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(First Part)

Weaponry after the Gulf war –
new equipment requirements for restructured armed forces

REPORT

submitted on behalf of the
Technological and Aerospace Committee
by Sir Dudley Smith

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1. Adopted in committee by 12 votes to 2 with 0 abstentions.

2. *Members of the committee:* Mr. Stegagnini (Chairman); MM. Garrett (Alternate: Lambie), Lopez Henares (Alternate for Pedregosa) (Vice-Chairmen); MM. Atkinson, Biefnot (Alternate: Uyttendaele), Mrs. Blunck, MM. Böhm, Caccia, Conceição, De Bondt, Dimmer, Mrs. Francese, MM. Lagorce, Le Grand, Lenzer, Lopez Valdivielso (Alternate: Vazquez), Malfatti (Alternate: Pieralli), Menzel, Moreira, Palacios, Parry, Lord Rodney (Alternate: Sir Dudley Smith), MM. Tummers (Alternate: Aarts), Valleix, Verbeek, Worms.

N.B. *The names of those taking part in the vote are printed in italics.*

Draft Recommendation

***on weaponry after the Gulf war –
new equipment requirements for restructured armed forces***

The Assembly,

- (i) Welcoming the continuing improvement in relations between all countries participating in the CSCE;
- (ii) Recognising that the process of political détente, combined with the withdrawal of Soviet troops from the territory of Central European nations and reductions of troops and equipment in the framework of the CFE agreement have reduced the security risk in Central Europe;
- (iii) Aware that economic deterioration and increasing political instability in the Soviet Union still constitute a residual security risk for Central and Western Europe which cannot be ignored;
- (iv) Conscious that, in some parts of Eastern Europe, recent democratisation has also brought to the fore a number of ethnic, national and economic difficulties, thus creating instability;
- (v) Recognising that the Gulf war was very different from past wars, particularly in regard to new technology and lessons and consequences have to be drawn from it;
- (vi) Expecting that for many years to come the Near and Middle East will be an area of instability with serious risks for the security and other interests of Europe;
- (vii) Concerned that existing intelligence and surveillance systems failed to provide adequate information on the military build-up prior to the invasion of Kuwait as was also the case in Afghanistan in 1979;
- (viii) Alarmed by developments in ballistic missile technology in a number of countries in the Mediterranean and in the Near and Middle East;
- (ix) Aware that as a consequence of institutional constraints some possible security risks cannot be controlled by NATO as such, but that in certain conditions, such as out-of-area crises, WEU can play a useful complementary rôle;
- (x) Convinced that WEU will need an operational capability in order to give Europe more influence within NATO and the ability to respond with the United States to world events;
- (xi) Convinced that a European rapid reaction force for use outside the NATO area would be logical and compatible with NATO's responsibilities to defend NATO territory;
- (xii) Aware of the new force structures which will be introduced in the allied forces, on both a national and multinational level, based on the principles of flexibility, mobility and reinforcement,

RECOMMENDS THAT THE COUNCIL

1. Urgently establish a WEU centre for satellite data interpretation as a first step towards setting up a European observation satellite agency;
2. Thoroughly review national force reductions as soon as the Atlantic Alliance has reached decisions regarding future allied force structures;
3. Instruct the committee of chiefs of defence staff of WEU to examine in detail the consequences of future allied force structures and the lessons of the Gulf war for European military co-operation, in particular with a view to studying:
 - (a) the possibility of setting up a European strategic airlift command equipped with a military version of the Airbus A-340 and operating in a WEU framework;
 - (b) the ballistic missile threat on Europe's southern flank and a possible subsequent common European requirement for an anti-ballistic missile capability;
 - (c) a common European requirement for a stand-off capability and precision-guided weapons.

Explanatory Memorandum

(submitted by Sir Dudley Smith, Rapporteur)

I. Introduction

1. Less than one year ago, in July 1990, European governments might have thought they had finished with war as an ultimate resort in crisis situations. The Soviet Union had been extremely co-operative in solving a number of remaining problems regarding the unification of the two parts of Germany, the CFE was making extraordinary progress, the Warsaw Pact had practically decided to give up its military rôle, its disbandment in the near future was inevitable and NATO had held its London summit which terminated its sole existence as a leading instrument in the containment of the Soviet threat as it was perceived during the cold war.

2. In many Western European countries, the public at large started to think that armed forces were a remnant of a cursed past which should now be forgotten. For some, the only reason not to abolish armed forces at once was the possible social and economic consequences for the military and the suppliers of arms.

3. Events since August 1990 have again proved how illusory those perceptions were. In the Gulf area, Saddam Hussein's unpredictable and volatile behaviour led to a major conflict, but the military victory of the coalition forces was by no means a guarantee of durable peace in the Middle East, where many other questions still remain unresolved. For years to come, the Middle East will remain an area of instability fraught with different possible threats to Europe's security.

4. In the Soviet Union, the general situation is apparently deteriorating and it is increasingly clear that the central government is losing control of the economic and political situation. Inevitably this has already led to political compromise where, in many instances, "old guard" forces have obtained the upper hand. In early 1991, Vilnius and Riga were the scene of incidents which could in no way be compared with the systematic repression which took place under previous Soviet leadership but were indeed a sobering reminder to the western public that not all has yet changed in the Soviet Union and attention should not therefore be slackened. In fact, the Soviet Union's military posture on NATO's northern and southern flanks has not diminished. On the contrary, the military forces assembled on the Kola peninsula on Norway's northern border have been refined and reinforced in recent months. Both the Soviet Union and the Balkans are still inherently unstable, bearing the seeds of possible conflicts

which may again threaten peace and security in Europe.

5. History has shown that in international relations it is extremely difficult for any of the countries or alliances concerned to control more than one serious conflict at a time.

6. The allied countries, be they American or European, should therefore use any peaceful means at their disposal to promote peace and security in areas threatened by conflict. At the same time, however, they should continue to maintain armed forces which are capable of guaranteeing their borders and controlling a conflict when it comes to the worst and military action is inevitable.

7. Referring to a sometimes confusing debate on the future of Europe's security structures, it should be clearly stated here that, according to the committee's firm conviction, NATO is vital for European defence arrangements to be credible. The United Kingdom Foreign Secretary, Douglas Hurd, put it rightly when he said that there is a case for a stronger European defence identity, but that NATO must be an integral part of the future defence of Europe. An approach which emphasised the separateness of Europe would seriously weaken its real security¹.

8. The aim of this report is to attempt to see what the alliance and in particular member states of Western European Union are doing to adapt their armed forces to a changing geopolitical and military situation. At the same time, a preliminary inventory is made of lessons from the Gulf war, which may lead to new or more detailed equipment requirements.

II. Revision of doctrines and strategies in NATO

9. The turbulent events of 1989 brought about so many changes in the political and military situation in Europe, which until then had seemed frozen in immobility, that even NATO was taken aback. It did not wait very long to react, however, and the first important sign of changes in NATO thinking appeared in the London declaration on a transformed North Atlantic Alliance issued by the heads of state and government in London on 6th July 1990.

10. Some quotations from this declaration and from communiqués of subsequent high-

¹ Financial Times, 13th April 1991.

level meetings will be given here, since they should form the basis for restructuring armed forces in alliance countries and possible new equipment requirements.

11. The London declaration stated that

- “ – NATO will field smaller and restructured active forces. These forces will be highly mobile and versatile so that allied leaders will have maximum flexibility in deciding how to respond to a crisis. It will rely increasingly on multinational corps made up of national units.
- NATO will scale back the readiness of its active units, reducing training requirements and the number of exercises.
- NATO will rely more heavily on the ability to build up larger forces if and when they might be needed.

To keep the peace, the alliance must maintain for the foreseeable future an appropriate mix of nuclear and conventional forces, based in Europe, and kept up to date where necessary. But, as a defensive alliance, NATO has always stressed that none of its weapons will ever be used except in self-defence and it seeks the lowest and most stable level of nuclear forces needed to secure the prevention of war.

The political and military changes in Europe and the prospects of further changes now allow the allies concerned to go further. They will thus modify the size and adapt the tasks of their nuclear deterrent forces. They have concluded that, as a result of the new political and military conditions in Europe, there will be a significantly-reduced rôle for sub-strategic nuclear systems of the shortest range. They have decided specifically that, once negotiations begin on short-range nuclear forces, the alliance will propose, in return for reciprocal action by the Soviet Union, the elimination of all its nuclear artillery shells from Europe.”

12. The declaration explicitly approved the mandate given in Turnberry to the North Atlantic Council in Permanent Session to oversee the ongoing work on the adaptation of the alliance to the new circumstances. It then continued as follows:

“ In the context of these revised plans for defence and arms control, and with the advice of NATO military authorities and all member states concerned, NATO will prepare a new allied military strategy moving away from forward defence, where appropriate, towards a reduced

forward presence and modifying flexible response to reflect a reduced reliance on nuclear weapons. In that connection, NATO will elaborate new force plans consistent with the revolutionary changes in Europe. NATO will also provide a forum for allied consultation on the upcoming negotiations on short-range nuclear forces.”

13. The Eurogroup ministers met in Brussels on 5th December 1990 when the tension in the Gulf crisis was steadily increasing. They stressed a specific European responsibility within the alliance framework and confirmed the London declaration as follows:

“ Recent and continuing developments have reinforced our conviction that the European allies should take on an even greater degree of responsibility for our own defence. We welcome the development of a strong, coherent and outward-looking European identity, including in the security area. It is part of a long-term trend that the alliance has welcomed and encouraged. It is also necessary for the maintenance of a balanced and equitable transatlantic partnership.

The alliance is in the process of adapting to the changing security environment and is therefore reviewing its strategy. We fully endorse this process. We support both the work in hand to develop a coherent and credible allied force posture in line with the emerging new strategy, and the general directions in which this work is moving. We stress the continuing need for a co-ordinated approach to our defence planning. We welcome in particular the increased emphasis on multinational formations as a contribution towards strengthening collective defence, transatlantic links and the European security identity. We have approved work on the defence planning issues arising out of the impact of the CFE Treaty undertaken in various Eurogroup fora, which we will make available to the alliance. We have tasked Eurogroup's subgroups to continue to concentrate their work on meeting the defence planning challenges of the post-CFE era.”

14. This meeting was followed by meetings of the Defence Planning Committee and the Nuclear Planning Group of NATO. In the final communiqué of these meetings, more details were provided concerning the strategy review process and the future character of allied forces, in particular in paragraphs 7 and 8, which read as follows:

“ In this time of transition we are looking forward and concentrating on the require-

ments of the future. As directed by the London summit, we are developing a new military strategic concept for the alliance. An important aim will be to provide NATO's military authorities with policy guidance upon which to develop a new force posture and operational concepts. We shall also take into account the inter-relationship between defence capabilities, arms control and the emerging co-operative security structures. Work on the strategy review is proceeding well and we expect to be in a position to approve the new strategic concept next spring.

In our Defence Planning Committee meeting we continued our consultations on the changes which many member countries are contemplating making in the forces they contribute to the common defence. We attach particular importance to the close co-ordination of national force plans, so that we maintain a coherent alliance force posture, in line with the emerging new strategy. Our aim is to ensure enhanced stability and security throughout the current period of transition and also in the new co-operative European security environment. Our future force posture will be based on smaller, more mobile and flexible active forces, able to respond to aggression from any quarter. A considerable portion of our forces will be held at lower levels of readiness and availability but able to be built up and reinforced if the need arises. We will increasingly rely on multinational formations, which will enhance co-operation between allies and underline the collective nature of our defence arrangements. A continued significant presence in Europe of forces from the North American democracies is indispensable."

15. At the press conference, Secretary-General Manfred Wörner elaborated on the idea of multinational forces. SACEUR had submitted a report on the progress made in the study of this subject. An agreement on the principles had been reached, but conclusions should be presented before the summer of 1991 together with conclusions on the new NATO strategy. Mr. Wörner recalled that NATO already had multinational forces such as AWACS and on-call naval forces. The form and mix of new multinational forces would be different, as well as their geographical zones and tasks. The whole issue would be discussed in the NATO Council, with the participation of France.

16. Mr. Wörner announced recently that this transatlantic summit, originally planned for June 1991, which would have approved the new

NATO strategy, will now take place in November 1991². It seems that the discussion on out-of-area activities and co-operation between NATO, EEC and WEU and also a possibly changing attitude of France in the alliance is requiring a longer period of reflection than expected, while the attitude of the Soviet Union towards implementation of the CFE Treaty should also be clarified.

17. The communiqué after the North Atlantic Ministerial Council meeting on 18th December 1990 contained no news about the strategy review or armed forces structures, but reflected awareness of increasing discussions on a European security identity and defence rôle in paragraph 5, where it was said:

"The adaptation of our alliance to new circumstances will include enhancing the rôle of the European allies with a view to ensuring a full and equitable sharing of leadership and responsibilities between Europe and North America. All allies agree that the foundation of European stability and security will continue to be a strong and viable North Atlantic Alliance which requires the continuing active political engagement and significant military presence of the North American democracies in Europe. A European security identity and defence rôle, reflected in the construction of a European pillar within the alliance, will not only serve the interests of the European states but also help to strengthen Atlantic solidarity. In this context, and as this process evolves, we will consider how the political and military structures of the alliance must be adapted accordingly.

We support current efforts to strengthen the security dimension in the process of European political integration, and recognise the importance of the recent decisions of the European Council in Rome. We emphasise, in this regard, the importance of safeguarding complementarity and transparency between the two processes of the adaptation of the alliance and of the development of European security co-operation."

18. One of the uncertainties of the moment is that the western allies have not yet worked out a new military strategy for the future. Strictly speaking only a new common defence strategy can be a sound basis for new force structures and new equipment requirements. High-ranking officials are negotiating now to adapt NATO's long-standing strategy of forward defence and flexible response to the new political and mil-

2. Neue Zürcher Zeitung, 20th-21st April 1991.

itary situation in the world. It seems, however, that little progress is being made, since the debate on strategic issues is directly linked to the political debate on the future rôle of NATO. The central issue in this political debate is whether NATO should be transformed into a more political body with a broader task in order to guarantee western security interests worldwide.

19. It is a significant indication of the changes taking place in the alliance that France, which left NATO's integrated military structure in 1966, apart from its long-standing participation in the meetings of the North Atlantic Council which is discussing issues of a political nature, is now participating again in the work of the NATO Defence Planning Committee since March 1991. This committee is actually assessing the change in risks since the actual dissolution of the Warsaw Pact, while taking into account the still formidable strength of the Soviet armed forces.

20. At the same time, however, France has indicated that it will not participate in the next phase of the committee's work, which is to establish a new strategy in order to respond to the changed risks. There can be no doubt that France's behaviour is inspired by its wish to keep up the appearance that it remains completely independent in establishing its strategy and deploying its armed forces.

21. It remains to be seen how long it can maintain this seemingly complete freedom of action if it wishes seriously to set up a common European security policy.

22. Undoubtedly, an up-to-date assessment of the security risks faced by its members must be the cornerstone of the alliance's new strategy and doctrine. There is little disagreement that the withdrawal of Soviet troops and equipment from the territory of its former Warsaw Pact allies and the continuing democratisation in Central Europe greatly diminishes the risks of a Soviet surprise attack on Western Europe. At the same time, the instability, if not explosiveness in the Middle East, in the southern republics of the Soviet Union and the potential for conflict in North Africa is obvious enough for the allied countries not to diminish their vigilance on the southern flank.

23. Be that as it may, opinions on the situation on the northern flank are less clear and when it comes to the security of Europe, both politicians and the military in Norway feel their country is being isolated. General Vigleik Eide, chairman of NATO's military committee, admits that Soviet forces in the north have been kept at the same level, but he has pointed out that the Soviet back-up system as a whole is being reduced under the arms control treaties, thus reducing the overall capacity for a real

offensive in the north. On the other hand he is aware that Soviet troops in the north can more rapidly be a threat since warning times in the flanking regions will be shorter.

24. The Norwegian defence minister, Johan Jorgen Holst has pointed out that the Soviet military concentration on the Kola peninsula is still being reinforced. This view is backed on all political sides. Aging bombers and combat-aircraft have recently been replaced by Tu-26 Backfires and MiG-27 Floggers, the aircraft carrier "Admiral Kuznetsov" is joining the northern fleet and Soviet amphibious forces have been strengthened with the redesignation of motor rifle divisions as naval infantry. As another sign of the Soviet belief in the importance of this zone, it should be mentioned that it has announced large amphibious exercises in the northern area, to be held in September 1991.

25. He said that the defence of the northern flank is still very dependent on reinforcement, and this should remain a priority not to be diminished. Since reinforcements for northern Norway have to be arctic-equipped and trained, there should at least be an element of NATO's future rapid reaction corps to meet these requirements.

26. It is quite clear that notwithstanding the lack of decisions on a new strategy and on connected issues, member states on both sides of the Atlantic did not wait to introduce major cuts in defence expenditure with important consequences for the future of their armed forces. Likewise, the mutual consultations ministers called for before taking national decisions have apparently been less decisive than the national finance ministers' calls for budget cuts. There is a rush for budget cuts without regard for the long-term consequences in an Atlantic or European framework.

27. The question remains if this process of the apparent lack of international co-ordination in national defence expenditure reductions does not draw heavily on the alliance's capability to respond adequately to the changes in security risks.

28. Possible options now being considered in allied discussions such as facing the risk of regional conflicts, improved reinforcement capability outside the central region, the eventual need for graduated military options in the fields of readiness and mobilisation and also for available, combat-ready forces of high flexibility and of a multinational character demand careful planning. Meticulous co-ordination of all different national force structures and procurement is essential for building a successful new defence posture. It deserves more attention.

III. Future allied force structures

29. While both the North Atlantic Council and the Defence Planning Committee respectively are still continuing their drawn-out discussions to define a political concept of NATO's rôles and purposes in the future and to review strategic concepts, the Military Committee has made great progress in designing a new force structure.

30. This appears to be building a new security framework in reverse order, but the Military Committee was particularly keen to reach early conclusions because all allied member countries are already making national force plans and reducing their defence expenditure in order to adapt to the changing East-West relations.

31. In an early stage of the discussions, agreement had been reached on a number of basic principles:

- there will be a lower level of forces and a lower degree of readiness;
- flexibility and mobility are essential in order to allow for rapid counter-concentration options against any kind of threat;
- reinforcement capacity, also implying a greater reliance on reserve forces, will have greater importance;
- a multinational integration of some key forces will be indispensable³.

32. Military experts generally agreed that any reappraisal of force structures should take account of the gradually inevitable fact that the United States forces in Europe will be considerably reduced in the near future. Recently, a United States panel of twenty-six experts on Atlantic security, including leading Republican and Democrat members of Congress, recommended that the United States cut its NATO forces by two-thirds in an effort to give the Europeans the job of defending Europe.

33. Most European security experts are also assuming that the United States will not leave more than about 70 000 of its troops in Europe after 1994, when the Soviet troops should have left the territory of its former Warsaw Pact allies in Central Europe.

34. The abovementioned panel advocated limiting United States ground combat forces to a small number of troops and placing them in multinational units instead of the large, wholly American units now deployed.

35. The French Foreign Minister, Roland Dumas, while explaining the Franco-German

proposal for a common European foreign and security policy, radically suggested that Western European Union could well be the point of departure for a European armed force *sui generis*⁴.

36. Mr. Willem van Eckelen, WEU's Secretary-General, in trying to steer a reasonable middle course, proposed the establishment of multinational European as well as American-European units which could be deployed as rapid reaction forces. The strictly European forces could be deployed for out-of-area operations not only in the Mediterranean and the Middle East but also in the Balkans and Eastern Europe. These European multinational forces should be organised at the lowest possible level. An air-mobile division for the northern sector could for instance consist of Belgian, British, Dutch and German units. French forces would have no difficulty in participating because they could consider these forces as inherently European⁵.

37. The Federal Republic is preparing to change its constitution so as to enable its armed forces to operate outside the area covered by the North Atlantic Treaty. According to the recent debates on the Federal budget in March 1991, the government is seriously examining how the Federal armed forces could participate in joint action in the framework of an adequate European security structure such as Western European Union. Mr. Stoltenberg, the Federal Defence Minister, said that valuable and proven ways of multinational co-operation should be maintained in essence. At the same time, however, he said, there are cases, such as the creation of rapid reaction forces, where increased integration makes sense and others where it is useful and compulsory, when a country is no longer able to deploy its own operative forces in certain sectors⁶.

38. German sources consider multinational forces consisting of units from different allied nations to be of great importance for reinforcing the political basis for the deployment of armed forces in an allied framework. Such forces would also contribute to keeping alive the defence co-operation between the United States and Europe after the CFE arms reductions. The deployment of allied armed forces should be more evenly spread over Europe's territory in order to improve flexibility and mobility in crisis situations and also to replace the east-bound forward defence on German territory by multifaceted distribution with capabilities to reassemble quickly, but without permanently being directed towards the east⁷.

39. William Taft, the United States permanent representative to the North Atlantic

3. The issue of multinational forces is being considered in detail in the Defence Committee's report: Arms control: Force reductions and the rôle of multinational units.

4. *Le Monde*, 12th March 1991.

5. *NRC-Handelsblad*, 1st March 1991.

6. Address in Bonn on 13th March 1991.

7. *Die Welt*, 29th June 1990.

Council, speaking on European security in a new world order, made it clear that his nation supports a European pillar which does not duplicate the alliance and one which operates within the alliance to do alliance tasks and outside the alliance only where it wishes to take on new missions.

40. At the same time he stressed that NATO's efforts towards a more collective approach to defence – for example, the development of multinational units within the integrated structure – should continue to parallel progress towards greater European integration in other areas.

41. In order to understand better what Ambassador Taft meant, it should be noted here that the alliance's future tasks are an issue on which the United States and a number of its European allies still disagree.

42. On 12th April last, the NATO Military Committee reached agreement on the design for a new force structure which will be submitted to the ministerial meeting of the North Atlantic Council in Copenhagen on 6th and 7th June 1991. This agreement makes a distinction between three different levels of formations.

- (i) *Main defence forces.* These forces are the largest section of the forces of allied countries and they will be in a lesser state of preparation.
- (ii) *Reaction forces.* A distinction will be made between:
 - (a) *Immediate reaction forces,* to be formed after the fashion of the Allied Command Europe Mobile Force (AMF), a multinational brigade-sized force, supported by fighter squadrons from several nations, and trained for operations on NATO's northern and southern flanks.
 - (b) *Rapid reaction forces,* which should be of army corps size (70 000 to 100 000 men) and drawn from units of European member countries' forces, with United States air support. The type of command for these forces has not yet been decided. It is still to be decided whether one country should assume command or whether it should be rotated among participating countries. These forces may be based in Germany, but several other options are still being discussed. The combat-ready rapid reaction force could be sent from Central Europe to keep the peace or do battle elsewhere. It is thought that the whole force need not always

be activated in cases of emergency. Parts of it may be sent, shaped to fit the circumstances of action. It could also intervene under different hats. It could operate under NATO command within the area covered by the North Atlantic Treaty; if an out-of-area operation were required, the European units could do the job under WEU responsibility. The equipment of this force should be adapted to its rôle, which means that it should have a wide range of armour and armaments, and also be able to move quickly if required. Air-mobility would be an essential characteristic. It goes without saying that, with a view to combined operations, the equipment and resources of the different national units should be interchangeable and based on standardised designs.

- (iii) *Back-up or augmentation forces.* While part of these forces should be active serving units for maintaining and exercising purposes, they would mainly consist of reservists. The equipment of these forces should be stored and prepositioned in combat-ready conditions.

IV. The restructuring of national armed forces

43. In this chapter, a succinct synopsis will be given of the state of affairs in the restructuring of the armed forces in each of the member countries of WEU.

Belgium

44. On 24th December 1990, the Belgian Government approved the Charlier II programme for restructuring the armed forces.

45. One of the programme's objectives is to reduce the defence budget by 10% over a five-year period. The army's total strength will be reduced from 4 active and 2 reserve brigades to 3 active, of which one will remain on German territory, and one reserve brigade. As a consequence, the number of active army battalions will be reduced from 41 to 22. The paratroop regiment will not be affected.

46. The air force will phase out its B-727 transport aircraft and a programme to update its existing 12 C-130 Hercules should be completed by 1995. One fighter-bomber attack squadron equipped with Mirage-5 BA will be disbanded. The Mirage-5 BRs of the tactical reconnaissance squadron will be updated, while all F-16 A/Bs of

the remaining six squadrons will go through a midlife update which should enable them to remain in service well beyond the turn of the century.

47. The navy will retire 14 old mine-sweepers and reduce the operational availability of the remaining ships. A decision to equip the four existing frigates with a modern air defence system has not yet been taken and different systems are now being examined by the navy.

France

48. In July 1989, the French Government adopted "Armées 2000", a plan to simplify and better harmonise the territorial structures of its armed services. It has since been readapted twice in view of the changed situation in Central Europe.

49. The plan is based on three principles: operationality as a prerequisite, coherence of the organisation and development of interservice co-operation. Three main areas of interest are distinguished: the north-east region to meet crisis threats in Central Europe, the Mediterranean region oriented towards the south and the Atlantic region to protect the ocean supply lines. The French defence budget as percentage of the GNP has been decreasing for a number of years: from 3.67% in 1988 to 3.61% in 1989; 3.54% in 1990 down to 3.37% in 1991. As far as equipment expenditure is concerned, the budget for 1991 is reduced by 2.6% in constant francs as compared to the 1990 budget. In the defence budget for 1991, several programmes have been cut or slowed down.

50. The army in particular will suffer from the budget reductions. Orchidée, the helicopter-borne battle surveillance programme, for which 800 million francs have already been spent, was abandoned. As a consequence of the Gulf war, however, there are chances of its revival in a more modest version, called Horizon. Otherwise, as a consequence of the reduction of army corps from three to two there will only be two regiments of multiple-launch rocket systems instead of the three originally planned. Programmes for armoured and tactical vehicles and also for engineering equipment have been reduced. The acquisition programme for the AMX Leclerc main battle tank has been reduced from 1 400 to 800 tanks.

51. In 1983, France created its rapid intervention force (FAR), which certainly facilitated its participation in the Gulf war. The FAR's equipment is, however, open to criticism and experts say that it is short of performing artillery, battletanks, adequate air defence systems and long distance air transport capability.

52. It has five divisions and a logistics brigade, altogether 63 000 men, of which 70% are professionals.

53. The army division "Daguet", deployed in the Gulf area during the war, was composed of elements from several different FAR units.

54. The French Defence Minister, Pierre Joxe, is now considering building on this experience and constituting a new interservice unit capable of accomplishing long-distance missions.

55. While the original FAR was set up for deployment in low- or middle-intensity combat, the Gulf war demonstrated that future out-of-area conflicts may well require heavier, better equipped forces with more modern technology.

56. While the FAR is based on a armour-helicopters combination, there will be a need to increase ground-ground and ground-air artillery, to reinforce engineering and transmission support, to give it heavier tanks and autonomous intelligence equipment and to increase logistics. In peacetime, it should be manned by long- or short-term professionals and voluntary conscripts in order to keep the operational qualifications at a high level.

57. For the air force, all efforts are being concentrated on the development of the new tactical combat aircraft Rafale, its air-to-air missile Mica and its stand-off air-ground weapon Apache. This priority had a negative influence on the number of Mirage 2000 combat aircraft being ordered, while it may also affect the future replacement of the aging fleet of Transall transport aircraft.

58. The navy has slowed down the building of its nuclear-powered aircraft carrier Charles de Gaulle and is phasing out the Clemenceau, for which no replacement has yet been ordered. The first of a new class of surveillance frigates, Floréal, is under construction, while a light frigate programme is under development. The construction of a third and fourth anti-air-warfare frigate has been postponed, because the new anti-air-warfare system has not yet made sufficient progress.

59. Recently, it was decided to decommission the guided-missile cruiser Colbert in 1991 instead of 1993, as originally planned.

60. Repeated navy pleas to replace its vintage Crusader interceptor aircraft by McDonnell Douglas A/F-18 Hornets have met with no response and instead 17 Crusaders will now be modernised insofar as possible, while waiting for their replacement by the naval version of the Rafale in 1998.

61. The replacement of the Bréguet Atlantique I maritime surveillance aircraft by its successor Atlantique II is not up to schedule.

62. In the wake of the Gulf war, President Mitterrand urged the French parliament to undertake a thorough debate on the organisation of the armed forces, their nature and composition.

Germany

63. According to an intragovernmental agreement, the defence budget will be reduced from DM 57 500 million in 1990 to DM 52 600 million in 1991, with a portion of about 72% for organisation and maintenance costs and 28% for investments. About 63% of these investments are assigned for military procurement purposes. The reduction of the defence budget is a repercussion of the unification process and has to be put into perspective: 1989 – 52 500 million; 1990 – 57 500 million; budget for the merging of two armies, 1991 – 52 600 million.

64. During the period 1991 to 1995, the total number of active military personnel will be reduced from 515 000 (1st January 1991) to 370 000, a ceiling which has been specified in international agreements. Accordingly, the wartime strength will be increased to 900 000. By the end of 1994, active personnel will be distributed to the three services as follows: army – 255 400, air force 82 400, and navy 32 200 personnel. In the western part of Germany, two combined territorial corps commands will replace the current three independent corps and three independent territorial commands. The eight new regional division commands will replace the present 12 independent divisions and 6 military district commands in Western Germany.

65. The air force will shift its priorities towards reconnaissance and air defence at the expense of air attack capabilities, 45 Tornado aircraft will be taken over from the navy. However, the air force will reduce its overall aircraft inventory from the present more than 1 000 to less than 500.

66. The navy's present blue water component (Frigates with ASW helicopters embarked, destroyers and maritime patrol aircraft) will be practically maintained until the year 2005 with a temporary reduction in the number of ships to 12 by the year 1995. The Baltic component (fast patrol boats, SAR helicopters and Tornado fighter-bombers) will undergo a significant reduction. Mine counter-measure vehicles and submarines, operating in either area, will be gradually decreased.

67. The intermediate strength of the Bundeswehr in the new Länder (former territory of the GDR) will be around 50 000 soldiers, projected to increase after the withdrawal of Soviet forces from German soil up to the final total of approximately 70 000 active peacetime strength.

68. A number of decisions still have to be taken about equipment inherited from the former East German army – especially treaty-limited items and ammunition.

69. No MiG-22s or MiG-23s will be flown operationally in the German air force. The

further determination of the MiG-29s is not yet decided, the aircraft are currently subject to a test programme which will be finished early in summer this year.

70. The future of matériel that cannot be used in the Bundeswehr is subject to consideration – partly to negotiation. Several former Warsaw Pact member countries have shown interest in some of these items.

71. Meanwhile, the question of arms delivery contracts signed by the GDR before unification has been solved in mutual agreement with the Soviet Union.

72. At the moment, there are still 320 000 Soviet soldiers on German soil. The withdrawal is taking place according to the ratified agreement and is ahead of plan in some areas.

Italy

73. In 1989, the Italian defence budget totalled approximately Lire 21 000 billion, or around 2-2.5% of GNP, and for 1991 it has been fixed at Lire 24 000 billion or roughly 1.7% of GNP.

74. In fact, in July 1988 a study was initiated "Project 2000", which was intended to be a guideline for restructuring the armed forces. In Project 2000 it was originally assumed that Italy would allocate around 2.5% of its GNP to defence. Meanwhile, a government decision has reduced this base-line figure to 2% of GNP. Further cuts are envisaged in which defence spending may be reduced to 1% of GNP.

75. In 1989, the equipment budget totalled around Lire 5 000 billion, but the 1991 budget estimates only 4 000 billion for modernising the three services. There is no long-term or short-term investment planning.

76. Due to defence budget cuts and lack of conscripts, the army had to disband about 30 battalions in 1989 and 1990. A large part of the equipment of the armed forces is out of date. Tanks in use are first generation Leopards, M-47s and M-60s. The artillery is also out of date.

77. The air force has 96 Tornados, but at the same time is still flying 150 vintage F-104s. The new AMX, an attack bomber, is now in production. A first batch of 21 aircraft has been delivered to the Italian air force, while delivery of a second batch of 59 AMX is under way. There is a total requirement of 238 AMX aircraft. The EFA will be available only towards the end of the century.

78. The navy is not in a more favourable situation with one new aircraft-carrier, the *Gariibaldi*, without aircraft because its Harriers will be delivered only at the end of 1991, while both submarines and cruisers are vintage models.

with only two submarine replacements under construction.

79. Four years ago, a rapid intervention force was created, but it is composed mainly of insufficiently-trained conscripts without proper means of transport.

80. It is said that a new defence white paper will be published in April 1991 which is believed to aim at lighter and better-equipped armed forces which could be integrated into the European-Atlantic defence system. It is also said to favour a large degree of professionalism, together with a reduction of conscripts in the armed forces.

The Netherlands

81. In March 1991, the Netherlands Government released a defence white paper, announcing a thorough reorganisation of the Dutch armed forces. In the following paragraphs, some of the proposals made in the white paper are highlighted, but it should be borne in mind that it has not yet been discussed in parliament, and that further cuts may be expected.

82. Overall defence spending will be cut by 2% in real terms in each of the years 1992, 1993 and 1994 and will then be frozen at around 13 400 million Dutch guilders per year until 2001, with annual adjustments to be made for inflation. Compared with present spending levels, the cuts will save 1 600 million guilders through 1994 and an additional 5 000 million guilders between 1995 and 2001. Weapons procurement spending will total about 2 980 million guilders per year from 1992 through 2001. Reduced procurement spending during this period will save 3 000 million guilders.

83. A major programme is the setting up of an airmobile brigade for which 3 140 million guilders will be spent. This airmobile brigade, capable of deploying as part of a NATO multinational division or in support of United Nations missions, will consist of three light infantry battalions and fire support, combat engineer and logistic elements. The Dutch army is planning to lease 20 armed helicopters by 1992 (MBB Bo-105, Agusta A-129 or McDonnell Douglas Apache) and buy 40 combat helicopters as from 1996 (improved McDonnell Douglas Apache or Eurocopter Tiger). Furthermore, starting in 1993, some 25 troop transport helicopters will be bought.

84. The number of divisions will be reduced from three to two. The army will phase out all its 486 Leopard I-V tanks before 1996.

85. A light brigade of one tank battalion, one armoured infantry battalion and two reconnaissance battalions will be part of the multinational guard force to be stationed in the Federal Republic.

86. The air force will upgrade all its nine squadrons of F-16 A/B combat aircraft in a major midlife update programme together with other allied nations. Modifications will include the reconnaissance and electronic warfare equipment, improved air-to-air and air-to-ground weapons and adaptation for in-flight refuelling.

87. Also envisaged is the procurement of new transport aircraft, including two large transport aircraft with tanker capability and six tactical transport aircraft, possibly the CASA CN-235 or the Alenia G-222.

88. The navy will gradually phase out a number of elderly frigates and mine-hunters, but new frigates and submarines are under construction. With a slightly smaller navy, structure and quality of the naval forces will be maintained.

Portugal

89. The Portuguese Government is preparing a defence white paper to be submitted to parliament before the end of May 1991. It has already become known that the government intends to reduce military service to 4 months, but, at the same time, it is examining the possibility of engaging volunteers for a longer period of 18 to 36 months.

90. In the navy, three new frigates are now being commissioned while 5 Lynx helicopters will be acquired for use on frigates. There are also plans to replace existing older submarines and mine-hunters.

91. The air force is to have 20 F-16 A/Bs, older aircraft being gradually phased out.

92. No decisions have yet been taken as regards armoured personnel carriers and tanks which should be given to the Portuguese army as part of the cascading of equipment by other NATO allies.

Spain

93. Spain plays a major geostrategic rôle in the rearguard of the NATO countries and in the front line in the Western Mediterranean area. For this reason, all events in this area of the Mediterranean, including regions of the North African countries are significant. Consequently, the Strait of Gibraltar and the sea lanes leading to it are considered key areas for Spain's defence. Many of the national defence resources of the three different services are therefore in the southern military areas of the country. In November 1988, agreement was reached between NATO and Spain for making its contribution to the common defence effort, priority being given to the normal area of Spanish operations and interests.

94. The army now has 15 brigades. In 1988 the decision was made to set up a rapid reaction force. Implementation awaits further analysis of its composition. It has been determined that it will not have a fixed organic structure. A division headquarters is being created within the army component. The combat units will be assigned for operations or exercises each time according to the planned task following the task force principle. The parachute brigade and the legion forces, plus a light brigade are initially the units to be trained to operate with the rapid reaction force. This rapid reaction force may also be used to accomplish missions for the common defence of the alliance, but it needs further airlift capability to be really effective. The artillery is aging and new and better helicopters are required for both transport and attack rôles. A total of 18 Aérospatiale Super Puma transport helicopters have recently been delivered and Spain has shown interest in the Franco-German Tiger helicopter to replace its MBB BO-105s. The oldest existing tanks in the units, M-47s and M-48s, now need to be replaced. Studies for the selection of a new tank have been held up in anticipation of the transfer to Spain of M-60 tanks as a result of the CFE Treaty.

95. The backbone of the Spanish air force is formed by the 9 fighter squadrons of the air combat command, consisting of 4 squadrons of EF-18 A/WX/FBA, 3 squadrons of Mirage F-1 A/WX/FBA and 2 squadrons of Mirage III FBA/CWI. In addition, the tactical air command consists of 1 squadron of F-5A FBA/IDF, 2 squadrons of F-5B TRG/FBA and 1 squadron of F-5A TRF/IDF.

96. The air force's transport command is mainly equipped with C-130 Hercules, C-212 Aviocars and CN-235 Casa Nurtanio.

97. The Mirage IIIs are currently being modernised, a modernisation programme for the F-5Bs also having been approved, with forecasts for a later modernisation of the F-5A and RF. There is a programme to develop a light fighter-aircraft, the AX which should be produced by Casa but this is still in a preliminary state and subject to many uncertainties.

98. The Plan del Alta Mar, an ambitious enhancement and modernisation programme for the Armada, the Spanish navy, during the years 1989-2002 is still in force without major funding problems. There will however be a one-year delay in the programme for 8 new mine-hunters and possibly in the building of 2 Santa Maria class frigates.

99. The government has cut the defence budget for 1991 by 7.9% as compared to the budget for 1990, but the consequences of this reduction for the different services and their equipment programmes are not quite clear yet.

United Kingdom

100. In July 1990, Defence Secretary Tom King presented the results of the study "Options for Change", a preliminary outline of the future structure of the British armed forces. Originally, the government had planned to publish a defence white paper in March 1991 after consultations with its NATO allies, but publication has now been delayed in order to allow the Ministry of Defence to examine the implications of the Gulf war.

101. In a recent report on defence expenditure plans through 1993-94, the Ministry of Defence reaffirmed its basic intentions to restructure the armed forces and reduce defence spending. Although there will be additional costs for force deployment in the Gulf this year, there will be a downward trend in the years to come. While defence spending for 1989-90 is estimated at £21 200 million, the estimate for 1990-91 is £22 100 million, for 1991-92 £22 800 million, for 1992-93 £23 350 million and for 1993-94 £23 390 million, a decline in real terms if the expected inflation rate is taken into account. As a percentage of GNP, defence spending would decline from 4% in 1990-91 to 3.4% in 1993-94.

102. The "Options for Change" study proposed to cut the overall strength of the armed forces by 18% to 255 000 by 1995. According to the Defence Secretary, the general aim is smaller forces, better equipped, properly trained, flexible and mobile and able to contribute both in NATO and, if necessary, elsewhere.

103. At the moment, the army's rapid response capability consists of one airborne brigade and the Royal Marines' 3rd commando brigade which can be committed to out-of-area operations. The study has proposed to improve this capability by grouping the Royal Marines' 3rd commando brigade, the 5th airborne brigade, the 24th airmobile brigade and unspecified armoured formations into a strategic reserve division. This would require the acquisition of light armoured vehicles and other suitable equipment, while more investments would be required in the field of air-and-sealift capacity.

104. Other changes proposed include a reduction of the British Army of the Rhine from four to two divisions and a reduction of the Royal Air Force (RAF) Germany from 15 to 9 squadrons.

105. "Options for Change" further recommended that the RAF phase out its 4 F-4 Phantom squadrons, while three out of 11 Tornado GR1/1A squadrons should be disbanded, with the aircraft of 2 disbanded squadrons to replace the RAF Buccaneers in the maritime strike rôle after having been upgraded for their new mission.

106. "The number of Tornado F-3 squadrons should be increased from 6 to 7, while the 3 Jaguar squadrons should remain in service until their replacement in the late 1990s. In the Federal Republic, the RAF will maintain 9 squadrons, including 4 Tornado GR1/1A, 2 Harrier GR5, 1 Andover and 2 helicopter units.

107. The Royal Navy should retain its three Invincible class aircraft-carriers and its full Fleet Air Arm, but the number of frigates and destroyers will be reduced from 48 to about 40, while the submarine force will be slimmed down from 27 to 16.

108. No new date has yet been fixed for the publication of the defence white paper.

V. Lessons from the Gulf war

109. The Gulf war, which lasted from 17th January to 27th February 1991 and ended in a victory of the coalition forces, has been a massive operation on a scale which rather came as a surprise to all allied countries involved. It occurred at a time when nations in both East and West were trying to take stock of the results of the CFE (conventional forces in Europe) negotiations in Vienna and growing détente through important reductions in their armed forces and the reduction of defence expenditure.

110. In the early stage of the Gulf war, a number of western and Arab nations deployed forces in Saudi Arabia in order to contain any further Iraqi aggression. The United States and Western European nations – with considerable success under the authority of WEU – deployed naval forces in the Gulf area for the same purpose and also in order to enforce an economic embargo.

111. Meanwhile, the Security Council adopted a number of resolutions which should have made clear to Saddam Hussein that his position was untenable and that he had virtually no choice other than to retreat from Kuwait. For a number of reasons, however, Saddam Hussein was intransigent and so the coalition countries entered into a "logic of war" as President Mitterrand called it.

112. Against the massive Iraqi forces, sheer numbers counted, and all those who had thought that, after the end of the cold war, relatively small rapid intervention forces would be enough to control regional conflicts witnessed a build-up of the coalition forces on Saudi Arabian territory which, notwithstanding impressive air and naval transport capacity, took months before enough were assembled to take the calculated risk of an offensive operation.

113. In several recent reports of the WEU Assembly Defence Committee, a detailed

account has been given of the quantity and quality of coalition forces assembled in the Gulf area⁸.

114. As has often been the case in history, the war operations did not develop as expected. After weeks of extensive air operations, the ground offensive took only four days to achieve the objectives. There were no large tank battles and it almost appeared as if Kuwait was recaptured by surprise.

115. While all European defence ministries have started to analyse their future military requirements in terms of the Gulf war, they say that it is far too early to draw final conclusions. Their analysis will cover the capability of equipment, the preparation of the armed forces, logistics and the development of new weapon systems. Cautiously they add that it will most probably not reverse the general downward trend of defence expenditure, but it is admitted that the decline may well slow down.

116. The following paragraphs will review certain specific factors and equipment which played major rôles in the war.

(i) The vital rôle of satellites

117. From the first days of the Gulf crisis to the air operations and the ground war it has become increasingly clear that satellites have played a vital rôle. Many kinds of military spacecraft have enabled the allied forces to be informed in real time about a wide range of developments.

118. In the first months after the day of the invasion, military intelligence satellites of different types provided a faithful picture of the build-up of Iraqi forces in Kuwait and neighbouring Iraqi territory.

119. As regards the war operations, military weather satellites provided highly-detailed weather information, indispensable for planning all kinds of military operations, be they bombing missions or airborne missions to provide support and cover for ground troops or military activity on the ground and naval operations.

120. Reconnaissance satellites of various types provided information about Iraqi positions, assessed the damage achieved by air raids and provided information about weak spots in the Iraqi defence lines. The United States navy used its UHF communications satellites to relay imagery from spy satellites to ships at sea, which in turn were able to display images very shortly after data reception, using their fleet imagery support terminals.

8. See Documents 1243, 1248 and 1268.

121. The Navstar global positioning system, providing precise navigational information which enables a hand-held receiver to determine its location, has also proved to be extremely useful. This system facilitated navigation for vehicles in the desert and enabled the artillery to home in on enemy targets accurately and quickly. Aircraft in bombing raids or other missions could, with the help of Navstar, fulfil their task with the greatest accuracy.

122. United States defence support programme satellites, intended to alert United States officials about launches of long-range nuclear ballistic missiles, were actually used to provide information about the launches of Iraqi Scud missiles and from which direction they were coming. This information enabled the crews of Patriot missiles to react accordingly.

123. Communications intelligence satellites provided information on Iraqi radio transmissions. Finally, a number of communications satellites facilitated the transmission of innumerable communications at all times.

124. Satellites and reconnaissance aircraft of different types have provided crucial information regarding the Iraqi forces and their activities. Numbers and types of material deployed, communications, radar signals and other electronic signals were all known in detail and this gave the coalition forces an important vital edge in the preparation of adequate military actions.

125. It should be noted, however, that during the Gulf war, satellites which had in principle been deployed for strategic data collection on Warsaw Pact activities were increasingly used for tactical purposes. Some incidents, such as the bombing of a bunker in the Al-Amiriyak district of Baghdad and the initially unnoticed experimental launching of three Iraqi Scud missiles on 2nd December 1990 have raised doubts about the expediency of already using intelligence satellites for tactical purposes.

126. The point should be made here that satellites, however sophisticated their equipment, can never be the only means of intelligence gathering. Other means such as reconnaissance aircraft and special forces, operating behind enemy lines are compulsory additional elements in order to have a complete and faithful picture of the enemy's strength and activity and of the effects of one's own activity on the enemy's territory.

127. It needs no explanation that modern armed forces would lose much of their effectiveness if they were to operate without varied support from a vast range of different military spacecraft. Even if many national armed forces consider military satellites to be an exotic and unaffordable luxury, these have now proved to

be an indispensable factor in modern warfare, saving literally thousands of lives.

128. European armed forces would do well not to ignore this practical lesson. If, understandably, each of them individually is unable to obtain the financial means necessary for such expensive systems, they should at least seriously consider the possibility of procuring a military satellite system in a co-operative effort.

129. According to Space News, 11th-17th March 1991, the French Defence Minister, Pierre Joxe, publicly stated that observation satellites were responsible in large measure for the quick coalition victory in the Gulf. He proposed that the international community should use space-based means of observation to track arms movements worldwide.

130. He furthermore ventured that one of the great lessons of the Gulf war for the future was that if the international community was willing, space technology should be employed to assure disarmament, verify compliance and monitor the illicit traffic of arms.

(ii) *Precision-guided weapons*

131. Precision-guided weapons played a considerable, if not decisive, rôle in knocking out important targets on the territory of Iraq and occupied Kuwait.

132. Of the total of 88 500 tons of bombs dropped on Iraq and occupied Kuwait, laser-guided or "smart" bombs accounted for only 6 520 tons, of which 90% hit their intended targets, while the unguided bombs had an accuracy rate of only about 25%.

133. The ability of aircraft to destroy Iraqi targets with unguided bombs had been overestimated. It was reported that after more than 100 missions in which F-15E, F-16 and F/A-18 aircraft failed to knock out any of 42 important bridges, United States military planners directed F-117 stealth and F-111 fighter-bombers to do the job with 500-pound laser-guided bombs, and they succeeded in accomplishing their mission. Of a total of 54 bridges attacked with precision-guided munitions, 40 were rendered unusable and 10 more were damaged.

134. It should nevertheless be borne in mind, that the cost of a "smart" bomb is easily a hundred times the cost of a gravity bomb of comparable size. Precision-guided weapons cost about \$100 000 to 130 000 each, roughly a fifth of the cost of an air-launched missile and one-tenth that of a Tomahawk cruise missile, which delivers only half as much ordnance. On the other hand, a cost-effective comparison should also take account of the unsuccessful bombing raids with unguided bombs involving considerable effort in preparation and almost unacceptable risk for both pilots and aircraft, while at

the same time possibly destroying unintentional targets.

135. Never before have "smart" bombs been used to the same extent as in the Gulf war and, taking into account the results as compared with unguided bombs, there can be little doubt that they will be much more widely used in the future.

136. At the same time experience in the Gulf war will give a boost to the development of a new generation of stand-off weapon systems which will allow attack aircraft to deliver their explosives with the same degree of accuracy as the present-day "smart" bombs, but from a great distance, thus reducing the risks for both pilot and aircraft.

(iii) *Stealth*

137. Stealth technology has also shown its usefulness. In particular, the United States F-117s were effective in the first phases of the air campaign. It should be noted that F-117s destroyed 43% of all Iraqi targets with a success rate of 95%, while they made only 1 270 out of a total of 114 000 coalition sorties, half of which were said to be proper fighting missions.

138. On the other hand, it has been observed that stealth aircraft did not have a monopoly in taking out the Iraqi air defence system in order to ensure coalition air superiority. The coalition forces made intensive use of electronic countermeasures to jam Iraqi radars and communications and of defence suppression aircraft to neutralise surface-to-air missile systems. At the same time, computerised systems drawing on tactical intelligence were able to chart courses for attacking aircraft which avoided air defences. All these technologies contributed to the fact that aircraft without specific stealth characteristics, such as the F-18s, F-15s, F-16s and A-6s, were also able to operate very effectively over Iraqi territory after the initial phase.

139. Stealth is not necessarily the cure for all ills. At the present stage of technology, high stealth characteristics in aircraft design can only be achieved at the expense of manoeuvrability or multipurpose use. Moreover, the location of armaments in the fuselage in order not to expose them to radar waves also has a negative effect on the capability of the aircraft to take fuel and be sufficiently armed. The F-117 has rather restricted autonomy and can only take two tons of arms, a third that of other modern attack aircraft. Moreover, the price of a F-117, generally estimated at about \$150 million, compels military commanders to think twice before they send the aircraft on mission.

140. A likely conclusion seems to be that for certain operations in heavily-defended areas the use of stealth aircraft is justified. The ever more

sophisticated panoply of electronic warfare systems and other high-technology support systems may however ensure effective operational deployment of more conventional attack aircraft for some years to come, and that at a relatively more acceptable price.

(iv) *Air transport capacity*

141. Air transport capacity was essential for moving troops and equipment quickly to the threatened area at short notice and later for logistic supply. Here, the United States armed forces have a significant capacity and they were able to build on their experience in moving troops to Western Europe in the framework of regular NATO exercises. Yet with their extensive fleet of C-141 Airlifters and C-5 Galaxies they still had to requisition civilian carriers in order to complete the task.

142. The European members of the coalition force found there were serious deficiencies in their air transport capacity. The French made 3 200 flight hours to transport 5 500 troops and 2 500 tons of freight, mainly with C-160 Transalls and aged DC-8s. The Dutch made 80 flights with different aircraft, including German Transalls, Belgian and Portuguese C-130 Hercules, the United States' C-5 Galaxy and even Soviet Il-76s and Antonov's 124 in order to move two Patriot squadrons from Germany to Turkey. It is said that C-5 Galaxies, which were not available in large numbers at that time, could have done the job in 15 flights.

143. In the light of these experiences, it would make sense if Western European countries seriously considered the creation of a large aircraft transport force for joint use, which could be co-ordinated by WEU.

(v) *Ballistic missile defence*

144. The launching of modified Scud ballistic missiles towards Saudi Arabia and Israeli territory was certainly one of the aspects of the war which received almost disproportionate attention. Even if these attacks caused relatively little destruction, they had an important psychological impact which need not be explained in full here. Unfortunately, they also needed far more attention from the military than expected.

145. Initially, it was thought that 5% of all air activity would be needed in the first days of the war to eliminate all Iraqi ballistic missiles. In fact it took 15% of the coalition's war activity during most of the war, while at short notice an effective warning and defence system had to be set up comprising satellite observation, reconnaissance systems, fighter-bombers and Patriot missiles. The Patriot surface-to-air missile became world-famous overnight in its anti-missile rôle for which it was not originally

designed. Undoubtedly it was a great success, but here as well, the psychological impact may have been more important than the destructive impact on incoming missiles. The ballistic missile threat and possible defence systems will be examined in greater detail in chapter VI of the report.

(vi) *Electronic warfare*

146. Although electronic warfare methods have been used in other war theatres, the Gulf war was the primary larger scale war in which the full range of electronic warfare equipment came into action. As an example, it should be mentioned that at the beginning of the air war, EF-111A Raven electronic warfare aircraft penetrated Iraqi airspace in order to jam ground-based radars and ground control intercept sites, thus opening the way for following waves of coalition strike aircraft. Apart from this rôle, which can be performed up to 100 miles from a target when operating in stand-off mode, the EF-111A can also be used in direct support, in which case it escorts a formation of strike aircraft to protect the entire force.

147. Other electronic warfare aircraft used in the Gulf are the EA-6B Prowler, the EC-130 Compass Call and the RC-135 Rivet Joint.

148. In order to counter Iraqi air defence, all combat aircraft were fitted with radar warning receivers (RWR) – first developed during World War II – and with electronic support measures (ESM), a much more sophisticated development which also can initiate action against radar threat. They were also equipped with chaff, infrared decoy, flare dispensers and radar and infrared jammers.

149. Without wishing to play down performances, it should nevertheless be said that, for electronic warfare, the Gulf war was not a valid test, since Iraq clearly did not use its weapon systems to best avail. It should also be kept in mind that the very size of the allied force makes it difficult to assess the specific contribution of electronic warfare.

(vii) *C³I (command, control, communications and intelligence)*

150. As could have been expected in a theatre of war with very little existing infrastructure and a number of different coalition partners operating – in some cases with equipment identical to that used by Iraqi forces – C³I equipment was of primary importance⁹. Suffice it here to say that the E-3A airborne early warning and control aircraft were extremely useful for all coalition air operations. Furthermore, the Gulf provided an opportunity to test in practice some of

the stand-off surveillance and targeting systems which are under development. These systems are intended to provide military commanders with a continuous picture of all possible targets to be destroyed on battlefield and in rear areas. The United States deployed two E-8A Joint STARS development aircraft and their related ground systems which provided reconnaissance and battlefield management capability.

151. French forces used a simplified version of the Orchidée battlefield surveillance radar, mounted on a Super Puma helicopter and baptised Horizon, to track Iraqi convoys trying to escape when the French troops advanced into Iraq during the ground offensive.

152. The evaluation of the performances of both systems will take some time and no final decision on further development and production has yet been made.

(viii) *Rôle of helicopters*

153. Altogether, the coalition forces in the Gulf deployed approximately 2 300 helicopters which were used for many different rôles such as anti-tank and ground-support but also attack, transport, anti-surface ships and anti-submarine warfare and in special missions.

154. Interestingly, right at the beginning of the air war, commanders preferred to use helicopters rather than fixed-wing aircraft to attack crucial enemy radar sites because they wanted to be sure that the targets attacked had in fact been destroyed.

155. Some thirty specialised Sikorsky Black Hawk helicopters were used in electronic warfare activities. The French army deployed its battlefield surveillance Super Puma helicopter with a reduced version of the Orchidée system, now called Horizon.

156. Among the main problems met by helicopters, frequent reference is made to refuelling, night flying and identification of friendly ground forces.

157. Some incidents have been reported about the use of anti-armour missiles by AH-64 Apache and AH-1/W Super Cobra helicopters. Hellfire missiles, with a theoretical range of 8 km, were fired from a "security distance" for the crews, while the identification systems had an effective range of only 2 to 4 km. Such casual use of missiles led to the destruction of a number of coalition vehicles and to casualties among their crew members.

158. Even the best stopgap measures to prevent such incidents proved to be ineffective at long range. Efforts will have to be made to develop a more reliable system for identification of friendly forces by ground support aviation.

9. An earlier report of this committee (Document 1229) examined C³I in full.

159. The refuelling of helicopters was considered an "Achilles heel" during operation Desert Storm. In a number of operations, attack helicopters were accompanied by larger CH-47D medium-lift helicopters, but these sometimes were too slow and vulnerable. Helicopter operations could be more efficient with faster refuelling helicopters, faster pumps and improved bladder tanks.

160. Night flying also caused problems, especially in the first months of the deployment of coalition forces. Intensified training with night vision goggles helped to improve security, but there is a need to accelerate the development of an obstacle avoidance system.

VI. The ballistic missile threat

161. The Gulf war was the first time western allied forces came face to face with ballistic missiles launched by an adversary. Although their destructive effect was relatively modest, they certainly had a psychological impact, if not on the military then certainly on the public in areas under threat and on public opinion in general. The use of ballistic missiles by the Iraqi forces was no surprise and while precautions had been taken, few experts believed that these missiles would be equipped with chemical or nuclear warheads.

162. The question that remains is whether in a subsequent crisis involving Middle Eastern or North African countries, western allied troops or even western European soil will remain unthreatened or unharmed. Ballistic missile developments in the Middle East and North Africa deserve much closer attention.

163. The Middle East has long been an insecure region. The high proportion of the gross national product (GNP) allocated to military expenditure reflects the state of insecurity (6% to 27.5% of the GNP, compared to an average of 4.5% for the OECD member states). The Middle East is the biggest third world arms market, and will probably remain the most unstable region in the world, despite post Gulf war peace-scenarios. The destabilising high-tech arms race in that region is not expected to come to an end in the near future.

164. One of the most destabilising trends in this arms race has been the proliferation of ballistic missiles. Ballistic missiles (BMs) are unmanned, self-propelled weapon-delivery vehicles, using a surface-to-surface ballistic trajectory. They may or may not fly through outer space, be guided to the target and their range may be between tens and thousands of kilometers.

165. It has been estimated that there are at least twenty third world countries currently pos-

sessing BMs or striving to develop them. Brazil and India, making use of their ballistic missile technology have even developed a full space programme, also focused on the export market.

166. India started its ballistic missile programme as early as in the 1950s and in the 1960s Egypt, with German technical assistance, and Israel followed India's lead. In the 1970s Libya, again with German assistance, South Korea and Taiwan took up ballistic missile development.

167. In the Middle East context, missile proliferation commenced during the early part of the 1980s, catalysed by the start of the Gulf war between Iraq and Iran during which both Iraq and Iran used ballistic missiles against each other's territory, primarily as supreme terror weapons. Since then, other Middle Eastern countries began stockpiling such missiles. Currently ten Middle Eastern countries possess ballistic missiles purchased from abroad: Algeria, Egypt, Iran, Iraq¹⁰, Israel, Kuwait, Libya, Saudi Arabia, Syria and Yemen. Five countries are or have been developing their own independent missile capabilities: Egypt, Iran, Iraq, Libya and Israel.

168. These missiles with their putative chemical and even nuclear accoutrements, worry Israel especially because they upset the military balance which has long favoured them. It is no longer threatened purely by neighbouring states. During the last Gulf war, Iraq showed its ability to reach Israeli territory with ballistic missiles. The Israelis also regard Libya as a potential enemy.

169. Not only the Middle East region is threatened by this missile proliferation. Parts of southern Europe and the Soviet Union are now within reach of some Middle Eastern ballistic missile systems. The day may not be far away when Western Europe capitals can be within range of such missiles from a Middle East base.

170. Most ballistic missile systems in the inventory of Middle Eastern countries are Soviet made. Soviet-made ballistic missiles can be found in Egypt, Iraq, Kuwait (until August 1990), Libya, Syria and Yemen. North Korea has also delivered Soviet-made or developed ballistic missile systems. Only last February, it delivered 24 medium-range Scud C missiles to Syria.

171. The most common Soviet-made ballistic missile systems to be found in the Middle East are the Frog 7, with only a 70 km range and the Scud B, with a 280 km range. With foreign assistance, Iraq has developed longer-range versions of the Scud B. This has resulted in the 650 km range Al Hussein and 900 km range Al

10. Many if not most of Iraqi and Kuwaiti missiles were destroyed by the allied forces during the Gulf war.

Abbas. During the Gulf war some of the missiles launched by Iraq were, according to some sources, in fact Al Husseins. The North Korean Scud C missiles, delivered by North Korea to Syria, are also upgraded Scud Bs and are supposed to have a 500 km range.

172. The United States delivered ballistic missiles to Israel until 1974, from which year further deliveries were prohibited. On the other hand, the Soviet Union continued to deliver such missiles during the 1980s. China delivered ballistic missiles to Saudi Arabia which have a range of between 2 200-3 500 km. Libya and Syria have also been trying to acquire ballistic missiles from China, but recent United States pressure on China prevented these sales. The Soviet approach to ballistic missile sales to the Middle East is also changing, especially since the signing of the INF Treaty. At the moment this leaves only North Korea as the most likely alternative supplier.

173. The Egyptians have been co-operating with North Korea and with Iraq and Argentina to develop their own ballistic missile systems. Iraqi developments have already been mentioned before. Israel has also been developing new systems. The 1 400 km range Jericho II is the latest example of the Israeli missile development. Furthermore, Israel launched two spy satellites, one in 1988 and one in 1990, and is also developing an anti-ballistic missile, called the Arrow, in co-operation with the United States.

174. It is widely believed that Israel has a nuclear weapons programme since the 1960s. It is also generally assumed that from the early 1980s, Iraq has been trying to develop a military nuclear capability, although it is a signatory of the Non-Proliferation Treaty. Only recently it became known that Algeria, with Chinese assistance, is also developing its own military nuclear technology. The CIA has informed the competent committee of the United States Congress that Chinese experts are helping Algeria to develop nuclear warheads to be used on Scud-B missiles (with a 280 km range) which it obtained from the Soviet Union. According to the British intelligence services, Algeria, which is not a signatory of the non-proliferation treaty, could have this nuclear capability operational by 1998¹¹.

175. Iraq, Iran, Syria – and probably Egypt and Libya – possess chemical weapons. Syria and Iraq are also believed to have acquired facilities to develop biological agents. Theoretically, both kinds of weapons can be deployed in missile warheads. It should, however, be noted that for a number of reasons, a chemical weapons payload on a single missile is not capable of covering a large area. The technical know-how to

equip a missile with chemical weapons is also very complicated and this may be a reason why Iraq did not follow up to its threat to launch ballistic missiles with chemical warheads at Israeli territory during the Gulf war.

176. The end of the cold war and the dissolution of the Warsaw Pact has enabled the West to divert its attention to the proliferation of ballistic missiles throughout the developing world. A massive Soviet nuclear missile attack is now thought to be most unlikely although the current unrest in the Soviet Union may have increased the danger of an unauthorised missile launch. Today, the more likely ballistic missile threat towards the developed world could come from the developing world.

177. In order to control or diminish the ballistic missile threat from developing countries, a number of western countries have established a missile technology control régime (MTCR)¹². There are, however, some flaws in the MTCR which make it less than perfect. Firstly, it makes a distinction between military missile and civilian space-launched programmes, secondly, the dual-use area is too vague, i.e. it has been exploited by both buying and selling countries and thirdly it has a too limited membership, not including the most aggressive exporters of missile systems, notably the Soviet Union and, to a lesser extent, China, North Korea, Brazil and Argentina.

178. Other institutional means which could help to diminish the threat are a chemical weapon convention to limit and abolish the proliferation and production of those weapons and an improved non-proliferation treaty, also provided with better verification possibilities. It remains to be seen whether the post Gulf war era offers good opportunities to make progress in this field. Meanwhile, several countries, lacking confidence in early agreement on these issues, have decided to develop anti-ballistic-missile systems. Operations in the Gulf war certainly gave a boost to such programmes.

179. As regards ballistic missiles, the Gulf war at least led to three early conclusions:

- (i) the ballistic missile threat from developing countries is a real one;
- (ii) it is more difficult than anticipated to find and destroy such missiles on enemy territory before they are used;
- (iii) active missile defence actually can work in battle.

180. During the Gulf war, Patriot air defence missiles intended for use against aircraft were

11. Sunday Times, 28th April 1991.

12. Participants in this agreement are now: Australia, Belgium, Canada, Denmark, France, Germany, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Spain, the United Kingdom and the United States.

deployed with their software adapted in order to operate against the Iraqi Scud or Scud derivative ballistic missiles which were launched against Israeli and Saudi Arabian territory.

181. No doubt the Patriot made an important psychological contribution in convincing the population that something could be done against incoming missiles, but it did not completely fulfil its military mission.

182. According to a testimony before the United States House Armed Services Committee, many, if not most Patriot missiles apparently failed to destroy the Scud's explosive warheads or otherwise render the missiles harmless. The Patriots rather diverted the Scuds from one trajectory to another or cut them into large chunks, which were still capable of inflicting casualties or damage upon impact.

183. In the same testimony it was said that a total of 158 missiles, which cost an estimated \$1 million each, were used to engage 47 of the more than 70 Scud missiles launched by Iraqi military forces at Israel and Saudi Arabia. Army officials said 45 of the Scuds were intercepted, and the others that were not engaged were allowed to fall into unpopulated areas or were fired at Israel in the first few days of the air war, before Patriot batteries were sent there¹³.

184. In support of the Patriot, it should be said that it was developed to be a point-defence system, designed to defend a single target rather than an entire area or region. This task was readily met by the deflection or disintegration – not the destruction – of incoming missiles. Moreover, the extended range Scuds mostly fell apart in the last phase of their trajectory towards the target, which made it even more difficult for Patriots to destroy the Scud warheads.

185. In the United States, new initiatives concerning air defences and the ballistic missile threat are now being placed under the strategic defence initiative (SDI) umbrella. The Gulf war has enhanced the importance of these initiatives.

186. The first to be mentioned is the air defence modernisation plan of the American Ministry of Defence, which includes the development of the Corps surface-to-air missile (Corpsam) to be used by the United States army. This missile system will be designed to counter high-speed fighter aircraft and tactical missiles and will replace the medium-range Hawk missile system. Procurement is expected by 1998.

187. The Gulf war has also put a new focus on the strategic defence initiative (SDI). The SDI will now divert more attention to what is called global protection against limited strikes (GPALS). While the SDI was originally estab-

lished to create a space-based missile defence system, now land-based defence systems such as the tactical missile defence initiative (TMDI) will also be developed under its umbrella.

188. TMDI includes the upgrading of the Patriot missile system and the development of three new anti-missile systems. All these systems will be part of the ground-based interceptor system in addition to the space-based interceptor components of SDI. The ground-based interceptor component of SDI is designed to protect larger-than-theatre areas against high-speed long-range ballistic missiles.

189. The three new anti-missile systems are:

- Erint: the extended range interceptor.
- Thaad: the theatre high-altitude defence interceptor.
- Arrow: an anti-missile system being developed by Israel with 80% United States funding.

190. The United States army corps surface-to-air missile project will also get assistance from the SDI organisation.

191. The proposed GPALS architecture will still continue to make use of the revised space-based defence system to be developed, better known as Brilliant Pebbles. The new revised SDI programme, as proposed by the Pentagon, now includes five elements: Phase 1 defence: systems primarily intended to provide low to moderate protection against large-scale ballistic missile attacks (an outer-space defence system or Brilliant Pebbles); limited protection systems: providing protection against limited ballistic missile attacks; theatre and anti-tactical ballistic missile defence (thus including TMDI); follow-on systems: these projects are aimed at providing highly effective defence in the 21st century; research and support activities.

192. It should be mentioned here that the ultimate decision on the development and funding of the SDI is in the hands of the American Congress, known to favour the funding of ground-based interceptor systems over space-based ones. Since the outer-space components of the SDI are also in violation with the 1972 ABM Treaty, some politicians are more likely to focus attention on the ground-based interceptor (GBI) systems. Others advocate separating the TMDI from the SDI because of the technological differences between ground-based and space-based programmes.

193. For the financial year 1991, the SDI will take over the \$218 million appropriated by the Congress for further Patriot improvements and for the Arrow and Erint programmes. In 1992 and 1993, this specific budget is expected to grow to over \$550 million and to be appropriated to TMDI, R&D, testing and evaluation, all under SDI supervision.

¹³ International Herald Tribune, 18th April 1991.

194. The already mentioned Arrow project by Israel is also being speeded up, as a result of Gulf war experience and because of Syria's recent acquisitions of improved Scud missiles from North Korea. The Arrow will intercept incoming missiles at a greater distance and at a higher altitude than the Patriot, avoiding the problem of a rain of destructive missile parts on target areas.

195. In Europe there is also a move towards air defence programmes. Besides new anti-aircraft missiles, studies are now being made on the development of an anti-tactical ballistic missile (ATBM) capability.

196. France and Italy started first in Europe with the development of a future surface-to-air family of missiles (FSAF). Apart from ground-launched missiles, this programme also envisages naval versions. More on this specific programme will be said in Chapter VII.

197. Germany is involved in the American Corpsam project and, together with France and Italy, is studying an ATBM project to be developed in the near future. The German requirement calls for a system with substantial capabilities against tactical missiles, which the other countries have so far not asked for. It is no secret that Italy would also like such a system in the future but it lacks the financial means to develop one. France is still debating whether or not it needs an ATBM system and Britain already made it clear that it has no requirement for an ATBM capability.

198. The best defence against ballistic missiles from the developing world would be to stop proliferation. Nevertheless, as long as the international situation precludes the conclusion of a waterproof agreement on the proliferation and control of military ballistic missile technology, allied nations will have to concentrate on ballistic missile defence systems in order to protect themselves against threat, blackmail or destruction.

VII. Developments in main European collaborative equipment programmes

199. With recent events in mind, it is not devoid of interest to have a closer look at the state of affairs in the major European co-operation programmes dealing with equipment which apparently deserves priority. The decision to mention only collaborative arms programmes was made deliberately because it is thought that this is the only viable way to develop new equipment which is up to the best standards. The multiple reasons for European arms co-operation have been explained so often in recent reports of this committee that there is

no need to repeat them in detail again¹⁴. Suffice it to say here that the well-known arguments in favour of this have recently been strongly reinforced by reductions in national defence budgets and by firm intentions of the allied nations to set up multinational units.

200. At the moment there are still some major national equipment programmes either in the development stage or coming to fruition, such as the French Rafale multirôle combat aircraft and the Leclerc main battle tank or the British Challenger II main battle tank. Nevertheless it is generally assumed that programmes of comparable importance henceforward will be set up on a multinational collaborative basis.

(i) The EFA programme

201. The collaborative programme to develop and build the new European fighter aircraft (EFA) for the air forces of Germany (33%), Italy (21%), Spain (13%) and the United Kingdom (33%) has fallen about one year behind schedule and the first prototype flight is now expected in the spring of 1992. Entry into service is planned in the summer of 1997, but according to some experts this may well be delayed until 1998-99. The four air forces together had an original requirement for 765 aircraft, but with the announced slimming down of armed forces and decline in defence expenditure it is more realistic to put the total requirement at about 550 aircraft. Moreover, the programme is meeting with political opposition, particularly in Germany.

202. In February 1991, the German Government declared that it would implement its obligations for the development phase of the EFA programme which will be finished by the end of 1991. Strong doubts persist, however, with regard to its commitment to the following phases of the programme, including production. While EFA alternatives have already been studied and dismissed by the German defence ministry and the Luftwaffe, the government has now established a special working group of defence and budget experts to study EFA and its alternatives again. The alternatives for EFA are the McDonnell Douglas F-15 and F/A-18, General Dynamics F-16, Dassault Rafale, an upgraded version of the Panavia Tornado IDS and the Mikoyan MiG-29 Fulcrum. The SPD, the largest opposition party, has already declared its opposition to the EFA programme, which it considers too expensive. It also has strong doubts about the requirement for a new fighter aircraft due to the changes in Central Europe and the consequences they should have for the German armed forces.

203. In April 1991, the Luftwaffe announced that it had dropped its total requirement for

14. Assembly Documents 1119, 1141 and 1228.

EFA to 160, as compared to the original requirement of 250 aircraft.

204. The question whether Germany needs a modern air force to defend itself and its interests and, if so, what kind of aircraft would best fit the financial possibilities and military requirements should be answered by politicians. They should, however, also take another aspect into consideration: if Germany does not participate in the production of EFA, the know-how and capability of its high-technology industry to build a sophisticated aircraft "will be placed at great risk for many years to come" (Jürgen Schrempf, chairman of Deutsche Aerospace in Aviation International, 15th March 1991).

205. Until now, the United Kingdom, Italy and Spain, the other partners in EFA's development, have not expressed doubts about their full commitment to the programme.

206. Under budgetary pressure, the United Kingdom might wish to buy less than the initially intended 250 aircraft, but such a decision would not lead to important financial savings because of reduced economies of scale. The British government's attitude leaves little doubt that the programme will be pursued even in the event of a possible German pull-out. It maintains that the United Kingdom needs an air superiority fighter to provide air cover for friendly troops and to escort friendly attack aircraft, especially with recent Gulf war experiences in mind and in the event of a likely shift of emphasis from offensive to defensive counter-air rôles. The multirôle capability of EFA is also considered a benefit, because this will make it easier to standardise on fewer aircraft types and provide flexibility to tailor the air capability to fit different types of mission.

207. Italy, with a 21% stake in the programme, has certainly the most urgent requirement for EFA, considering the large number of aged F-104s still in its inventory. Moreover, if the threat to its security from Eastern Europe has greatly diminished, it has increased on its southern flank.

208. Similarly, the Spanish Government, which has always considered the threat from Eastern Europe to be exaggerated, sees a growing threat from the potentially unstable situation in North Africa. Notwithstanding a modernisation programme including the acquisition of EF-18 Hornets, a large part of its air force is still equipped with outdated aircraft. Spain considers its participation in the EFA programme vital both for the capability of its air force to perform its rôles and for the development of its aerospace industry which is relatively weak in sophisticated aircraft design and equipment.

209. At the moment, the prevailing opinion among partners in the programme is that buying a United States alternative which exists or is still

under development (ATF) would either not meet requirements or, in the case of the ATF at an estimated price of \$73 million each, be too expensive. On top of that, and possibly more important, it would undermine a number of national aerospace industries and damage European technological competitiveness.

(ii) *The Franco-German anti-tank/combat support helicopter Tiger*

210. After many years of trouble and reciprocal questioning, the Franco-German Tiger helicopter programme is now well under way. In early February 1991, the first of five prototypes was unveiled in Munich and flight testing started at Marignane in April. The MTR 390 engines, a collaborative programme of MTU, Turbomeca and Rolls-Royce, have already passed through an earlier test programme on an Aerospatiale Dauphin helicopter.

211. France is still expected to order a total of 215 helicopters in the combat support and anti-tank version while Germany will procure 212 helicopters in the anti-tank version. Since the other European anti-tank helicopter programme, Tonal, collapsed, Spain has expressed its interest in 50 multirôle Tigers. The United Kingdom, also a former Tonal participant is going to study the Tiger as a possible alternative for its anti-tank helicopter requirement which might concern more than 100 helicopters.

(iii) *EH-101 helicopter*

212. After a two-year delay in the British-Italian collaborative programme for a 15 ton helicopter in a naval, transport and civilian version between Westland and Agusta, the EH-101 is now well under way and seven of the nine pre-production helicopters have now made a total of 500 flight hours together. The development of a naval version for the British and Italian navy has priority.

213. The Royal Navy is expected to place its first production order of 50 EH 101 Merlins shortly. The size of a second tranche of navy orders, originally planned to involve 24 helicopters, is under review.

(iv) *NH-90 tactical transport helicopter*

214. In December 1990 and January 1991, the four nations participating in the NH-90 programme, France (Aérospatiale), Germany (MBB), Italy (Agusta) and the Netherlands (Fokker) signed an agreement to develop the helicopter. There will be one naval version, the NFH-90 and one tactical transport version, the TTH-90. The financial participation in the development phase is distributed as follows: France 43.35%, Germany 23.65%, Italy 26.43% and the Netherlands 6.57%. The first of five prototypes should make its first flight at the end of

1994 and, if the production contract is signed in 1995, the first production helicopters should be delivered in 1998. The four partners have a total initial requirement of 720 helicopters and the industry is expecting to sell between 350 and 500 helicopters on the military export market.

(v) *Future large aircraft (FLA)*

215. With armed forces becoming smaller, but more flexible and mobile, there is an urgent need for increased air transport capacity, as has already clearly been demonstrated in the Gulf war.

216. At an earlier stage, there have been unsuccessful attempts to establish an international collaborative programme called FIMA.

217. It seems however that a number of European countries have now reached informal agreement on an outline European staff target on a future large aircraft (FLA) in the framework of the IEPG (Independent European Programme Group). The FLA should be the European successor to the existing fleet of C-130 Hercules and C-160 Transall aircraft. At the moment, Belgium, France, Germany, Italy, Spain, and Turkey are involved in the co-operative effort, while the United Kingdom has observer status.

218. It is expected that funding will be awarded to Euroflag, a consortium of Alenia, Aerospatiale, British Aerospace, Casa and Deutsche Airbus.

219. European studies are focused on a four-engine aircraft of 100 tons take-off weight with a 20 to 25% ton transport capacity, a 4m wide fuselage and the ability to take off and land on rugged landing strips.

220. The United States has a similar programme, called ATT (advanced theatre transport) to develop a successor to the C-130 Hercules. Initial talks have been held to examine possibilities for a new Euro-American programme.

(vi) *NATO frigate for the 1990s (NFR-90)*

221. As is well known, the eight-nation programme to develop the NFR-90 collapsed at the end of 1989. Participating countries were Canada, France, Germany, Italy, the Netherlands, Spain, the United Kingdom and the United States, with a total requirement of 59 frigates. The development of a common weapon system and a common combat system have proved to be particularly difficult stumbling-blocks.

222. Recent developments have demonstrated that a likely diminishing threat from Soviet naval operations does not mean that the requirement for new frigates has suddenly disappeared. In the Gulf war, a serious air threat for

naval formations existed and it will not be long before third world countries will be able to pose a submarine capability.

223. In early March 1991, the navies of France and the United Kingdom signed a joint statement of need for a common Anglo-French frigate, planned to enter service early in the next decade. They are aiming to achieve a joint staff requirement by the end of 1992. There is a French requirement for probably six anti-air warfare (AAW) frigates while the British need a replacement for their twelve Type 42 AAW destroyers, but a number has not yet been given. The most important common feature will be the combat management system; minor elements may vary according to individual preferences.

224. In December 1989, Germany and the Netherlands signed an agreement to co-operate on the development of ships and the design of associated weapons, communications and command systems with an initial priority for frigates. Nothing further about this co-operation has been heard since, and the recent Dutch defence white paper makes no mention of it.

225. Other countries formerly participating in the NFR-90 project have not yet clarified their position as regards a new collaborative frigate programme.

(vii) *Anti-air warfare system*

226. In February 1991, France, Italy, Spain and the United Kingdom signed a memorandum of understanding for the two-year project definition phase of the local area missile system (LAMS), a medium-range area defence system for defence against aircraft which should be the main anti-air warfare system for at least the future British, French and Spanish frigates.

227. Industries involved are Eurosam, a joint venture between Aerospatiale, Thomson CSF and Alenia, a British industrial team led by GEC-Marconi and the Spanish Ibermissile.

228. In fact, LAMS should be considered as the first branch of an entire Franco-Italian family of anti-air missile systems (FAAMS) which should eventually comprise three major systems:

(a) *surface-air-antimissile*: a naval point-defence system, with Aster 15 missile and Thomson-CSF Arabel radar for the French navy and Selenia Empar radar for the Italian navy;

(b) *medium-range naval surface-air*: medium-range area defence system, using the extended-range Aster 30 missile for defence against aircraft, and Thomson-CSF Astral surveillance radar. This version could also be adapted to meet the British and

Spanish requirement for a local area missile system, the abovementioned LAMS.

- (c) *medium-range ground-air*: a ground-based version of the above, using the Thomson-CSF Arabel radar and intended to replace the Raytheon Hawk.

229. At the end of 1990, Germany had proposed to develop the last of the three missiles mentioned into a system with an anti-tactical ballistic missile capability. France and Italy are now considering this proposal.

230. NAAWS (NATO anti-air warfare system) is a parallel and competing programme for a local area ship defence against highly manoeuvrable missiles with low radar cross sections. There can be little hope for it to remain alive as the United States withdrew in February 1991, leaving Canada and the Netherlands as the only remaining participants.

(viii) *Modular stand-off weapon (MSOW)*

231. In the 1980s it was thought that the NATO allied force should have a long-range stand-off attack capability which would enable it to destroy Warsaw Pact targets while protecting delivery aircraft from enemy air defence systems.

232. Different initiatives were then combined into the modular stand-off weapon (MSOW) programme, intended to meet the stand-off weapon needs of Canada, France, West Germany, Italy, Spain, the United Kingdom and the United States.

233. The idea was to develop one medium-range weapon against mobile targets (15-30 km), one against fixed sites (30-50 km) and one long-range weapon against fixed and mobile targets.

234. Notwithstanding the initial enthusiasm of many participants, it appeared at an early stage that too many obstacles stood in the way, and after the withdrawal of France and Canada in 1988 and the subsequent withdrawal of the United States and the United Kingdom, the programme was cancelled in June 1989.

235. At the moment, France is the only European country with a full stand-off weapon programme. The Apache, now a stand-off missile with a 150 km range and a payload of up to 770 kg, is in its development phase. It is expected to come into service around 1995.

236. All United Kingdom programmes in this field, such as the RAF stand-off anti-armour weapon and the low-level laser-guided bomb, have been abandoned.

(ix) *Autonomous precision-guided munition (APGM)*

237. The APGM programme sought to develop smart anti-armour munition by increasing both the range and accuracy of 155mm artillery projectiles. Initially, France, the Federal Republic of Germany, Italy, the Netherlands, Spain, Turkey, the United Kingdom and the United States were involved. After the withdrawal of the United States because of problems of technology transfer and reductions in defence spending the programme lost its impetus. In July 1989, the remaining participants agreed that they could not afford to continue the programme.

(x) *Advanced short range air-to-air missile (ASRAAM)*

238. According to a long-standing memorandum of understanding concerning a new family of weapons, the United States was to develop and build the advanced medium range air-to-air missile (AMRAAM), while a number of European nations would design and build ASRAAM.

239. At the moment, AMRAAM is entering service with the United States Air Force, while ASRAAM is not even at the development stage. Since July 1989, Canada, the Federal Republic of Germany and Norway have pulled out, leaving the United Kingdom (British Aerospace) as the only remaining European partner.

240. Matra-Marconi has now proposed its MICASRAAM as an alternative for further development to the British Aerospace ASRAAM proposal. The French-British firm has said that the MICASRAAM could be available in 1995.

VIII. *New equipment requirements*

241. In order to make sure that European armed forces will be able to meet the obligations devolving from their new tasks, a close examination should be made of equipment requirements. Are existing requirements still valid? Should they be changed completely or will slight modifications be sufficient?

242. It should be well understood that this report intends only to indicate likely trends and their consequences. At the same time an effort is being made to see if this framework offers specific opportunities for WEU to contribute to an improved capability in maintaining peace and security.

243. In Chapter III the basic principles for the future allied force structures were explained. There will be smaller forces and part of them will have a lower degree of readiness. Flexibility and mobility are considered essential. Reinforcement through reserve forces will be more

important and major formations will be multi-national.

244. As a consequence of these new force structures, new equipment requirements will most probably focus on improved performance and capabilities in:

- out-of-area operations;
- mobility within the whole territory of the European allies;
- command, control and communications;
- detection and verification equipment.

245. Moreover, with much of the older equipment being phased out as a consequence of the CFE agreement and smaller quantities remaining, the upgrading of existing equipment will receive more attention.

246. Even if the use of sophisticated high technology equipment in the Gulf war as mentioned in Chapter V may have appeared revolutionary to the general public – influenced by a slightly coloured media coverage – most of it was either developed in the 1970s or based on 1970s technology. Full-scale development of the F-117A Stealth aircraft, for instance, started in 1978 and the aircraft made its first flight in June 1981 and entered service in 1983, while precision-guided bombs were already used in the Vietnam war. Important present-day equipment development programmes are almost all aiming at further improvement of equipment which has proved its usefulness in the Gulf war.

247. Two areas where the Europeans had given up their collaborative efforts, the modular stand-off weapon (MSOW) and autonomous precision-guided munition (APGM) may have to be reconsidered in the light of recent war experience.

248. As said earlier, stand-off capability diminishes the risks for delivering aircraft, while precision guidance, be it through an autonomous or a remotely-operated system, incomparably enhances the probability of hitting the target. Originally, the APGM was meant to enhance the effectiveness of artillery against concentrations of Warsaw Pact armoured vehicles in the Central European theatre. Under present circumstances, the need for APGM may be less pressing, but part of this technology, combined with MSOW technology could be used in a new collaborative European programme. Precision-guided bombs and smart stand-off weapons can play a decisive rôle in destroying high priority targets. They may save human lives and prevent pointless destruction. In the alliance, only the United States and France have determined new programmes in this area. Can the rest of Europe afford to remain on the sideline or has it definitely thrown in the sponge?

249. In the framework of NATO, several long-term programmes exist to improve and extend the C³ capabilities of the allied countries, as has been explained in an earlier report of this committee¹⁵. These programmes deserve full attention, also because they enhance the effectiveness of smaller forces.

250. Another area where serious deficiencies are coming to light is airlift capability. In Chapter V, some examples are given of the alarming lack of air transport capacity in some of the allied countries participating in the Gulf war effort. Six European countries are now involved in the early phase of a future large aircraft (FLA) programme in order to develop a replacement for the C-130 Hercules, C-160 Transall and the G-222. Apart from that, newly-perceived security risks and accordingly-adapted force structures also call for long-haul strategic air transport, a capacity which understandably, until now, has been rather neglected in European armed forces.

251. Of all European armed forces, only France and the United Kingdom have a strategic airlift capability. As for France, it now has four DC-8Fs, aged between 25 and 30 years, of which two will be phased out shortly, while the other two, with a bit of luck, will remain in service until the end of the decade. The United Kingdom has one squadron of VC-10 Mk-1s which also may need early replacement around the turn of the century.

252. For a proper strategic airlift capability, a number of European countries would need aircraft of the size of the C-17A, now under development in the United States. There is no question, however, of buying this aircraft because of its unit cost of more than \$200 million. Recently, suggestions were made for a European solution.

253. In April last, the French and German armed forces made it known that they are examining the possibilities for the development and procurement of military versions of the Airbus A-340 long-distance carrier for transporting troops and heavy loads and the in-flight refuelling of combat aircraft.

254. More specifically under study is the A-340-300 version with a 9 000 km range. The different military versions could be:

- A-340 M, carrying 295 passengers and 20 tons of freight or 434 passengers with 2 refuelling pods under its wings for in-flight refuelling;
- A-340 M cargo for heavy loads, such as battle-tanks, likewise provided with two refuelling pods;

15. Developments in command, control, communications and intelligence (C³I), by Mr. Hill, Rapporteur, Document 1229, adopted by the Assembly in June 1990.

- A-340 M tanker with a capacity of 128 tons of fuel and three refuelling pods.

255. Apparently there is still much uncertainty about the cost of this military Airbus, but the unit cost of an A-340 M is estimated to be between \$120 and 150 million.

256. If early decisions to go ahead with such a programme are taken, the first military A-340s could enter into service by the mid-1990s.

257. Suggestions have been made that in view of the considerable cost of a reasonably-sized strategic airlift capability, European countries should make it a joint effort. Following the example of NATO's AWACS fleet, Western European Union could be the organisation to create a strategic airlift command at the disposal of its member states' armed forces. This subject could be discussed in a following meeting of the chiefs of defence staff of the WEU member states, who met several times during the Gulf crisis and lastly on 10th April for an informal exchange of views on the development of European military co-operation, particularly in the light of lessons learned from the Iraqi conflict. Recent examples such as Western Europe's naval presence in the Gulf war and the humanitarian aid to Kurdish refugees have shown that WEU can play a positive rôle in a practical sense too, reinforcing an allied effort and enabling its member states to stand shoulder to shoulder with their United States ally if circumstances require action and not merely words.

258. One long-standing pet subject of the Assembly certainly obtained additional interest through the Gulf war: a European observation satellite agency. Chapter V included reference to the rôle of observation satellites. It is no use repeating the arguments which the Assembly has put forward in three different reports and recommendations¹⁶. They are well known, recognised by the Council and now reinforced by recent events in the Gulf.

259. In the Council's reply to Recommendation 482, it reported that, at the meeting of the WEU Council of Ministers on 10th December 1990:

"Ministers asked the experts to study further the practical arrangements for setting up a satellite data interpretation centre so that they could reach a decision at their Council meeting in spring 1991. The Sub-Group on Space was also mandated to submit to that meeting its conclusions on the needs for studies on medium- and long-term space co-operation."

260. It is hoped that at their spring 1991 meeting, to be held in June 1991, the Ministers will take a firm decision, thus setting the pace in order to meet an urgent requirement of Western European Union's member states.

¹⁶. Documents 1159, 1160 and 1230; Recommendations 465, 466 and 482.

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