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WASHINGTON, D. C. 20301

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Authority: EO 13526  
Chief, Records & Declass Div, WHS  
Date: DEC 23 2014

13 January 1978

Doc #37

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I find this convincing.  
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MEMORANDUM FOR SECRETARY OF DEFENSE

SUBJECT: The Case for the 120mm Smoothbore

Since I'll be away (NATO workshop on LTDP and Wehrkunde) till 29 January, here are my own considered views on why we should choose the FRG 120 mm gun. LTG Cooper (who just spent three months on one of the Army evaluation panels) shares these views. To us, the three key issues which should drive the decision are: (a) how much more growth potential is needed to hedge against an uncertain but evolving threat; (b) is the added cost acceptable; and (c) how will NATO coalition needs best be served?

NATO  
- 120 gun

1. Need vs Threat. As we read the Army's own assessment of the latest trials, the one key difference from those a year ago is that the FRG and UK 120mm with improved ammo (thanks largely to us) no longer show up inferior in some respects to our 105mm with our improved round. In fact the FRG gun was marginally superior in many respects, even with a less advanced round than our own (and would be more so if our best ammo design were used). Indeed the chief technical advantage of the 120mm is its greater growth potential if more punch is needed.

NA-2 451.6

But do we really need a bigger gun? Not against the T-72 or even an improved tank with XM-1 type (BRL-1) armor. In fact the 105 does well against even better armor (BRL-2). But is this the limit of the possible threat, looking out to the 30-year useful life of the XM-1? OUSDR&E sees major new potentials in armor, for example. Moreover, you've seen that the Soviets already <sup>have</sup> a T-80 tank under development, which they regard as much better than our XM-1. No one knows what they might do beyond that, but we do know their great emphasis on armor and heavier guns (their T-72 is now evaluated at 125mm). Hence when confronted with threat uncertainty in such a key area, I see merit in overinsuring rather than underinsuring (it's cheaper than later expensive retrofit too).

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2. Cost is not out of sight. But how much extra should we pay for this added insurance? There will obviously be a real delta to going 120. The biggest variables are how much new ammo we'd require of what design over what period, especially training rounds (moreover we also would be buying much more advanced ammo soon even if we stayed 105). The delta could vary from roughly, \$0.5B to \$2B, the latter an estimate of full 30-year life cycle costs. But even this would be only a 4-5% differential, and Ken Cooper is confident that the biggest single added cost--training rounds--could be sharply reduced.

Classified by Advisor to SecDef on NATO Affairs  
~~EXEMPT FROM GENERAL DECLASSIFICATION SCHEDULE OF EXECUTIVE ORDER 12958, EXEMPTION CATEGORY 3~~  
DECLASSIFY ON: 11 Dec 2003

~~SECRET~~ 15-M-0239

SEC DEF CONTR No. X-0120



380-81-0202, 4x65, NATO 451.6 (Jan-Jan) 1978

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Moreover, we could probably get the FRG to join in funding development of a superior KE round to what they now have and other new concept rounds we are just beginning to dream about (we're way ahead in ammo technology). We might even get them to agree to buy such ammo from us if our cost were lower than Rheinmetall's (as is highly likely). If so, we could recoup some of the delta, and produce a better NATO deterrent to boot. Hence OSD should press Bonn to invest in say 50% of development cost of better 120mm round, on grounds this would benefit both US and FRG (why not broach this when Schnell is here?).

Another questionable cost element is Rheinmetall's opening bid for not only royalties but offshore procurement in FRG of at least 1500 guns and 400,000 rounds. But we've gone back hard, and already have informal word FRG can sweeten this or at least agree to our producing for our own use all guns at Watervliet plus ammo at our own facilities. So the Army's estimated \$330M for licenses and offshore buys is no longer valid.

*We can probably get (+ that with) a fee to Rheinmetall but no more procurement from them for U.S. production in itself.*

3. Coalition Considerations. If growth potential argues modestly for 120 and cost delta argues only modestly against, then the decision should turn on a third key factor which the Army evaluation group deliberately did not address, but Cliff, Walt and Percy will. This is what Army calls "political", but I'd call NATO or "coalition" considerations.

I'm not talking just about interoperability. It argues for the FRG gun rather than the British on numbers alone. Since FRG is already going 120, there will gradually be more 120s and fewer 105s. But even if we went 120 too, the crossover point wouldn't come till late 80s. Thus the S/I case for the 120 is not dominant either.

Far more central is that what we do on the tank gun has become, for better or worse, the chief test of whether US is serious about Buy European and two-way street. Not just Bonn but rest of Allies are watching closely and sceptically whether the US will match its words with deeds. Moreover, with Gepar probably out of the running, the tank gun is our last major chance before the May Summit to show we mean what we say. I know of no other high visibility program on which a decision would have comparable impact. Hence our gun decision has acquired a symbolic importance that can critically affect the credibility of all the new US initiatives to strengthen NATO.

Much more is at stake here than the sanctity of the President's word. If we don't go with the FRG gun, can the President persuade our Allies at next Summit to approve and fund all the common programs we seek in the new LTDP? For example, whether we link them publicly or not,

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our 120mm. decision is inexorably linked to Bundestag action on AWACS and on many other potential Allied buys of US hardware instead of their own. In fact it's in the Army's own interest to go 120 if it wants to sell or jointly develop PATRIOT, STINGER, AHAMS, GSRs, helicopters, etc. All this would strengthen NATO commonality too. In short, the NATO aspects of the gun decision are much more significant than the modest technical or cost differences.

4. In the light of the assessments to date, We can now in good conscience make a strong Hill and public case for selecting FRG gun without fear we are degrading the US soldier's ability to fight and survive. Here are the arguments I'd use:

a. It has greater growth potential. The Soviets will probably field a tank with sophisticated armor by the mid-80s, and could do better yet over the longer term (just as we could). While our 105mm could perform very well against present and projected Soviet tanks, the 120mm has greater potential both in the kinetic and HEAT rounds. Therefore (just as the UK, FRG, and indeed Russians have) it is desirable to hedge against an uncertain future threat via the greater growth potential of a 120mm gun by the mid-80s. It is better to overinsure than underinsure (especially since either gun would be a small fraction of the cost of the XM-1 tank).

b. The combustible cartridge case seems safe. Despite our early experience with the Sheridan's 152mm gun in VN, all safety aspects seem to be resolved or solvable. We'll do some additional testing which will not be finished until long after 1 February 78. But the Germans, French, and now Russians (with T-72) have no reservations about combustible case.

c. Stowed load is adequate. While the Army prefers 55 rounds, the studies justifying this number are not compelling. With 120 ammo, the XM-1 could stow between 40 and 48, depending upon how many rounds (up to 8) we store unprotected in the turret. The British, Germans and French all believe 40 is adequate. Some analytical studies show that the average tank fires only about 10 rounds before being hit and out of action. But these studies are incomplete also, since they cite averages not distributions and don't take into full account how soldiers in combat often waste ammo by shooting first at an enemy tank they see suddenly without waiting to see if it has already been killed.

d. Interoperability will be greater over time if we go for FRG rather than UK 120, because far more Allied battalions will be equipped with former. True, there will long be large numbers of 105mm tanks (both US and FRG) in any case. FRG is not currently planning to upgrade its 2400 Leopard Is (105 gun) before the 1990s. Since the FRG has already decided to go to 120mm smoothbore for Leopard II and the

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UK will stick to its 120mm rifled gun, however, there is no longer any chance of standardizing on the 105. Moreover, our going 120 will promote a US development and production effort using our expertise on 120 ammo and guns. The storage of 120mm rounds throughout Germany will enable more flexible support of FRG and Benelux as well as US units.

e. Costs are not out of line. While naturally there is added cost in going 120mm, it is well within reason (likely to be less than 5% of the cost of the tank at the outside and probably much less).

f. Joint ammo development is a condition, because it will enhance both US and FRG capabilities via FRG collaboration in advanced US ammo design and possible procurement. This also would help recoup US costs. ||

g. Lastly, it will show Allies we mean business about two-way street. This is important to validate greater armaments cooperation for the mutual defense. Allies are constantly buying far more from us than we from them, and will probably continue to do so. But where Allied hardware is excellent, we must consider it in return if only to protect our own future markets.

5. The Army's concerns should be met. I believe the Army's civilian leadership (Alexander, LaBerge, Pierre) see the larger issues clearly. The uniformed leadership may be less enthusiastic but would also move out smartly. But they are all deeply concerned lest an extended DoD/Hill debate about tank guns delay their cherished XM-1 program. Since the XM-1 is a splendid tank (superior to Leo II), the Army is entitled to assurances that OSD will not penalize them by making them eat added 120mm. costs (only \$10M in FY 78 funds). Indeed, since XM-1 is so good, why not also give Army the funds in the out years (FY 81 and beyond) to enable faster (120 per month) rate of production and an earlier XM-1 buyout? This would both save taxpayer's money and provide better NATO capability. OK  
= questionable

6. Timing of any Conversion. Since we are hedging mostly against a threat in late 80s or early 90s, there is a case for postponing conversion. But this would be wasteful, entailing expensive retrofit. Moreover, stalling would undermine 2-way street rationale. Therefore we should press Army to start upgunning as soon as possible. Their current best guess is early 1983, by which time I predict a new much improved Soviet tank's appearance will make us look prescient. ✓

7. A game plan is needed. Whether or not we decide on 120, we need to firm up our game plan and marshal our arguments (pro or con)

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for Hill, media, Allies (not just UK and FRG)--all before 1 February deadline. I am confident that SecArmy will suggest several options to SecDef, because any wise decision must be based partly on broader NATO considerations not just Army interest.

8. Conclusion. While we as your NATO advisors naturally would emphasize coalition considerations, we are persuaded that the US should choose the FRG 120mm not just because: (1) it would help convince Allies we are serious about two-way street, thus paving the way for other armaments cooperation in the common defense; but also because (b) its greater growth potential is a prudent hedge against an evolving threat; (c) it would enhance NATO's overall defense capability in the key Center Region where the US and FRG provide three fourths of the forces; and (d) these factors far outweigh the modest added cost entailed.

*RWK*  
R. W. Komer

*KBC*  
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cc: DepSecDef  
Dr. Perry  
Mr. McGiffert  
Mr. Murray

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Date: **DEC 23 2014**

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Chief, RDD, ESD, WHS *54.5. C. 850*  
Date: **23 DEC 2014** Authority: EO 13526  
Declassify:  Deny in Full: \_\_\_\_\_  
Declassify in Part: \_\_\_\_\_  
Reason: \_\_\_\_\_  
MDR: **1.5 -M- 0239**