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NATO Standardization and Licensing Policy — Exploratory Phase

VOLUME I: EXECUTIVE SUMMARY

by

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Prepared for:

European/NATO Directorate
Office of the Assistant Secretary of Defense
for International Security Affairs

November 1976

Contract No. MDA 903-76-C-0284

Contract Expiration: 31 December 1976

Short Title: NATO Standardization

Contractor: General Research Corporation

Contract Project Director: Robert A. Gessert

Phone Number: 893-5900

**GENERAL
RESEARCH**



CORPORATION

WESTGATE RESEARCH PARK, McLEAN, VIRGINIA 22101

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Volume I is the executive summary; Volume II contains the main report and appendices; Volume III supplements the main report by GRC with an extensive survey of European industrial capacities and perspectives on standardization conducted by Hoagland, MacLachlan & Co., Inc., subcontractor to GRC.

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PREFACE

Weapons standardization has been an elusive goal of NATO since its founding in 1949. It is widely recognized that NATO suffers diminished combat capability as a result of lack of standardization. Standardization and interoperability have recently been given new urgency in the light of Soviet and Warsaw Pact conventional force modernization programs. Also, the cost-budget squeeze in NATO countries, caused by competing domestic priorities and increasing R&D, procurement, and manpower costs, has added economic incentives to the military incentives to achieve greater collective military effectiveness and more efficient use of collective resources through weapons standardization and improved interoperability. New initiatives have been taken on both sides of the Atlantic to develop better NATO policies, institutions, and procedures to address the long-standing problems of standardization and interoperability.

Both the US Congress and the Executive Branch have committed the United States to greater cooperation with European allies in achieving the goals of NATO standardization and interoperability on the basis of a "two-way street" across the Atlantic in weapons selection and acquisition. Both have also singled out licensed production or co-production of weapons developed by another country as a promising device to this end. Because of this emphasis on licensing, the Office of the Assistant Secretary of Defense for International Security Affairs (ISA) contracted with the General Research Corporation (GRC) in June 1976 for a two-months exploratory phase of assistance in evaluating weapons licensing policy within NATO. To perform the study, GRC augmented the capabilities of its own staff with the assistance of a subcontractor and consultants

who have extensive experience in NATO political, military, and industrial matters. Full documentation of the literature examined and of the officials in the US Executive Branch, the Congress, European Embassies, and industry who were interviewed is provided in Volume II, which contains the main report and its appendices. The subcontractor, in Volume III, has provided a survey of the European defense industrial environment within which new US initiatives regarding standardization and interoperability will have to function.

The authors of this report express their deep appreciation to the numerous officials who gave generously of their time to the interviews conducted in this study; to Major General Richard C. Bowman, Director, European and NATO Affairs, ISA, who provided study guidance and encouragement; to Mr. Jerrold K. Milsted, Special Assistant to the Principal Deputy Assistant Secretary of Defense, ISA, who served ably and efficiently as the Contracting Officer's Technical Representative; and to COL Larry J. Larsen, Chief, and COL Harold W. Holtzclaw, Project Officer, in the NATO Standardization Division, ISA, for their many suggestions, documentary search assistance, and support in obtaining interviews with busy officials.

The views and judgments expressed in this report are those of the authors and do not necessarily reflect the views of ISA or any official interviewed in the performance of the study.

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EXECUTIVE SUMMARY

PURPOSE AND SCOPE

The stated purpose of this study is to "examine, evaluate, and document aspects of weapons licensing policy within NATO" as a part of overall standardization policy and "to recommend to the Office of the Secretary of Defense selected policy approaches that might further the goals of NATO standardization and interoperability."

Theoretically weapons standardization could come about in NATO as the result of common procurement from a single source or through individual procurements from multiple sources against a standard design. Neither approach has worked very well in the past or holds clear promise for the future. "Weapons licensing policy," encompassing licensed production and co-production, has therefore been proposed as a more immediately promising alternative.

The terms "licensed production" and "co-production" are used somewhat loosely and largely interchangeably in many discussions and documents on standardization in NATO. For the purposes of this study, licensed production is production made possible by agreements under which developers of military hardware provide data, patent rights, technical assistance and whatever else is necessary to enable production of the desired hardware by a source in another country. The developer is usually compensated by licensing fees and/or royalties on sales and various other means.

Co-production, more broadly, is any arrangement, either through government-to-government agreement, or through specific licensing procedures by designated commercial firms, to permit production of specific equipment or components thereof in several countries. Co-production

could result from direct government-to-government agreements without the direct involvement of commercial firms in negotiating licensing agreements. In general, however, co-production involves licensed production at least of components and thus presents many of the same advantages and disadvantages of licensed production.

The study is exploratory rather than definitive. Conducted within two months, research examined and assessed:

- Current US trends affecting weapons licensing for co-production within NATO
- Previous patterns of licensed production within NATO
- European political institutions and policy trends that would affect licensing policy
- The prospects for licensing and other approaches to standardization from a European industrial perspective
- Priority NATO system requirements that could be candidates for licensed production

Conclusions and recommendations are presented concerning the role licensed production may be expected to play in achieving greater standardization or interoperability of weapons within NATO and some of the most promising policies and steps that should be pursued to facilitate that role.

BACKGROUND

Within the past two years both the US Congress and the Executive Branch have made major public commitments to the goal of achieving greater standardization of weapons and equipment in NATO. Three successive Defense Appropriation Authorization Acts have carried significant amendments that have expressed the intent of Congress to achieve this goal. The most recent Act (for FY 1977) has removed certain legislative obstacles to achieving NATO standardization and has singled out licensed production of weapons as a promising device to be pursued. In his address to the NATO Summit meeting in May 1975, the President made a major commitment to the NATO Allies to pursue the goal of weapons standardization.

This was preceded and followed by concerted Defense and State Department activity to formulate US policy on NATO standardization and to take certain initiatives that would facilitate coordination of European and US policies affecting R&D and procurement to achieve greater standardization. The second annual report of the Secretary of Defense to the Congress on NATO standardization early in 1976 also committed the DOD to pursuing licensed production of weapons as a principal device of standardization.

APPROACH

For this study, GRC assembled a team of senior staff members familiar with NATO problems and a group of consultants with long and senior-level experience in political-military affairs. In addition, GRC engaged the services of Hoagland, McLachlan & Co., Inc., a senior management and industrial consulting corporation with wide experience in the European armaments industries, to assist in the study. Research consisted principally of examination of documentary evidence and interviews with selected officials and knowledgeable representatives of industry. Documents examined included government reports, license agreements, staff actions, and case histories as well as studies produced by other contractors, institutes, and scholars. Personnel interviewed included Congressional staff, DOD and State Department officials, officials and staffs of the principal NATO member embassies in Washington, and senior industrial representatives. Appendices in the Main Report list both the documents examined and the personnel interviewed. ✓

US TRENDS AFFECTING LICENSING AND CO-PRODUCTION IN NATO

In recent years, there have been far-reaching changes in the context in which NATO standardization and licensing policy must be examined. The United States' formerly dominant position as the principal supplier of NATO's defense equipment has been increasingly eroded. Straight sales of US weapons systems to European NATO nations are now difficult or impossible to achieve, and growing numbers of European-designed and European-produced systems compete in the NATO market place. There is widespread discussion of the "two-way street" in arms transactions within NATO, as the European allies demand what they regard as a fairer share of Alliance arms sales.

Both the United States and its NATO partners subscribe publicly to the goal of standardization, and both recognize that past efforts to achieve that goal have been singularly unsuccessful. New approaches, such as a NATO "common defense market" are being considered. But however desirable such sweeping approaches may be in principle, they may not be within the art of the politically possible, at least in the near future.

Recent attention has also focused on less ambitious approaches or devices--measures that can contribute to standardization and consequently to improved military effectiveness but that, at the same time, are likely to be economically viable and politically palatable in the short run. The current emphasis within NATO Europe on the goal of interoperability is compatible with such a pragmatic, limited-objective approach. Similarly, present interest in licensed production and co-production in the US Government (and to some extent US industry) focuses on a specific vehicle for moving toward military standardization that might be said to represent a compromise between the extremes of US protectionism (and "Buy American") and some form of supranational NATO defense procurement mechanism or an Atlantic common defense market.

Congressional Interest

As noted previously, the Congress has been actively and constructively engaged in considering the underlying policy aspects of the standardization problem and has taken major legislative steps designed to strengthen the legal basis for US standardization efforts. There is some question concerning the depth and durability of Congressional support for standardization in general or for licensed production in particular. But the central fact remains that the Congress has formally subscribed to the desirability of standardization and interoperability of NATO equipment, and has endorsed licensed production as a useful technique for achieving US objectives in this area.

Executive Branch Interest

Activity in the Executive Branch has included President Ford's strong statement in support of standardization and cooperative production at the

NATO Summit meeting in May, 1975; a State-Defense Department Colloquium on the implications for foreign policy and industry of standardizing military equipment for NATO; a major US initiative in NATO during 1975 on the standardization issue; and considerable effort devoted to improving intra-governmental machinery for coordination of standardization activities and to elaborating Executive Branch policy views. These views have been reflected in DOD reports to the Congress, in State-Defense instructions to the US Mission to NATO, in policy directives issued by the Department of Defense, and in testimony by State and Defense Department officials at a major Senate hearing in March 1976. A central feature of Executive Branch actions has been a growing recognition that carefully devised licensed production agreements can make a major contribution to NATO military standardization while taking into account purely national concerns about R&D, employment, and markets for weapon sales.

Industrial Interests

Activity within the US Government has been mirrored to some degree by growing US industry concern over the implications of increased emphasis on NATO standardization and on cooperative production arrangements. The defense industry as a whole probably retains a strong instinctive preference for producing and selling in open competition. But in a political-economic climate that is reflected in the phrase "co-production or no sale," many US firms are accepting the stark proposition that cooperative production agreements offer at least an opportunity to share in the market, with the alternative being no share at all. Thus, there are indications within US industry of willingness to settle for licensed production and readiness to tackle the problems associated with devising effective licensed production arrangements. ✓

The overall trend in the United States definitely points toward increasing reliance on licensed production arrangements and to the need for actions to reduce the not inconsiderable obstacles that stand in the way of optimum use of licensed production as a device for promoting standardization and interoperability in NATO.

PREVIOUS PATTERNS OF LICENSED PRODUCTION

Although newly promoted as a device for achieving weapons standardization or interoperability within NATO, licensed production and co-production have had a long history in NATO. Patterns can be distinguished in this history largely on the basis of the type of system in question, the urgency of the military requirement for it, the technological capability of the user to develop and produce the system, and the costs and industrial consequences of independent development and production. In terms of these variables, four broad patterns can be identified. In the order of historical occurrence, with most continuing to this day, they are:

1. Ad hoc adoption of an ally's system. (The ad hoc adoption and licensed production of another country's proven system by either the United States or a European ally to meet a specific immediate requirement.)
2. Transfer of US technology to Europe. (Promotion and adoption of licensed production to effect transfer of US technology and to support allied industrial strength.)
3. Co-development and co-production. (Pooling of resources and co-development of a complex system by two or more NATO partners, followed by co-production or licensed production of component elements.)
4. Competitive common selection. (Licensed production or co-production undertaken to facilitate common selection and procurement among competitive systems.)

Ad Hoc Adoption of an Ally's System

This pattern is the oldest and most frequent pattern followed. Many cases can be cited of adoption by a European NATO member of a US-developed system to meet a specific military requirement. Either the adopting ally has an urgent need for the type of system, lacks the technology to develop it, or chooses for economic considerations not to invest the R&D to produce an independent system when an adequate system already exists. An alternative to licensed production is direct purchase from the foreign source, and this alternative was followed for many years by European NATO members. The British decision in 1964 to acquire F-4 PHANTOMS

and the later German decision to acquire Sikorsky CH53-G medium transport helicopters on licensed production bases are only major examples of the European shift away from direct purchase to licensed production in such situations.

What is generally less noted is the extent to which the US has adopted European developments and designs for licensed production. For the US, licensed production has always appeared preferable to direct purchase when a specific immediate need occurred. Examples include: (1) the US attempt during the Korean War to produce an American version of the British B-57 CANBERRA, (2) the US Navy's attempt in the early 1960s to upgrade its existing gun fire control system by Americanizing a Dutch system that had been built around a NATO specification, (3) the US Army's attempt to fulfill an immediate combat need by using Expedited Non-Standard Urgently Required Equipment (ENSURE) procedures to acquire production rights to the French AN/TPS-58 radar system, (4) the US Army's acquisition of the British 105 mm tank gun from licensed production and its likely acquisition of the Belgium MAG-58 machine gun under similar arrangements. Even when direct purchase has been followed as by the US Marine Corps' acquisition of over 100 Hawker-Siddeley AV-8A HARRIERS, licensed production has been promoted as an alternative that would ensure a more reliable and secure production source and maintain US employment.

Transfer of US Technology to Europe

A pattern almost as old as the previous pattern and one that has had more long-term consequences was the pattern developed in the late fifties and early sixties of intentional transfer of US technology to European NATO partners to facilitate their development of a sophisticated military technological-industrial base to meet long-term requirements as well as immediate needs. In response to and under the impact of dramatic Soviet achievements in aerospace and military technology, President Eisenhower announced in 1957 a policy of sharing US technology with European NATO partners. Under this policy, the European NATO members eventually produced under license arrangements nearly 1000 F-104G STARFIGHTERS, more than 4000 HAWK air defense missiles, 5000 SIDEWINDER air-to-air missiles,

and 4000 BULLPUP air-to-surface missiles. Co-production of the M-113 armored personnel carrier in Italy is another, though more limited, example of the transfer of technology and production know-how. A great deal of NATO standardization was achieved in the process of such transfer as nearly every European NATO partner participated in one or more of these programs. The pattern also accomplished its aim of assisting massively in the rebuilding of Europe's industrial base for greater self-sufficiency in weapons production. Because of Europe's increasing self-sufficiency, this pattern became less feasible and European industry became more capable of offering its own competitive designs.

Co-Development and Co-Production

As European industry emerged from the relative technological backwardness of the 1950s, it began to offer and to seek far more development initiative and experience than the status of being a mere licensee allowed. However, for most complex or sophisticated systems, R&D costs ran higher than many individual national military budgets would support - especially across any significant spectrum of systems from high-performance aircraft to tactical missiles to advanced electronics. The multinational programs in the previous pattern had also given European countries and companies some experience in multinational cost-sharing and work-sharing. Building on such experience, two or occasionally three European nations began to pool their R&D resources and productive capacities to meet their military requirements. Some pooling was attempted with the US as in the US-FRG main battle tank (MBT-70) program, but on the whole this co-development and co-production pattern was distinctively intra-European and, in fact, began to compete with US technology and production.

Two European co-development programs initiated in the late 1950s met with only limited success. These were the G-91 close support jet fighter and the ATLANTIC maritime patrol plane. Since the mid 1960s, however, the British and the French have co-developed and co-produced the LYNX and GAZELLE helicopters and the companion PUMA and the JAGUAR ground attack/trainer jet. In 1970 France and Germany pooled resources to develop the ALPHA JET trainer/ground attack aircraft. The ROLAND surface to

air missile is another Franco-German development, now licensed for production in the US in the ROLAND II version. Other tactical missiles such as HOT and MILAN are additional examples of this pattern. The most ambitious intra-European co-development and co-production program is the British-German-Italian multirole combat aircraft (MRCA). While many of these programs obviously contribute to standardization within Europe, in competition with US designs they tend to produce destandardization between Europe and the US.

Competitive Common Selection

For a few key systems, NATO experience includes a pattern in which standardization or interoperability was the dominant consideration in selection and licensed production was a critical device in facilitating selection among competitive developers or offerors.

The NATO air defense ground environment (NADGE) system is the most successful example of this pattern. In this case, it was clearly critical that all NATO participants have interoperable or standard equipment. Among competing offerors, the international consortium, NADGECO, was selected and offered a permanent organization that could mediate among member companies and national governments, deal directly with a management office at the NATO level, and integrate political and economic interests with military goals. The winning consortium also awarded licensed production to a losing subcontractor and established an important precedent for allocating production among competitive developers thereby breaking the "winner take all" pattern that has been a major obstacle to common selection.

The selection of the F-16 by Belgium, Denmark, the Netherlands, and Norway for their air forces bears some similarity to the NADGE case in that licensed production and a prior commitment to standardization were critical elements of the decision by these four countries. In this case, however, no losing competitor or element thereof received any share of the licensed production, and non-contending industries of the consumer countries received all the benefits of the licensed production. Licensed production in this case was an element of competitive sales to

offset expenditures of purchasers more than a means of supporting or preserving, for the benefit of future competitions, the developmental capabilities of losing developers with advanced productive capabilities.

The situation in which two versions of the US XM-1 tank and the German LEOPARD 2 were developed is somewhere between the NADGE and the F-16 cases. Interoperability rather than standardization on a single tank for the two countries is likely to be the outcome of negotiations and compromises between the tank prototypes. This could be achieved by trans-Atlantic licensed production, on a two-way basis, among critical components of the tank systems.

This pattern, to the extent that it uses licensed production to facilitate common selection among countries with the highest development and productive capabilities and not just as an offset for purchasers who do not participate in competitive development, probably holds the greatest potential for NATO standardization in the future.

EUROPEAN POLITICAL INSTITUTIONS AND POLICY TRENDS

Throughout its history NATO has developed several institutions and procedural devices to facilitate standardization of weapons, equipment, and logistics. One of the early devices now no longer used was the system of defining NATO Basic Military Requirements (NBMRs) by which the NATO Military Authorities attempted to specify common or standard requirements for all NATO forces. This system proved cumbersome, rigid, and ineffective and was abandoned in the mid 1960s. On the military side, the Military Agency for Standardization established in 1951 and reporting to the Military Committee is the principal body charged with facilitating standardization and interoperability. One of its principal devices is the system of Standardization Agreements (STANAGs).

Since the mid 1960s the real burden of achieving weapons standardization and interoperability has shifted to the civil authorities and institutions within NATO. This shift recognized that achieving cooperation in development and common selection and procurement is fundamentally a political and economic problem more than a military problem. A fresh start was begun in May 1966 when the North Atlantic Council (NAC) approved

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the report of an exploratory group set up to study the problem of standardization and to propose new solutions. The principal institutional device to emerge from the ensuing reorganization was the Conference of National Armaments Directors (CNAD), which consolidated and replaced the earlier Defense Production Committee, the Armaments Committee, and the Committee of Defense Research Directors. Besides focussing standardization efforts in the civil structure of NATO and consolidating its committees, this shift also recognized that the implied mandatory approach of the NBMRs could not work and that what was required was a flexible, clearly voluntary system of exchanging information on national R&D and procurement programs and encouraging cooperation among any two or more NATO members in meeting their national requirements. A unique device of non-official civilians was also created in 1968 to facilitate information exchange and voluntary cooperation on a broader basis encompassing defense industries in the member countries. This is the NATO Industrial Advisory Group (NIAG). Besides providing a forum for exchange of information and encouraging industrial cooperation, the NIAG has been used to perform prefeasibility studies in various critical areas of armaments.

In 1971 the work of the CNAD and its subgroups was given sharper focus and redirected to concentrate on the most pressing needs for the Alliance as a whole. Budgetary and economic problems in all NATO countries gave a new urgency to achieving more efficient uses of resources in the high priority, high cost areas of new weapons requirements through standardization. In addition the CNAD began to work much more closely with the Military Authorities in identifying the most critical areas for interoperability. In addition, by the beginning of 1976, NATO had created nine special agencies (three of which no longer exist because they have completed their work) to manage integrated programs in weapons and logistics standardization. There were also twenty Steering Committees for approved NATO co-production projects.

After the US initiatives in mid 1975 for NATO to develop new and stronger commitments, policies, and procedures for achieving standardization, the NAC in Ministerial session in December 1975 created an Ad Hoc ✓

Committee on Equipment Interoperability to seek to develop practical steps in this priority area and implicitly tabled immediate new action on standardization, pending further development of intra-European and US interests and trends.

Distinctively European Institutions

Within NATO, the Eurogroup, consisting of all European NATO members except France, Portugal, and Iceland, was formed in 1968 to strengthen the European contribution to the Alliance through closer coordination of national policies and programs. With efforts across the board, but especially in support of forces for the Central Front as in its European Defense Improvement Programme (EDIP), Eurogroup had become by 1975 the principal forum within Europe for reconciling intra-European interests with trans-Atlantic interests in standardization. Two themes have dominated European considerations in recent years: (1) the need for closer coordination (or even integration) within Europe; and (2) the need for a more balanced "two-way street" between a stronger Europe and North America.

Because of the non-participation of France in Eurogroup, its efforts were necessarily truncated. The Western European Union (WEU) has been a bit moribund as an institution of European integration in most respects, but does provide an additional forum and one in which the interests of France are represented. Consisting of the original signatories of the Brussels Treaty of 1948 (Britain, France, and the BENELUX countries) plus Italy and the FRG (who were added in 1954), the WEU has been a kind of "structure in waiting" for a revived or newly integrated European defense community - outside the formal structure of NATO with its strong US presence, but compatible with that structure. Accordingly, the WEU took new initiatives in 1970 to study and develop "a concerted long-term programme for standardized armaments procurement and collective logistical support." Committed by treaty (the Paris Protocols of 1954) to standardization, the WEU has continued its efforts by sponsoring a major symposium on the European civil and military aircraft industry in February 1976 and by planning a similar symposium on military standardization and its relation to European industry for February 1977.

But the WEU - with its particular history and without NATO's flanks represented - could not represent collective West European interests vis a vis other NATO members including the US even as well as Eurogroup could without France. The newly formed European Programme Group (EPG), for many of its participants, thus represents a fresh start at attempting to find the right European institution that can reconcile intra-European with trans-Atlantic interests. Formed in late 1975 with the formal blessing of Eurogroup, the EPG appears to be committed to remaining flexible and inclusive, adaptive and pragmatic in its approach to finding the feasible and priority areas for European cooperation and coordination on standardized weapons development and procurement. Although there are some national fears on both sides of the Atlantic that the EPG may prove to be another false start, the dominant mood in NATO appears to be to give EPG a chance to develop and to represent more unified European interests and policies.

Country Stances and Trends

Whatever emerges from the EPG, or from Eurogroup or the WEU, will depend critically on how the views of the three dominant industrial countries of Western Europe are reconciled among themselves and in relation to the smaller countries with considerably less R&D and productivity capacity for the range of modern weapons their forces require.

France, of course, is somewhat pivotal in this respect. The independent course France has pursued in strategic weapons and in withdrawing from the military organization of the Alliance has been followed by strictly national development and production of most of its tactical aircraft and tanks. French spokesmen have voiced strong concern and criticism of many efforts at standardization as either impossible or undesirable for an Alliance as diverse as NATO. They have been the most vocal advocates of European military autonomy - rejecting standardization on US equipment - and have been impatient with smaller allies for not standardizing on French equipment. Some of the bitterness that followed the F-16 selection by Belgium, Denmark, the Netherlands, and Norway has been tempered by realism; and France has taken an active and even leading role in the Ad Hoc Committee on Equipment Interoperability as

well as in the EPG. For France, the EPG - far from being merely the European side of a trans-Atlantic dumbbell - is first and foremost an effort to coordinate European military requirements and programs and to protect the European defense market from further US encroachment or domination. Behind such policy views, however, industrial as well as military interests - with the French armaments industry heavily dependent on export markets - dictate the probable openness of France to increased cooperation with the US and other NATO allies in weapons development and production if market-sharing as well as work-sharing can be worked out.

In terms of military security and effectiveness alone, Germany has perhaps the most obvious stake in weapons standardization. As the strongest European industrial power and with little dependence on export markets for military sales, the FRG has high economic interests in the potential resource savings from cooperative weapons development efforts. Thus, Germany has played a key role in the proliferation of intra-European co-development and co-production projects of the past ten to fifteen years. As a relatively heavy purchaser of US equipment - both by inclination and by offset agreements - the FRG has also developed a kind of "special relation" to the US that has tended to put it at the opposite end of the spectrum of Atlanticism from France. But just as there are some signs that France is more willing to look across the Atlantic, so there are some signs that the FRG will look to Europe to establish a firm basis for a "two way street." Some Germans may expect that to be a two way street of direct purchases (as testimony in the US Congress in March 1976 indicated), but the dominant German position seems to be a more pragmatic approach encompassing licensed production across the Atlantic of proven systems and components (e.g. ROLAND II and the Sikorsky CH53-G) and encouragement of cooperative research and co-development within Europe (e.g. MRCA) of new systems to meet common requirements.

The British position is similar to the German except that the British have a higher economic stake in standardization and a somewhat

lesser military stake. Like the French armaments industries, the British aircraft industry in particular is dependent on foreign sales to help recover investment costs in R&D and plant and to reduce the unit costs of end items. Direct sales to the US have more appeal to British industry than licensed production and licensed production within the UK of US designs has more appeal than direct purchase from the US. Like the FRG and France, the UK has had more success with other European countries on co-development projects than with the US. Although the British, like the Germans, are prepared to make compromises where weapons standardization is militarily most important, the pattern of licensed production that would have least appeal to the British is licensing of a US design to an international consortium of European industries (rather than on an individual national basis) and licensing of a European co-development (rather than a British design) for production in the US. That is, licensed production after development has its greatest appeal if done on a bilateral basis with the US.

The smaller nations of Western Europe play a more fluid, if not ambivalent role, with respect to intra-European and trans-Atlantic aspects of licensed production and standardization of weapons and equipment. With inherently less R&D and other resources to invest in a wide spectrum of armaments industries, they are more readily prepared to accept other country designs for licensed production to assist domestic employment and to cope with balance of payments problems that would result from extensive direct purchase. Italy's co-production of the US M113 armored personnel carrier, its licensed production of the German LEOPARD I tank, and its scheduled co-production of the British-German FH-70 and SP-70 howitzers are examples of this readiness to accept licensed production. The Belgian, Danish, Dutch, and Norwegian selection of the US F-16 with licensed co-production offsetting arrangements is a further illustration of the importance of such arrangements to the smaller European countries. The potential and present ambivalence in such arrangements concern their long-term effect on intra-European technological-industrial development and its relation to a trans-Atlantic two-way street.

Alternative US Responses

Most Europeans believe that the US market remains substantially closed to licensing as well as to direct sales. They state that with the rare exception of a HARRIER or ROLAND, the US develops and produces all its own major military systems. The phrase "two-way street" has been used with increasing frequency to symbolize the European desire for mutual sales and co-production.

Substantial rationalization in the form of European co-development has taken place over the past decade. There have been several major consolidations of the aircraft industries in Britain and France, and more seem likely in the near future. Numerous projects in aircraft and tactical missiles have led to close cooperation between large corporations in Britain, France, Germany, and to a lesser extent Italy. In certain fields of military production, international consortia like Panavia are now more important than national firms. Some of these international consortia as well as individual national industries are prepared to offer licenses for US production as well as to promote direct sales of their weapons developments, both for their competitive military effectiveness and as a test of the US commitment to standardization on a two-way basis.

In view of current European institutional and policy trends, three broad US responses seem to present themselves.

Option 1. Withdraw from major efforts at licensing or sales except for expensive and highly specialized systems like AWACS and some types of missiles. This option would have the advantage of encouraging further development of European industry and of ensuring it some of the benefits of long production runs. However, it would divide the total economic and technological resources of the Alliance and deny each side the benefits of advances by the other. Option 1 could also encourage even greater cartelization within Europe and lessen the incentives for efficiency and innovation.

Option 2. A major licensing and sales effort, following the F-16 example and aimed at the smaller consuming nations. This policy would

give the maximum choice in procurement to those countries without major development capabilities of their own. Such an effort would also force the European producers (Britain, France, and Germany) to make their military equipment competitive with that of a major rival. The drawback to such a policy is that it would tend to split NATO into producer and consumer factions and to weaken the cohesion of the Alliance even more than would US withdrawal under option 1. In particular, this option would threaten to reinforce French suspicions of the US at a time of gradual rapprochement and to convince the otherwise strongly pro-NATO and pro-US Germans that the Gaullist position may be correct after all.

Option 3. A pragmatic combination of US co-development as well as co-production with European allies and of US participation in selected NATO-wide common projects. Under this option, the R&D capabilities of all the allies could be used to determine the best system for production. Co-production would ensure stable employment as well as maintenance of the R&D level on both sides of the Atlantic. Under this option, the current high level of European technology, the increasing rationalization of European industry and the European desire for a two-way street would work to the benefit, rather than the detriment, of the Alliance. *

Current European economic strength and political assertiveness probably means that co-development, combined with co-production, is the most likely means for US industry to retain some place in the European market.

THE PROSPECTS FOR LICENSING AND STANDARDIZATION FROM A EUROPEAN INDUSTRIAL PERSPECTIVE

For European industry, the credibility of the American standardization initiative is inseparably linked with the establishment of a "two-way street." In the last 20 years, there has been a flood of US hardware and licenses from the United States to Europe and a trickle in the other direction. If the latest US standardization initiative comes to be perceived only as a Trojan Horse for a new wave of US licenses (e.g., F-16, F-18, AWACS, HARPOON, HAWK, SPARROW, etc.) then intra-European efforts to exclude the United States may intensify. For European industrial

purposes, the two-way street will be defined as a sharing, according to pre-established formulas, of the costs and industrial work benefits, under the supervision of an established transnational body, in selected defense programs. In the sum total of such programs, the major European industries will seek a balance approaching parity in the exchange of products and services.

* If licensing is the primary vehicle to meet the objective of standardization, systems that are in late development or early production are naturally thought of. There are European systems that could, in the next several years, be available for licensing to the United States as part of a two-way street. These include some that are technologically impressive, such as the naval SAMs in Britain, advanced AAMs in France, Franco-German antitank weapons, British armor and guns, French light armored vehicles, etc. However, to recite such a list even in outline is to recognize immediately the existence of competing US systems. European industry does recognize this fact and for that reason has tended to emphasize the need to reach beyond the competing systems of the current generation and establish shared co-development programs for the next generations in each of the tactical weapons categories. Such an approach would not preclude licensing; but it would subordinate licensing within a larger co-developmental context. The current example of the two trans-Atlantic collaborations on ten-ton aircraft engines is useful, since these projects involve both co-development of the total package and specific licensing within that package.

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V The "interdependence" concept, formulated by DDR&E at the beginning of this decade, called essentially for separate and independent design and development, followed by competitive selection of a single system, for which production would then be licensed in each of the user countries. The current European industrial concept calls for initial agreement on joint specifications, followed by collaborative R&D and, ultimately, a production program that typically involves two or more final assembly lines supported by a specialized division and cross-vending of subassemblies and components. Licensing has an important role in this process, especially

in cases where existing major subsystems and assemblies (e.g., engines, avionics, homing heads, etc.) can be incorporated in a new system. Although this kind of approach may not, in many instances, be accepted in the United States, it has had a long process of evolution in the European defense industries and they are not likely to abandon it.

Also of great potential importance is the European evolution of ad hoc inter-governmental organizations, such as NAMMO and NAMMA, to coordinate government oversight of the resulting industrial consortia. Experience to date in the licensing of ROLAND II to the United States demonstrates the need for the establishment of inter-governmental authorities to resolve technical issues and to establish industrial product and manufacturing specifications and standards, contracting procedures, and security regulations in advance of major licenses or other collaborative projects. The tendency to push the resolution of these problems down to the industrial level is virtually certain to create frictions that could otherwise be avoided. The intermediary role of government offices or laboratories can be extremely beneficial, as demonstrated by the use of a USAF system program office (SPO) as a clearinghouse for the resolution not only of technical but of management issues. The role of the USAF SPO in the case of the AVS program of the mid-1960s, as well as the activities of the F-16 SPO at the present time, indicate the value of such a group to oversee the work of industry.

Although it would be difficult, on any general basis, to support arguments that European industrial workmanship is inferior to that in the United States in high-technology fields, there is no question whatever that differences in scale of R&D funding and production have led to US advances in manufacturing development which inevitably affect product development. For this reason, it is often difficult to carry out adaptations needed in licensed production from Europe to the United States; and it is essential that these issues be resolved by government authorities before contracting to industry. The US network of specialized service commands and laboratories can play an important role in this regard.

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Since virtually all of the new or recent European projects in high-technology fields are collaborative rather than national - a trend which favors greater efficiency and unification in NATO defense industries in the long run - collaborative arrangements made with consortia rather than national industries will demonstrate US interest in encouraging and strengthening this trend. The establishment of intra-European consortia is rapidly resulting in greater standardization in Premier Commandement Aerienne Tactique (1^{er} CATAC) and in 2 ATAF and other forces assigned to the Central European Front. For this reason, the consortia represent a very logical focal point for new US initiatives.

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In any case it is important for US industry to work with leading defense firms in Britain, France, and Germany as well as or even more than with companies that are geographically or industrially peripheral. The European defense industries have been very concerned over the differences in rates of productivity, both among the European countries and in comparison with the United States. To increase the overall level of European productivity, they have been anxious to achieve economies of scale through collaboration, especially in high-technology programs. Consequently, reaction to the F-16 program has been adverse; it harms total European productivity in two ways: first, by requiring capital investment in relatively small national industries where there is little long-term prospect for sustained aviation production; and second, by by-passing the major, well-capitalized industries of the three large countries, where additional work would lead to fuller utilization of their own capital resources. For future US initiatives in standardization, this is a key issue, requiring primary concentration on the major specialized industries.

With particular regard to French industrial attitudes, which are critical to a widening of trans-Atlantic defense industrial collaboration, the relative ease with which Franco-American agreements have been reached on the CFM-56 and MERCURE 200 civil programs indicates the absence of any basic psychological impediment to major collaborations, especially those that offer some hope of long-term beneficial effects on industrial

capabilities and employment stability. The lessons to be derived from the Franco-American civil aircraft negotiations are related to the issues of: the promise of increasing work for under-utilized production lines; potential access to the American market; and collaboration on a relatively full-partnership basis. To the extent that these conditions can be met in collaboration for defense standardization, French cooperation can probably be expected.

For all Europeans, the issue of domestic employment is fundamental in all current industrial planning. Stability in employment is more important than profits. Licensed production of other country weapons designs will therefore almost always be more attractive than direct purchase as long as production capacity exists that can absorb the employment resulting from licensed production. Also, there must be the expectation that employment will continue over a reasonable period and can be sustained beyond the life of individual projects. For the big three (Britain, France, and Germany), this expectation depends on sustaining a substantial research and development capability and, for Britain and France in particular, a share of extra-NATO sales. If US industry is not to be increasingly shut out of European defense markets and standardization is to be achieved on a trans-Atlantic basis, this means the US must be prepared to accept more licensed production of independent European designs or enter into more extensive co-development arrangements. POLITICAL
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CANDIDATE NATO REQUIREMENTS FOR LICENSED PRODUCTION

As noted earlier, the CNAD - which has been the principal forum within NATO for standardization - has concentrated since 1971 on identifying priority areas and requirements for weapons standardization. In close cooperation with the three Major NATO Commanders (MNC), the CNAD has also sought to identify the priority goals for interoperability. Documents of these two groups were reviewed together with past statements of NATO and national requirements, as available, to evaluate trends and changes, assess standardization accomplishments against such requirements, and, principally, to identify priority areas for US licensing policy as an aid to standardization. SOURCE *

The reports of the CNAD are better records on the details of agreement than on the details of disagreement. In particular, information on diverging national programs addressing similar operational requirements, noted in such documents, does not provide much insight on the rigidity of the national positions and how they could be adjusted to reach agreement on standardized or interoperable NATO equipments if there were high confidence in reaching mutually acceptable co-production and licensing agreements.

Additional information on candidate requirements was obtained from a review of US development programs dealing with systems intended primarily for use by US elements within NATO, and from review of systems noted or highlighted as potential candidates by European members of NATO and the European Programme Group. All were then considered in terms of their schedules for fielding, practicality of co-production and licensing, and their relationship to the goals of better use of NATO resources and enhanced effectiveness of NATO forces.

Table 1 summarizes the areas that are most frequently reported in NATO standardization and coordination reports. Current standardization actions in the areas listed vary all the way from actual multinational selection of a specific system such as ROLAND II to meet a SHORAD need to only information exchanges on separate national programs as in the tactical multichannel communications area.

Table 1

AREAS OF ONGOING STANDARDIZATION COORDINATION

LAND COMBAT FORCES

Light & Medium Inf. Wpns	Surface-to-Air Missiles
Surface to Surface Arty	SHORAD
Tanks	Rocket Systems
Antiarmor	Artillery Fire Control
Ammunition	Helicopters

TACTICAL AIR FORCES

AWACS	Air-to-Air Munitions
F104 Replacement	Air-to-Ground Munitions
Advanced Landing & Approach	Drones/RPV's

NAVAL FORCES

ASW Torpedo	Defense Against Antiship Msls
Sonobuoys	Antiship Missiles
Hydrofoils	Medium SAM's
Naval Gun	Mines and Countermines
Point Defense	Frigates
Shipborne V/STOL	Lt Wt ASW Helicopters

GENERAL

Communications	Navigation & Position Finding
Data & Interfaces	Electronic Warfare
Fuels	Identification
Surveillance	Target Acquisition

A focus on candidates specifically for licensing potential inevitably leads to systems in late development or early production. Unfortunately, it is just such systems which are most apt to have involved decisions by the sponsoring nation or nations to proceed in the absence of NATO standardization agreements. While it is possible to identify some systems where military requirements are not yet firm or standardized and design/development options are open, such systems - by their nature as early development programs - do not present obvious licensing opportunities. The resulting list of candidates is thus narrower than anticipated and excludes some general requirement areas listed in Table 1. Where no clear candidates could be identified, consideration was given to longer term requirements and possible future cooperative developments with co-production and licensing options.

NOTE

Three weapon areas that appear to promise enhanced NATO military effectiveness, if standardization could be achieved, as well as providing good cases for evaluation of US policy options on licensing and co-production,

are: Tactical Air Missiles, Ground-Based Air Defense, and Tactical Communications. This does not mean that standardization of systems in the other areas should not be pursued. The lesson of twenty-five years of NATO experience is that failure to work continuously toward standardization results in a growing number of destandardized items with associated divergences among national replacement schedules, budget priorities and employment concepts, all compounded by national industrial protectionism. The three equipment families listed above are therefore suggested as representative cases since they involve different types of licensing and co-production opportunities and might serve as the needed examples of positive long term commitments that would encourage standardization action on other systems.

✓ Tactical air missiles, both air-to-air and air-to-ground, are attractive candidates for standardization agreements involving co-production and licensing for several reasons. Primary is the significant gain in overall NATO tactical air effectiveness if standardization permitted expedient combat rearming by surviving or stocked air fields on a broader multinational basis. Design to standard missiles, despite the probability of differing tactical aircraft within NATO, would also provide a higher level of air interoperability and could exploit the technological skills and production capabilities of European NATO countries, particularly the UK, FRG and France. An essential element in reaching such agreement would be protection of both the existing national and export market interests of the UK and French missile industries. This is an area, moreover, where the potential for enhanced military effectiveness is not now matched by adequate coordination or agreement on a broad scale. ✓ On the contrary, multiple and differing courses are being followed for the weaponization of the F-16, JAGUAR, MRCA and other aircraft. Timely action is required or the opportunity for better standardization will be lost or greatly complicated.

The decision by the US to adopt the ROLAND II has greatly stabilized the SHORAD missile situation in NATO and has established an excellent basis for agreement on what should ultimately replace the ROLAND, CROTALE

and RAPIER. It is not yet clear if this should be a system similar in concept but better in performance or if changes in air defense requirements may result in a different approach. The significant point is that these current systems have essentially the same anticipated life and that there is now the opportunity to work toward a common approach to the total air defense problem. Since no country has yet identified a requirement for a new light SHORAD missile system before 1989, this area is a good candidate for a high visibility coordinated "requirement to production" program. Such a program should be based on consideration of many of the suggested approaches to shared development and production once the requirements are better defined. The chances for success of the program would be greatly enhanced if those nations not yet committed to a light SHORAD missile system restricted their choices to the ROLAND, RAPIER, or CROTALE, particularly the Italians who have deferred to 1977 a decision on their own developmental SPADA and MEI systems. ✓

The situation with regard to standardization on a common forward air defense gun is less stable. The US commitment to consider the FRG 35mm Armored FLAKPANZER, if a decision is made to replace the VULCAN 20mm with an automated gun system, holds promise if it results in a strong conclusion favoring the FLAKPANZER. If not, the US would be in the difficult position of rejecting a weapon that the FRG plans to field with Belgium and the Netherlands.

The potential for standardization on future medium SAMs involves complex interactions of the role of SAM-D, the tradeoffs associated with an airborne early warning and control system, bilateral US-FRG and UK-France studies of future systems, the work of the NATO Tri-Service Group on Air Defense (TSGAD), and the potential of improved HAWK. ✓ All of the decisions, from determination of requirements to fielding the next generation of SAMs are still open and will not converge easily within NATO. This is further complicated by the growing extent of European commitment to participation in SAM development and production.

Because of the high costs involved, the criticality to NATO of a viable air defense system and the long term impact of fragmented and incompatible system decisions, this is a continuing priority area for standardization despite its difficulty.

Tactical communications, both multichannel systems and net radios, are obvious candidates for NATO standardization or interoperability. The status of interoperability of the multichannel programs, with six differing national approaches,* was the subject for a Fall 1976 report by the International Staff of NATO to the Military Committee and Council. Hopefully, movement can be started toward greater interoperability of the different multichannel systems. Strong NATO efforts on coordination and standardization in the area of net radios have focused on the interoperability of ground force systems. Differing time schedules among NATO forces for fielding of advanced technology equipments have presented a continuing problem, but not to the extent found in multichannel systems.

The US Army is currently initiating action for the next generation of its tactical net radios. While not advanced to the point of identifying specific items for potential co-production and licensing, the schedule does provide time for such considerations in an environment of shared concern with NATO allies on interoperability. Existing STANAGs could be the bases for a NATO approach that would retain current interoperabilities and address a NATO transition plan for next generation equipments that facilitates rather than inhibits agreement. Cooperative/shared development, co-production, licensing or direct purchase of equipments developed to common requirements all show promise due to the high level of European technology in most of the required areas.

*TRITAC (Delta Modulation): United States (1976 experimental)
PTARMIGAN (Delta Modulation): United Kingdom (1983 -)
RITA (PCM): France and Belgium (1976-78)
AUTOKONETZ (PCM): Germany (1976 -)
ZODIAC (Delta Modulation): Netherlands (1980 - replacing interim)
Experimental (Delta): Italy (1977 -)

Probably more than any other area, communications interoperability is dependent on the development of and compliance with detailed STANAGs. Such STANAGs should cover aspects of the communication process such as message formatting, procedures, signaling, frequency allocation, power, modulation, and detection. Some aspects can be developed or derived as modifications to existing STANAGs. Others may evolve from agreement on one approach or design from several candidate applications of new technology. The manner and skill with which the US participates in NATO communications (and data interface) STANAGs may determine the success or failure of efforts on communications interoperability, including selections of components for co-production and licensing. European perceptions of US use of STANAGs to foster US designs and US equipments at the expense of theirs would lead to fragmentation or only selective compliance. On the other hand, US compliance with STANAGs would demonstrate that the US is looking for means of achieving interoperability in terms that Europeans understand and demonstrate that the US is prepared to make long range commitments toward that end. *

CONCLUSIONS AND RECOMMENDATIONS

Licensed production is a primary and workable mechanism for increasing interoperability or standardization. Licensing is a compromise between selection based on national protectionism and a common selection by a supranational NATO procurement agency. Such a NATO agency is not really feasible, and both US and European industry would rather have selection without licensing. Moreover, although licensing does have problems that require real effort to solve, these problems generally are solvable. In experience to date, licensing has been in the production stage, frequently late in this stage, and this causes adaptation problems. A second problem is that of extra-NATO sales to third world nations. A third problem is the problem of security. }

The adaptation problem in transferring complex technology from one national environment to another is due to differences in language, measurement systems, industrial structures and practices; differences in

national laws; and differences in national interests. Practical approaches are needed to alleviate such frictions and differences at the intergovernmental level rather than pushing it down to the industrial level.

If the US is to press for standardization through licensed production, the problem of third nation sales must also be approached with consideration for the dependence of European industry on such sales, particularly in the cases of France and Britain. Intergovernment as well as interindustry negotiation is required in this area.

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The problem of security has two aspects. One aspect concerns military or national security; the other the protection of industrial property and secrecy. In any licensed production arrangement, technology is inevitably transferred and control of its dispersion is lost to some degree. This is true in military sales as well, but there production know-how is not necessarily transferred along with equipment and its implicit technical data. The desire to protect national security data almost inevitably gets compounded by the inclination to protect trade secrets from potential competitors. Licensees are frequently unable to distinguish legitimate national security concerns from industrial competitive concerns of licensors, especially when a US firm is the licensor. This is an area requiring high priority attention.

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A commitment before development or in early development to a common selection that would result in licensed production would, in many cases, enhance the prospects for the successful use of licensed production as an interoperability or standardization tool. Such an early commitment would avoid many of the problems that result when licensed production is introduced only after a successful national development. If competitive developments are sponsored, this means that countries must be willing to pay for some development programs that do not lead to production. In return, however, they would have an opportunity to select from among better prototypes.

One approach to common selection from competitive developments is through collaborative funding. This approach is especially applicable

when technologically advanced systems are involved. In the case of a very large complex system such as an MRCA, an F-16, or a tank, there may not be a common selection of the whole system but rather of key components such as the engine, airframe, or armament. However, such component selection does lead to the desired interoperability, and full standardization in such cases may be less desirable because of significant variations in military missions as well as differing national priorities, economic concerns, and national pride. Italy does not need the same MRCA as Germany or Britain, and the US may need a somewhat different tank than Germany does. In such cases, licensed production would be of the key components.

There is no uniform approach to licensed production that applies to all kinds of systems. One distinguishing feature is the degree of maturity of the technology. In such a case as the MAG-58, licensed production is an easy matter but it is not so easy for a sophisticated avionics system. The existing industrial capacity should also be taken into account.

NOTE

The common problem areas for the US licensee of a European licensor are concerned primarily with the role of the US government. US government is an uncertain factor that generally enters late in the negotiations. The European licensor is concerned about generating a competitor with his own product, with liability arising out of infringement of patents, with the US government making later decisions on allowability of his compensation, with maintaining unrestricted rights to changes or improvements, and with the terms of a sublicense to the US government.

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There is a need for high level offices in every NATO MOD (including the US DOD) to serve as clearing houses on all technical matters pertaining to NATO standardization and interoperability as they affect national procurement decisions. At present there are no offices within NATO MODs that are charged with the responsibility of ensuring or certifying that weapons being funded for R&D or for production and acquisition meet requirements for NATO standardization and interoperability or that no alternative programs or systems exist within

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NATO that could be candidates for collaborative funding, co-development, or licensed production. Collaborative funding, co-development, and licensed production tend to be treated in the acquisition process on an exceptional basis and advocated only when other circumstances - e.g. inadequate R&D budget, limited technological capacity in a particular area, urgent military requirement - demand. Even licensing one's own national designs for production in another NATO country tends to be treated in the bureaucratic process as a concession to a vague policy, to US industry seeking markets, or to European countries seeking offsets. If standardization efforts, including licensed production policies, are to be given force, much stronger technical guidance and certification that such guidance is followed needs to be provided in all aspects of the weapons acquisition process.

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There should be a move away from government surcharges for R&D. Surcharges should be used principally for licensed production in countries that have not done any R&D. In instances such as the F-16, they are appropriate but should be kept low. The original motivation for such surcharges was the US balance of payments problem, but conditions have changed from this earlier period. In countries like France, Germany, and Britain where a lot of R&D money is spent, the surcharge should be very low, if not zero.

Licensed production should emphasize competition among good industrial capabilities, and there should be licensed production of losing competitors and the use of superior features developed by the losing competitor. Licensed production should be a device for achieving as much commonality and selection as possible among competent industries and technologies. Licensed production can be used as in the F-16 case to achieve sales among countries who have low development capability or it can be used as a device to achieve a better selection among countries that have high development capabilities. The latter holds greater promise for interoperability or standardization.

Losing competitors can undertake licensed production of components, and some features of their prototype may be used. This would mean that

there are really no completely losing losers or completely winning winners. This keeps technology alive and well, and ⁵⁰companies that lose do not lose everything. They will be licensees for somebody else's design. This will affect their pride but keep company and R&D capability alive. The next time around one of the current losers may win. ✓

The government could buy a license and determine later who gets a production contract. This would be an alternative to the way the XM-1 was handled. The advantage of this is that the losing competitor can easily be awarded some licensed production. The disadvantage is that a foreign competitor would not have a strong representative pleading his case without a pre-selected licensee. It may be well to have the government buy the license in cases of a US prototype versus a European prototype. If two international cross-Atlantic consortia are involved, then presumably licenses can be arranged without government buying the license. Government purchase of a license encourages a dumbbell (US-Europe) approach which has many advantages. There are other advantages, however, in consortia competitions which incorporate internationalism. There is no single pattern for all industries. For the MAG-58 case, the dumbbell approach is much better. 2

Licensed production can be used as a device for facilitating later collaborative development. Companies may develop different parts, and the production of the components may be distributed under licensing arrangements. Feedback and product improvement may well be involved, leading to future collaborative development and licensed production, and the production of succeeding models can be coordinated.

Although it is a promising device that could lead to other forms of achieving NATO standardization and interoperability, licensed production still has substantial hurdles to overcome. Some immediate steps that could be taken to facilitate greater use of licensing on a two-way basis include:

- Harmonize and simplify, if possible, US national procurement policies and procedures of the three military services with respect to acquiring European weapons under licensed production arrangements.

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- Encourage harmonization and "standardization" among NATO countries of procedures and steps in the weapons acquisition process, including bidding methods and forms, test and evaluation, selection criteria.
 - Identify existing political and commercial barriers - e.g. taxes, tariffs, export controls, accounting procedures, allowable costs, production standards, security regulations, etc. - that tend to hamper licensed production and might be reduced.
 - Revise DOD Directive 2000.9 (23 January 1974) on international co-production to put emphasis on NATO standardization.
 - Revise the State Department publication (October 1975) on US Government guidelines and procedures for reviewing proposals for co-production to include and emphasize NATO standardization.
 - Revise DOD Directive 2015.4 (5 November 1963) on mutual weapons development data exchange to account for the current emphasis on NATO standardization and to include the case when a US firm is the licensee.
 - Revise DOD Directive 2140.2 (15 March 1967) on surcharges for nonrecurring costs associated with R&D to account for and accommodate NATO standardization interests and legitimate European concern with such costs when they have also funded R&D.