up only by imports. More recently the list has been

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1/ There is a further upward bias in the estimate owing to a rather peculiar assumption in the method of deriving it. On page 14 it is stated that the ratio of all secondary production (new and old) to total production is 30 percent for the USSR, as compared to 23 percent for the US for 1949. However, the US ratio of old to total scrap is applied, not to the 23 percent but to the 30 percent. This implies that the generation of old scrap is somehow directly related to the scrappage factor at the mills, obviously an absurdity.

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expanded because of the increasing probability of atomic attack against vulnerable industries. The straw man device is effective only if the straw is hidden from the reader and is skillfully revealed by the shrewd analytical powers of the writer.

8. The statement on vulnerabilities (p. 21) is a little perplexing. Granted it would be annoying to the aluminum producer to have his electric power stopped. It might also be embarrassing to have an atomic bomb dropped on the mill itself. Is a thermal plant more vulnerable than a hydroelectric plant? According to table 3 primary aluminum is produced in only 7 plants and of these, 2 plants produce something over 50 percent. If I wanted to cripple the aluminum industry I'd be inclined to do it directly rather than hunt around for the plants that produce the switchgear required for the power plant that serves the aluminum mill.

9. Again, in the intents of sophistication, we might suggest some skepticism or at least surprise that the Russians would store a substantial proportion of their aluminum stockpile in Moscow, which the Russians must consider a high priority target area. (p. 20) Even we wouldn't do that.

10. On the whole, the conclusions (p. 21) and the summary (pp. 1 & 2) do a good job of pulling together the considerations advanced in the text. I believe, however, that the first sentence in part VII is very misleading. If I were to summarize the textual material on the crucial matters of production consumption and reserves I would not represent the results as conclusions drawn from the evidence but would put the matter somewhat as follows: "We have some evidence that the Soviet Union has accumulated reserve stockpiles of aluminum for use in a war emergency. We do not know, however, what these stockpiles now amount to, when they were accumulated or whether and to what extent they are now being increased. In view of the importance of aluminum and the industry's vulnerability to bombing, it is reasonable to assume that stockpiling would be given priority over all current requirements except military and the most essential industrial uses. If, as estimated, current production and imports are set at something over 300,000 metric tons, and military and essential civilian requirements at 230 thousand metric tons, the current year's addition to the stockpile would be something short of 90,000 tons."

11. I don't believe that statements such as "any great expansion would cause a strain on the present Soviet Bloc economy." (p. 21) Apart from the vagueness of the expression "any great expansion," it needs to be recognized that in an economy operating under forced draft, everything causes a strain and there is no point in singling out a particular activity unless there is reason to believe that this is a marginal item and would be dropped or curtailed if the over-all strain proved to be unbearable.

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To sum up, the documentation supplied with this report is quite inadequate. The statement in Appendix A that the estimates "are based on the review of hundreds of sources and a plant by plant survey of the Soviet and European Satellites" (p. 23) is superficially impressive but may well be misleading. The man who must base policy decision on intelligence reports is interested in the results of the search, not the duration thereof. He certainly is entitled to more than a statement that one set of estimates, accounting for 17 percent of the total are more firm than another, accounting for 83 percent. Incidentally, I can't resist pointing to the rather peculiar alternative offered the reader in the second sentence of Appendix A. If the satellite estimates are not more firm than the Soviet, then the former are at least accurate within a narrow margin of error. But that means that the Soviet estimates, being now the firmer of the two, are ~~more~~ accurate within an even narrower margin of error. In the absence of adequate documentation, I feel that much of this report is of limited usefulness as a research report, and worthless as a guide to policy-making.



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