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### Getting there: building strategic mobility into ESDP

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*The commitment to create a credible military capability for Europe lies at the heart of European Security and Defence Policy (ESDP). A credible defence capability does not depend exclusively on sound armed forces but also on swift projection of these forces into theatres of operations. A European Rapid Reaction Force will be expected to be capable of intervening in any area where European interests are affected and to intervene rapidly enough to conduct effective crisis management.*

*Given that the most likely future military engagements for European nations will be outside Europe's borders — due to the absence of a credible strategic threat within Europe — European nations need a broad range of air- and sealift capabilities in order to reach areas of crisis. Current strategic lift capability is not sufficient and not always suited to these potentially global commitments. In fact, strategic lift has been identified on several occasions as an area of deficiency for the fledgling European security and defence capability. To date, Europeans have been dependent on purchased or leased foreign equipment — mostly American, Russian and Ukrainian — particularly for large or outsize loads, since European strategic transport capabilities are often insufficient, obsolete, unproductive, too light or unavailable when needed.*

*In order to ensure the ability of the EU to conduct the full range of missions to which it has committed itself, EU nations must take action to bridge the gaps in critical lift capabilities. Recently, European decision-makers have recognised these gaps and taken some steps to remedy them: eight European nations are planning to build a joint medium-lift transport aircraft, the A400M; France, Italy and the United Kingdom are considering purchasing or leasing heavy-lift American aircraft; the United Kingdom is building six roll-on roll-off ferries to add to its sealift capability. If these undertakings materialise, the next several years will see enhancements to European airlift and sealift capabilities. Nevertheless, existing and planned lift assets do not adequately satisfy the full range of lift requirements implied by the nature and scope of Europe's potential missions.*

*Several options are available to EU nations. In the short term, in addition to existing programmes, they can cover the shortfalls in their lift capabilities by continuing to use a combination of conventional options. These include leasing and off-the-shelf procurement of foreign military lift assets, as well as short-term leasing, chartering and requisitioning of (mostly) commercial lift assets.*

*In the long term, however, European nations need to significantly improve their own airlift and sealift capabilities and build additional ones. The most affordable long-term solution to European lift deficiencies is one that involves the pooling and integration of national resources. This would allow for more efficient use of limited funds and more effective use of limited capability. A multinational mobility centre, such as a proposed European Transport Command, could manage this European pool of lift assets and coordinate all European transport needs as well as the acquisition of additional lift capability.*

## Introduction: objectives, scope, background

### 1.1 Objectives

Developing a common European security and defence policy and creating a European defence capability to underpin it are major issues in the current European debate which have gained additional significance in the aftermath of the 11 September terrorist attacks on the United States. It is now frequently seen to be more critical for Europe – the European Union (EU) in particular – to have a strong defence capability of its own, while being a reliable partner and ally of the United States in the global war against terrorism. Underlying this need for Europe to develop a strong military dimension are two key drivers.

The first driver is a treaty-based commitment of the EU to engage in crisis management activities within the scope of the Petersberg tasks.<sup>1</sup> At the Franco-British summit in St-Malo,<sup>2</sup> France and the United Kingdom made a commitment to develop ‘the capacity for autonomous action backed up by credible military forces, the means to decide to use them and the readiness to do so ...’<sup>3</sup> At Helsinki, the European Council underlined its ‘determination to develop an autonomous capacity to take decisions, and where NATO as a whole is not engaged, to launch and

conduct EU-led military operations in response to international crises.’<sup>4</sup>

A second important factor driving the need for a strong European military capability is the emerging security environment, where European nations are increasingly becoming militarily involved in progressively more demanding operations beyond Europe’s immediate borders. Complementing this second driver is the fact that, following 11 September, the United States is likely to focus less on European security concerns (in areas such as the Balkans) and more on other priorities.<sup>5</sup> As a result, Europeans will have to shoulder a larger share of the security burden by taking greater military responsibilities for managing future crises in and around Europe itself. The development of European/EU military capabilities assumes renewed urgency.<sup>6</sup>

The commitment to create a credible military capability for Europe lies at the heart of the European Security and Defence Policy (ESDP). According to the Göteborg European Council Presidency Report on the European Security and Defence Policy,<sup>7</sup> ‘The European Union is committed to developing and refining its capabilities, structures and procedures in order to improve its ability to undertake the full range of

<sup>1</sup> ‘Humanitarian and rescue tasks, peacekeeping tasks and tasks of combat forces in crisis management, including peacemaking’ – these are the ‘Petersberg tasks’ as agreed by the Western European Union (WEU) in 1992, and subsequently incorporated by the EU into the Treaty on European Union (TEU) concluded in Amsterdam in 1997 (Article 17(2)).

<sup>2</sup> Franco-British summit: Joint Declaration, St-Malo, 4 December 1998.

<sup>3</sup> The meaning of autonomy is sometimes controversial: while some would argue that an EU operation is autonomous only when NATO is not involved at all, others would maintain that as long as the EU has political and operational control at all levels of an operation, the latter can be considered autonomous, even if NATO assets and capabilities are used.

<sup>4</sup> European Council, *Presidency Conclusions*, Helsinki, 10-11 December 1999.

<sup>5</sup> All major trends after the terrorist attacks of 11 September point to an inevitable increase in the Europeans’ share of the burden of dealing with the Balkans, as the strategic priorities of the United States shift to other areas and issues such as terrorism and proliferation (Nicole Gnesotto, ‘Risks of the status quo’, Editorial, European Union Institute for Security Studies *Newsletter*, no. 2, May 2002).

<sup>6</sup> Centre for Defence Studies King’s College London, *Achieving the Helsinki Headline Goals*, Discussion Paper, November 2001, p. 4.

<sup>7</sup> *Presidency Report on the European Security and Defence Policy*, European Council, Göteborg, 15-16 June 2001.

conflict prevention and crisis management tasks...’ The fact that the EU has chosen to give priority to rapid response over other considerations can be induced by the inclusion of the time constraint as a main parameter of the Helsinki headline goal (HHG):<sup>8</sup> the readiness requirement for the deployment of the European Rapid Reaction Force (ERRF) is 60 days. Moreover, some of the operational scenarios in which EU involvement is envisaged require per se a higher degree of readiness.<sup>9</sup> An example of such a scenario is the provision of humanitarian assistance in the event of natural disasters, which are unpredictable and require immediate action.<sup>10</sup>

By building a credible expeditionary force, the EU should be better prepared both to contribute significantly to joint operations with its partners, where common interests are at stake, and to act autonomously in defence of its own interests in other cases. A credible military force does not depend exclusively on possessing sound armed forces. Being able swiftly to *project* these forces into a near or distant theatre of operations is as critical. Given that the ERRF will be expected to operate as an expeditionary force, it should be capable of intervening in any crisis that could occur in an area where European interests are affected, and to intervene rapidly enough to prevent an emerging crisis from becoming a full-blown one. Areas where European

interests could be at stake are not limited geographically. Therefore, the multifaceted and geographically unlimited nature of future challenges requires a EU defence capability that is flexible, responsive and deployable.<sup>11</sup>

Experience from recent European military involvement in dealing with crises both on Europe’s periphery (for example, in Kosovo) and beyond (such as in Afghanistan) has demonstrated the need for Europe<sup>12</sup> to have a solid strategic transport<sup>13</sup> capability so that it can project troops and equipment rapidly over long distances and be in a position to intervene effectively in crisis zones and conduct peace support operations.<sup>14</sup> Given that the most likely future military engagements for European nations will be outside Europe’s borders — since there is no credible strategic threat *within* Europe — European nations will need a strong strategic air- and sealift capability in order to get to these out-of-area crisis points.

One of the ESDP’s key mandates is to improve European military capabilities, or build additional ones where needed.<sup>15</sup> Strategic lift is one of the areas where such action is needed. The broad objective of this paper is to explore policy options for building a strategic lift capability into a European defence entity that is both autonomous and interoperable with its US allies, taking into account the constraints of the

<sup>8</sup> The Helsinki headline goal stipulates the need for a capability to project 60,000 troops and their equipment within 60 days, and sustain them for a period of at least one year.

<sup>9</sup> The framework in which the EU has decided to conduct military operations is that of the full range of Petersberg tasks. For the purpose of force development the following three scenarios have been considered: (a) humanitarian assistance to civilians in the event of natural disasters; (b) preventive deployment of forces for peacekeeping; and (c) separation of warring parties by force.

<sup>10</sup> ‘What Kinds of Operational Needs for Which Purposes?’, speech by Admiral Moreno Barberá, Chief of the Defence Staff, Spain, Chairman of the European Union Headline Goal Task Force, presented at ‘Equipping Our Forces for Europe’s Security and Defence – Priorities and Shortcomings’, Assembly of WEU, Technological and Aerospace Committee Colloquy, Madrid, 5-6 March 2002.

<sup>11</sup> Deployability encompasses two elements: readiness and strategic mobility. Readiness refers to the time when, following a decision on the forces required, a unit can be made ready to perform its assigned tasks — but does not include transit time to the area of operations. Strategic mobility refers to transit time or the ability to relocate one’s forces and equipment to a desired area of operations. Both elements are critical in terms of their impact on deployability targets — it is no use having forces at very high readiness if one cannot move them into theatre (Source: Rachel Anne Lutz, *Military Capabilities for a European Defence* (Copenhagen: Danish Institute of International Affairs, 2001), p. 35.

<sup>12</sup> The definition of ‘Europe’ for the purposes of this paper is given in the following section on ‘scope’.

<sup>13</sup> In this paper, the terms ‘strategic transport’ and ‘strategic lift’ are used interchangeably to denote the capabilities — airlift and sealift — used to move forces and equipment to a theatre of operations.

<sup>14</sup> As determined in the Treaty of Amsterdam (see reference above).

<sup>15</sup> The development of a EU military crisis management capacity is to be seen as an activity within the framework of a Common Foreign and Security Policy (CFSP) — Title V of the TEU — and as a part of the progressive framing of a common defence policy in accordance with Article 17 of the TEU.

resources that member nations are projected to commit. Specifically, this paper aims at:

- ▶ determining the capabilities *required* by EU nations in the field of strategic transport, based on a range of perceptions of Europe's role in the new security environment and associated potential missions;
- ▶ identifying the gap between these required strategic transport capabilities and those currently *available* (individually or jointly) to EU nations; and
- ▶ examining policy options for bridging that gap, that is for improving or building an EU strategic transport capability.

Two key assumptions underlie the exploration of policy options for achieving a European strategic transport capability. First, European defence budgets are not projected to increase enough to allow EU nations to make major improvements in strategic lift capabilities. Second, national approaches to obtaining significant military capabilities are no longer sufficient – mainly due to the lack of scale (implying lack of specialisation); joint, integrative approaches could produce significant savings (and therefore increase affordability) through economies of scale and learning, reduced duplication and lower transaction costs. Several policy options for improving current and future capabilities are conceivable. Some are already part of the status quo, such as national or multinational procurement (production, off-the-shelf purchase, leasing), while others are less conventional, including pooling and integration of assets, capabilities and resources; role specialisation; and public-private partnerships. No single option is optimal for improving European strategic lift capabilities but a combination of these options could produce significant cost savings, allowing EU countries to obtain the needed capabilities and develop a coherent, robust strategy for building an independent European defence capability.

## 1.2 Scope

### 1.2.1 Defining capabilities

Before embarking on an analysis of European strategic transport capabilities, certain concepts need clarification. To start with, the concept of a European defence capability has three dimensions: first, core capabilities, or capabilities that European nations wish to possess irrespective of specific missions; second, capabilities required to be able to operate alongside the United States (within the context of NATO); and third, capabilities needed to fulfil missions and conduct operations autonomously when the United States is not involved. According to the declaration by the European Council in Göteborg, the EU is determined to develop an autonomous capacity to take decisions and, where NATO as a whole is not engaged, to launch and conduct EU-led military operations in response to international crises.<sup>16</sup> Therefore, all three dimensions of capabilities are critical for a European defence force that is deployable, effective in combat, interoperable (within Europe and with allies), flexible and sustainable.

Another important distinction is between force-led and mission-led capabilities. Force-led capabilities are defined by member states' contributions, derived from what is available and possible for individual nations; mission-led capabilities are derived from specific mission requirements. So far, ESDP has mainly dealt with force-led capabilities, since those committed to the headline goal are a pool of units and capabilities that member states are in principle willing to engage in EU-led operations.<sup>17</sup> If one only examines force-led capabilities, there should not be a gap between required and available ones: the latter determine the former. Focusing on mission-led capabilities, however, reveals the extent of the disparity between Europe's ambitions in terms of its global security role and the reality of its available assets.

<sup>16</sup> *Presidency Report on the European Security and Defence Policy*, European Council Göteborg, 15-16 June 2001.

<sup>17</sup> These units and capabilities do not constitute a standing force and their employment would require a case-by-case commitment by each member state.



## 1.2.2 Geographic scope

The analysis in this paper will concentrate on the policies of the 15 EU member states. While the largest European players – namely the France, Germany, Italy and the United Kingdom<sup>18</sup> – possess the most sizeable military capabilities, including strategic transport, some smaller European countries can also make non-negligible contributions. In addition, non-European NATO countries or candidates for EU accession could also contribute some strategic lift capabilities. Therefore, it would be reasonable to talk about European strategic lift in terms of the ‘EU-15-plus’. Although this paper will not address specifically the potential role that could be played in strategic lift by non-EU countries, an overview of their relevant assets and capabilities is provided at Annexe a1.

## 1.2.3 Defining strategic mobility

Strategic mobility is more than mere force projection; it is a wider and more complicated concept, defined as ‘the capability to deploy and sustain military forces worldwide in support of national strategy; specifically, the capability of a force to move readily in advance of engagement with a hostile force.’<sup>19</sup> Strategic mobility is ‘the capability to move forces and their associated logistic support in a timely and effective manner over continental or intercontinental distances.’<sup>20</sup> ‘This transport can take place between theatres (inter-theatre), between regions (inter-regional), or beyond the EU area of responsibility.’<sup>21</sup> Tactical mobility is distinct from strate-

gic mobility in that the latter refers to long-haul or inter-theatre transport,<sup>22</sup> while the former concerns mostly shorter-distance or in-theatre capability.

Furthermore, force projection occurs in different phases, which implies different types of strategic lift capability. For example, an initial, ‘immediate response’ capability is needed to deploy forces at high states of readiness, while a less immediate, ‘rapid response’ lift capability is required for forces held at lower states of readiness. The immediate lift capability is needed for the first batch of forces to be deployed to a crisis area – for example, within the first seven days of the standard ‘rapid deployment’ time line – while the second and third tranches can be transported by a rapid response lift capability.

Strategic mobility does not only refer to the ability to field forces and equipment quickly wherever they are needed but also to the ability to *sustain* such troops and equipment over distance and time.<sup>23</sup> According to the Helsinki headline goal, European forces should be self-sustaining with the necessary command, control and intelligence capabilities, logistics, other combat support services and additionally, as appropriate, air and naval elements. Not only should member states be able to deploy in full at this level in 60 days but they should also be able to provide within this smaller, rapid response elements available and deployable at very high readiness. In addition, the sustainability requirement for the ERRF of one year implies the need for an additional pool of deployable units and supporting units at lower readiness to provide replacement for the initially deployed forces. In functional terms, sustainability

<sup>18</sup> These four countries, representing more than two-thirds of European NATO spending (72 per cent of European NATO defence budgets in 2000), are the most significant players in developing a common European defence policy and military capability.

<sup>19</sup> Academic Press Dictionary of Science and Technology, Harcourt, <http://www.harcourt.com/dictionary/def/9/8/9/1/9891300.html>

<sup>20</sup> NATO Military Committee Paper no. 319.

<sup>21</sup> Assembly of Western European Union (WEU), The Interim European Security and Defence Assembly. *European Strategic Lift Capabilities – Reply to the Annual Report of the Council*, Report submitted on behalf of the Defence Committee by Mr Wilkinson, Rapporteur, Document A/1757, Paris, Assembly of WEU, 5 December 2001, p. 4.

<sup>22</sup> Both long-haul and inter-theatre elements are important in distinguishing strategic from tactical lift: for example, in a EU operation in South-Eastern Europe, the distance over which forces and equipment need to be deployed is not very significant, thus requiring only tactical aircraft, but this transport is still considered a strategic operation, since forces are being moved *into* an area of operations, rather than *within* such an area.

<sup>23</sup> Sustainability refers to the ability of a force to maintain a necessary level of combat power for the duration required to achieve its objectives (NATO Allied Publication 6/NATO Military Committee Paper 319).

involves the provision of those materials and consumables (ammunition, spare parts, fuel, food, medicine, etc.) necessary to support a military effort in theatre for the anticipated intensity and duration of the operation. For example, provisions must be made for rotating units and their associated logistics as well as for wear and tear and the need for additional resources.<sup>24</sup> Strategic mobility therefore presupposes a capability for a coherent, timely and effective deployment of troops and logistic support, and, when the time comes, for bringing them back.<sup>25</sup>

Strategic mobility<sup>26</sup> is satisfied by a combination of three transport elements: land, naval and air. The two categories of transport assets that are particularly appropriate for this mobility requirement are air- and sealfight, although one should not neglect to mention that strategic mobility encompasses a broader range of capabilities than just these two. It includes, among others, amphibious capabilities, overland transport and support assets such as air-to-air refuelling.<sup>27</sup> For instance, rail transport is particularly capable of transporting large numbers of personnel, heavy equipment and cargo over distances.<sup>28</sup> High-speed rail systems are brader and stronger than traditional railways, and with specially designed wagons the possibility of rapid transit even of armoured formations should not be discounted, particularly as the Trans-European Network develops. Europe's developing high-speed rail network could be used to move European forces rapidly in support of peace support operations either to an area (such as the Adriatic coast of Italy) adjacent to a theatre or to a port (British forces from southern England to Marseilles, for example). Despite their poten-

tially important contribution to strategic lift, however, overland means cannot compare with air in terms of speed, or with sealfight in terms of capacity. Land transport is generally used in-theatre rather than for long distances. In addition to taking a very long time, land transport is restricted to using civilian roads and railways, and thus offers less flexibility.<sup>29</sup> The military operations in which Europe has taken part in recent years have made almost exclusive use of air- and sealfight. As a result, this paper will focus on these two primary aspects of strategic mobility.

#### 1.2.4 Why focus on strategic mobility?

Strategic lift has been identified on several occasions as an area of deficiency for the fledgling European security and defence capability. NATO's Defence Capabilities Initiative (DCI) launched at its April 1999 Washington summit listed 58 deficiencies in European military capabilities, including strategic transport.<sup>30</sup> In November 1999, the Western European Union (WEU) produced an Audit of Capabilities necessary to conduct the full range of Petersberg tasks, which made similar observations. The Audit suggested that 'capabilities for projecting forces to theatres of operations, even distant ones, should be improved. For military operations at the higher end of the Petersberg task spectrum, military air and sea transport assets and capabilities should be considerably reinforced . . . Even for cases where recourse to civilian assets may be inevitable, the capability for strategic projection within short time-frames

<sup>24</sup> Replacement and rotation considerations apply to lift assets, similarly to other support assets.

<sup>25</sup> Assembly of WEU, The Interim European Security and Defence Assembly, *European Capabilities in the Field of Strategic Mobility*, Report submitted on behalf of the Technological and Aerospace Committee by Mr López Henares, Rapporteur, Document A/1644, Paris: Assembly of the WEU, 18 May 1999.

<sup>26</sup> Focusing on the transport – rather than sustainability – dimension of strategic mobility.

<sup>27</sup> Air-to-air refuelling increases the deployability of national forces by extending the range of aircraft.

<sup>28</sup> Feeder and follow-on road transport support is needed in most cases.

<sup>29</sup> Lutz, op. cit., p. 73.

<sup>30</sup> The objective of the DCI is to ensure that NATO can effectively and cooperatively meet the full range of current and future operational requirements – from humanitarian assistance through to an armed attack against an Alliance member. The DCI initiatives address shortfalls identified through lessons learned in the Balkans, the Gulf War and the post-Cold War environment.

should be maintained.’<sup>31</sup> Strategic mobility was one of the major European deficiencies that were identified in the aftermath of the Kosovo campaign (1999). Finally, according to the Military Capabilities Commitment Declaration by EU defence ministers, released on 20 November 2000, ‘As regards the strategic air and naval transport capabilities at the European Union’s disposal, improvements are necessary to guarantee that the Union is able to respond, in any scenario, to the requirements of a demanding operation at the top of the Petersberg range, as defined in Helsinki.’

Before proceeding with an analysis of current and projected European strategic mobility capabilities, it is worth considering whether there is a real strategic mobility problem in Europe. How did European nations deal with the issue of strategic lift in previous operations (crisis management, humanitarian, peacekeeping) in which they participated? Did European states use US or other foreign assets; did they use their own tactical lift assets for strategic purposes; did they employ civil/commercial assets; or did they resort to other options?

Up to now, European nations have concentrated on territorial defence and have not done much in terms of strategic lift. Europeans have been dependent on purchased or leased foreign equipment, from the United States, Russia and/or Ukraine, particularly for outsize or other large loads that European lift assets could not transport.<sup>32</sup> This can be illustrated by briefly examining some selected United Nations (UN), NATO and other operations of the last decade in

which European forces have been involved, and their implications for strategic transport.

During their intervention in the Falklands (1982), the British managed successfully – though ad hoc – to initiate and sustain a campaign more than 13,000 km from British home waters. Sealift was of primary importance in the Falklands. In addition to military lift assets, the United Kingdom used commercial aircraft and ships, the vast majority of these under British flags. Specifically, the British chartered or requisitioned about 56 commercial ships from 33 companies; most vessels were adapted to perform military missions and sent to combat zones.<sup>33</sup> The British encountered no insuperable difficulties in requisitioning the necessary sealift from the British commercial fleet. In addition to chartering from the commercial market, the UK Ministry of Defence (MOD) routinely requisitioned ships from Britain’s merchant navy fleet, such as the famed cruise ship *Queen Elizabeth II* which was pressed into service as a troop transport.

The Gulf war (1991) highlighted the fact that even the United States lacked sufficient strategic mobility capability to transport troops and equipment.<sup>34</sup> Even so, at that juncture, the United States mobilised 450,000 troops, while the most Europe could mobilise was 30,000.<sup>35</sup> Most troops were transported by sea. The United Kingdom, made use of the commercial market again, particularly for sealift, chartering container ships as well as general cargo ships and ro-ro, both British and foreign.<sup>36</sup> Unlike the Falklands war, in the Gulf the United Kingdom did

<sup>31</sup> Western European Union (WEU) Council of Ministers. *Audit of Assets and Capabilities for European Crisis Management Operations: Recommendations for Strengthening European Capabilities for Crisis Management Operations*, WEU Council of Ministers, Luxembourg, 23 November 1999, p. 2.

<sup>32</sup> Author’s interviews with William Hopkinson (telephone), April 2002; and James Townsend, US Mission to NATO, Brussels, May 2002.

<sup>33</sup> MDC International. *Mobilité Stratégique Maritime: Capacité Globale d’Affrètement Maritime des Pays Membres de l’Union Européenne*, Rapport Principal, 23 avril 2001, pp. 71-5.

<sup>34</sup> For example, the United States still required 28 per cent foreign-flag ships for its initial deployment to the Gulf. By September 1990, the US Military Sealift Command (MSC) had chartered 37 foreign ships from 15 nations (Source: Mark McLamb, LCDR G., United States Navy. ‘Strategic Sealift: A Fleeting Capability?’, CSC 1992, [www.globalsecurity.org/military/library/report/1992/MGM.htm](http://www.globalsecurity.org/military/library/report/1992/MGM.htm)).

<sup>35</sup> Assembly of WEU, The Interim European Security and Defence Assembly, *European Capabilities in the Field of Strategic Mobility*, Report submitted on behalf of the Technological and Aerospace Committee by Mr Lopez Henares, Rapporteur, Document A/1644, Paris: Assembly of WEU, 18 May 1999.

<sup>36</sup> The chartering of foreign vessels was indispensable due to the refusal of British ship owners to break their current contracts in order to make available their vessels to the Royal Navy. Of a total of 142 vessels chartered, only 8 were under a British flag (Source: MDC International, op. cit., pp. 78-9).

not requisition any vessels. France used US and Russian assets, as well as 36 civil vessels that made 108 journeys and transported 15,000 troops and 145,000 tonnes of cargo.

Operations in the Balkans also proved challenging for European nations in terms of the strategic lift capabilities they required. Starting in December 1995, the deployment of the NATO-led Implementation Force (IFOR – Operation *Joint Endeavour* from 20 December 1995 to 20 December 1996) in Bosnia and Herzegovina, which reached a troop level of 60,000 in 1997, required significant transport capabilities and organisation. Due to the volume and weight of the equipment to be transported, most European countries used naval and land transport rather than airlift.<sup>37</sup> Again, most troops were transported by sea. Many European countries used civilian transport, particularly sealift, to carry troops and equipment. A significant amount of foreign equipment, both military and commercial, was used. For instance, the German *Bundeswehr* used Russian lift assets, based on a formal agreement with that country. In addition, Germany had to charter Scandinavian sealift assets and other foreign assets on the commercial market.<sup>38</sup>

In the Kosovo campaign (1999), American C-17 transport aircraft flew half the strategic airlift missions required, since the Europeans lacked long-haul heavy-lift aircraft. France deployed its 4,500 troops for the operation using the Greek port of Salonika and four spe-

cialist ships for amphibious operations in addition to 12 ro-ro cargo ships flying seven different flags (chartered on the commercial market).<sup>39</sup> With respect to sealift, British maritime strategic lift assets – mainly the Royal Fleet Auxiliary (a civilian-manned flotilla owned by the MOD), which included two ro-ros operated on long-term charter – moved significant quantities of heavy equipment. Use was also made of commercial sealift, for example, ro-ros, to transport equipment to the region and to carry out other tasks.<sup>40</sup> The ratio of ro-ros on ad hoc charter to MOD vessels was 2:1. Some use was made of airlift in order to deploy resources and personnel into theatre, but since the United Kingdom was able to prepare and deploy well in advance of the conflict, most heavy equipment was able to deploy by sea. The use of commercial airlift assets was constrained because these were unable to operate to all destinations, due to the risks involved and the difficulties in using aircraft from some countries opposed to the NATO operation.

The most recent operation involving Europeans' use of strategic lift assets is the one in Afghanistan (2001-02). To install and support the 4,600-strong International Security Assistance Force (ISAF) – set up under a UN mandate to help the emergent Afghan government to establish itself – the 19 participant nations flew a mix of military aircraft, including rented Russian and Ukrainian Antonov An-124s and Ilyushin Il-76s, and chartered civilian planes.<sup>41,42</sup>

<sup>37</sup> Assembly of WEU (2001), op. cit., p. 4. For example, Europeans had no capability to airlift tanks.

<sup>38</sup> 70 per cent of the missions undertaken in 1999 were performed by vessels under foreign flags (Source: MDC International, op. cit., p. 116).

<sup>39</sup> The French only managed to charter small ro-ros – the only ones available in the chartering market – each providing about 1,000 linear metres. Chartering difficulties included delays of up to 10 days before the first ship was available in the loading port at Toulon. Very heavy equipment, such as *Leclerc* tanks could not be transported in chartered commercial vessels so specialist military ships had to be used (Source: Assembly of WEU (2001), op. cit., p. 5).

<sup>40</sup> According to a UK Ministry of Defence report on lessons learned from this operation, the fact that the United Kingdom deployed its land forces in significant numbers earlier than its Allies helped to avoid the difficulties resulting from competition for commercial assets. That flexibility of action is not guaranteed in the future. If the United Kingdom had needed to deploy sufficient resources for an opposed entry operation, it would have been likely to require significant strategic sealift and outsize strategic airlift assets. Access to US assets would probably have been restricted, since the United States would need all its own assets for its own purposes, and commercial assets of this nature, particularly in airlift which are few in number and not always available, would have been in high demand. In addition, in certain cases such assets were registered in countries whose governments were unsympathetic to the NATO campaign, and this caused difficulties (Ministry of Defence, *Kosovo: Lessons From the Crisis*, Presented to Parliament by the Secretary of State for Defence by Command of Her Majesty, June 2000, Chapter 6).

<sup>41</sup> John Brosky, 'U.N. Support Mission in Afghanistan Underscores European Airlift Failings', *Defense News*, 1-17 April 2002.

<sup>42</sup> Michael R. Gordon, 'NATO Offers Planning Help for Afghan Peace Force', *International Herald Tribune*, 12 April 2002.

Germany chartered An-124s, which flew about 100 sorties to transport its heavy military equipment between early January and the end of March at a cost of 250,000 per mission.<sup>43</sup> The United Kingdom and France also chartered An-124s, at about 300,000 per mission. In addition to the need for long-range, heavy lift, the German military had problems with self-protection capabilities for its transport aircraft: it had to transport its troops to Afghanistan in Dutch C-130s equipped with self-protection suites because the German C-160 *Transalls* were not suited for use in hostile environments.

The lack of long-range airlift has also forced participating countries to set up expensive staging bases in neighbouring countries. France, for example, has turned a civilian airstrip in Tajikistan into a cargo facility where materiel can be transferred from incoming C-130 aircraft to aging C-160s for the trip to Kabul. France also had to negotiate with Turkey for stopovers in Istanbul of its C-130s en route to Afghanistan. All these options required heavy financial investment.

As recent crises both on Europe's periphery and beyond have demonstrated, European nations cannot independently – whether through military or commercial assets or a combination of the two – meet the lift requirements of a crisis management operation along the lines of the Petersberg tasks, and are forced to resort to foreign assets. The ability to project and sustain forces is an essential element in building a credible European military intervention force, and strategic lift is critical for achieving that force projection ability.

### 1.3 Background – European perceptions of the EU role in the new security environment

A critical element that is missing from the current preparations for ESDP is a strategic concept linking the EU's military capabilities to its political objectives.<sup>44</sup> Such a concept would deal with questions such as where and when the EU acts militarily and in what kinds of operations it will engage. Clearly defined strategic guidelines and mission profiles are essential in determining the numbers and nature of the required military capabilities and support systems that EU nations should possess to carry out their security role in the context of ESDP.

Currently, there is no real consensus among European countries on this issue. Instead of a unified, comprehensive strategic concept representative of the fifteen EU nations, there are a range of often divergent perceptions of Europe's role in the new security environment held by different stakeholders. This paper will attempt to synthesise these perceptions in order to suggest a range of different roles for Europe, which in turn imply a range of military capabilities – in this case, in strategic transport.

#### 1.3.1 What are Europe's potential missions? Assumptions about types of operations

Identifying the range of missions and types of operations that the ERRF is likely to undertake within the context of ESDP would be helpful in evaluating the (strategic lift) requirements relevant to those missions and operations. Based on

<sup>43</sup> Gail Kaufman, 'Nations Facing Similar Strategic Airlift Shortages', *Defense News*, 20-26 May 2002.

<sup>44</sup> Alfred van Staden, Kees Homan, Bert Kreemers, Alfred Pijpers and Rob de Wijk. *Towards a European Strategic Concept* (The Hague: Netherlands Institute of International Relations Clingendael, November 2000), p. 5.

<sup>45</sup> The evolving definition of the Petersberg tasks from the original, more narrow one is closely linked to the development of ESDP, from the Treaty of Amsterdam (1997) and the St-Malo Joint Declaration (1998) to the EU Council meetings of Cologne (June 1999), Helsinki (December 1999) and Feira (June 2000). In addition, following the terrorist attacks of 11 September 2001 there has been considerable debate on whether the Petersberg tasks should be redefined to reflect the new security environment.

the broad definition of the Petersberg tasks,<sup>45</sup> which is increasingly interpreted as including robust military intervention and peace enforcement, the EU should plan for a range of different types of military operations, covering a broad spectrum of intensity. Key EU missions — starting at the low end of the intensity spectrum — would include the following:<sup>46</sup>

1. Humanitarian operations, including humanitarian aid, disaster relief and rescue tasks. Examples include disaster relief in Turkey (1999) and humanitarian aid in Congo (1995). Such operations may require military force to compensate for the lack of a secure environment. Depending on the nature of the disaster, the location, duration and the availability of host nation support, these operations can be very demanding in terms of the numbers and types of strategic transport equipments they require.

2. a) Conflict prevention operations that may include preventive diplomacy, economic initiatives, or military support to local authorities, most likely through preventive deployment. An example is the deployment of the UN force in Macedonia (1990s).

- b) Peacekeeping and peace building operations, which include first-generation peacekeeping — for example, monitoring of cease-fires and peace agreements, not mandating the use of force — and second-generation peacekeeping, which may involve imposing peace through the use of force. The UN interpositioning operation in Cyprus since 1974 is an example of the first type, while operations in Bosnia and Kosovo are examples of the second. Lower-intensity peacebuilding operations, such as the UN operations in Haiti and Cambodia, are also included in this category. Again, depending on circumstances, considerable strategic transport capabilities may be required.

3. Peace enforcement/peacemaking operations (such as separation of parties by force), which

may include protection of the local population, restoring law and order, containing a conflict, establishing safe areas, humanitarian interventions and others. These types of operations fit the ‘most demanding’ profile and are coercive in nature.

### 1.3.2 Where should Europe go? Assumptions about the radius of action of the ERRF

The geographical radius of action of a EU force — the question whether a European rapid reaction force should deal mainly with crisis management in and around the EU’s borders, or whether that force could be deployed well beyond those borders — is not yet clear. European policymakers leave the issue sufficiently vague to preserve flexibility and to position the EU as both a regional and a global actor. There are several reasons for this extensive interpretation of Europe’s interests worldwide. First, several European states — such as France and the United Kingdom — perceive themselves as global players, due to their history and current military capabilities. Second, Europe sees itself as a global economic power. Finally, given that the EU’s concept of intervention has always been predicated on the core values (such as human rights) it claims to represent, it is difficult for it to draw up geographical boundaries beyond which it would consider that it had no responsibility for defending those values.<sup>47</sup>

Recently, a common perception has emerged that ESDP implies missions related to defending EU interests outside EU territory — even though no official EU treaty contains such a provision. In practice, the capabilities for military intervention available to the EU or individual EU nations place an effective limitation on its geographical field of action.

<sup>46</sup> Based on discussion in van Staden et al., op. cit., pp. 21-6.

<sup>47</sup> Jolyon Howorth, ‘European integration and defence: the ultimate challenge?’, *Chaillot Paper 43* (Paris: WEU Institute for Security Studies, November 2000), pp. 76-7.

Since the EU's Capabilities Commitment Conference in November 2000, reference has frequently been made to an operational radius of 4,000 km from Brussels.<sup>48</sup> While this radius has not been officially endorsed, it has been adopted informally as a planning guideline. It encompasses the following areas: Central and Eastern Europe (including the Balkans); North-West Africa; the Middle East; the Caucasus

region; and western Russia. If one examines recent operations in which European forces have participated, however, many of them do not fall within that radius: the Gulf, East Timor, Sierra Leone, Rwanda and, most recently, Afghanistan. Still, the 4,000 km radius applies to operations that European forces could conceivably undertake autonomously, without the participation of the United States.<sup>49</sup>

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<sup>48</sup> See, for instance, *The Military Balance 2001•2002* (Oxford: Oxford University Press for the IISS, 2001), p. 286.

<sup>49</sup> The 4,000 km radius also happens to match the maximum range of a fully loaded A400M.

## Assessing the gap between required and available strategic transport assets and capabilities

The first step in finding ways to overcome Europe's deficiency in strategic mobility is to identify the gap between the assets and capabilities that Europe needs to fulfil its security role and the assets and capabilities it has available.

### 2.1 *Strategic transport assets and capabilities required*

Based on perceptions of Europe's role in the new security environment – both in terms of mission types and geographical areas of operation – we can make certain assumptions about the strategic lift assets and capabilities that would be required for Europe to fulfil that role. A set of illustrative crisis management scenarios and potential missions, such as the ones presented in the previous section, could be used for that purpose.

Military transport requirements depend on a number of interrelated factors linked to each particular contingency. These factors include the magnitude and projected duration of the conflict; the distance from and conditions (for example, local terrain, climate,<sup>50</sup> infrastructure, host nation support<sup>51</sup>) in the theatre to which forces are to be projected; the size of the forces and amount of equipment which will need to be rapidly deployed; the potential frequency of such deployments; the time allotted for deployment; and other factors. For EU operations in particular, another significant factor is related to the specific nations participating (EU and/or non-EU members) and the assets they are contributing to the operation.

Time and distance are two dimensions of military operations that are particularly critical both in conducting effective interventions and in shaping military capability requirements. A timely response and the ability to project forces and operate outside one's own territory without supporting infrastructure in place demand mobile and rapidly deployable forces as well as strategic transport and logistical support lines over a great distance. The requirement for strategic lift is not only a requirement for assets capable of transporting certain kinds of cargo by a designated mode (air or sea), but also the requirement for timely availability of such assets. A European strategic lift capability must be robust in order to allow for fast, timely and effective action in crisis situations, and at the same time flexible in its nature and composition in order to be able to adapt to the demands of different contingencies.

Since the EU is expected to contribute to the whole range of missions and to operate in various geographical locations, a robust and flexible strategic lift capability is needed in order to be able deal with the whole spectrum of potential contingencies. European nations must be able to plan for the most demanding operational scenarios. Given that there are a range of potential missions and locations where European operations could take place, there should accordingly be a range of strategic transport assets and capabilities available to enable Europe to fulfil its role in the new security environment. This section will first introduce and define the two main dimensions of strategic lift addressed in this paper – airlift and sealift – and the types of assets in each category.

<sup>50</sup> Climate is particularly important in determining lift requirements. For example, heavy lift aircraft such as C-17s or Boeing 747s often cannot be used in hot climates where thin tarmac runways cannot support their weight.

<sup>51</sup> An example of host nation support, which may be critical to the lift requirements for a particular operation, is the availability and quality of ports and airports of embarkation in the theatre of operations and their daily unloading capacity.



### 2.1.1 Airlift capabilities

Military strategic transport aircraft are distinguished by their load capacity – the amount of cargo or number of passengers (vehicles, troops) that they are able to carry – and by the range or distance that they can cover. Strategic airlifters, as opposed to tactical ones, are generally larger and can fly longer distances.<sup>52</sup>

General cargo or medium-size airlifters are tactical transport aircraft that can carry between 10 and 17 tonnes and therefore can be used for

some strategic transport missions because of their transport capacity and range. Outsize cargo aircraft can carry materiel that cannot be carried in general cargo aircraft because of its size or weight – for example medium or heavy helicopters – that need to be disassembled in order to be carried by tactical aircraft or equipment heavier than 17 tonnes. Outsize upper airlifters are able to carry large helicopters such as the CH-47 *Chinook*, while medium-size ones are not.

**Table 1: Classification of strategic airlifters based on capacity and range<sup>53</sup>  
(in ascending order of magnitude)<sup>54</sup>**

Type	Aircraft <sup>55</sup>	Capacity/range
Medium-size airlifters (general cargo)	C-160 <i>Transall</i> C-130 <i>Hercules</i>	16 tonnes/1,800 km 17 tonnes/3,200-5,000 km
Outsize medium	A400M <sup>56</sup> An-70 Ilyushin Il-76 C-17 <i>Globemaster</i>	35 tonnes/3,700 km 47 tonnes/1,350 km <sup>57</sup> 47 tonnes/3,000 km <sup>58</sup> 80 tonnes/5,000 km
Outsize upper	C-5 <i>Galaxy</i> An-124	120 tonnes/5,200 km 135 tonnes/5,000 km

<sup>52</sup> In the table that follows, however, the A400M, although classified as a medium-size strategic airlifter, can also be used for tactical transport.

<sup>53</sup> Range attained without air-to-air refuelling.

<sup>54</sup> Assembly of WEU (2001), op. cit., p. 7.

<sup>55</sup> The aircraft included in this column are illustrative of the characteristics of each category. Other aircraft, not presented here, may belong to these categories.

<sup>56</sup> Expected to enter into service with participating European nations in 2008.

<sup>57</sup> This is the range flown at full load (47 tonnes); the An-70 can also fly: 3,800 km with 35 tonnes of cargo, 5,000 km with 30 tonnes of cargo and 7,400 km with 20 tonnes of cargo (Il-76 Medium Range Transport Aircraft, Air Force Technology, ) [www.airforce-technology.com/projects/i176/index.html](http://www.airforce-technology.com/projects/i176/index.html).

<sup>58</sup> This is the range flown with a load of 47 tonnes; the Il-76 can fly 6,100 km with 20 tonnes of cargo, (Flugrevue Datafiles, Antonov An-70, ) [www.flug-revue.rotor.com/Frtypen/FRAn-70.htm](http://www.flug-revue.rotor.com/Frtypen/FRAn-70.htm).

## 2.1.2 Sealift capabilities

Sealift capability can encompass three elements: military sealift assets; amphibious assets<sup>59</sup> used for strategic sealift purposes; and civil sealift assets put at the disposal of the armed forces of a country, under chartering or other arrangements. Amphibious forces can be used for strategic sealift purposes because of their ability to make a port usable (their original purpose is not relevant to the Petersberg tasks, since the latter do not involve planning for a major beach assault or similar operation).<sup>60</sup> The table below lists the main naval assets that can be used for strategic sealift:<sup>61</sup>

Ro-ros are the preferred ship type for deployment of military unit equipment: they are the only ones capable of transporting many diffe-

rent types of military vehicles and non-self-deployable aircraft with reduced loading/unloading times; they require a limited amount of lifting gear; and they possess open deck areas well suited to the carriage of outsized military cargo. Wheeled and tracked vehicles can be loaded and unloaded on ro-ros without the use of cranes: they are driven or towed on and off the ship via either the ship's own ramps or shore-based ramps. Although very suitable for vehicle transport, ro-ros are not equally suitable for significant numbers of passengers. Nor are they particularly suitable for sustainability of projected forces (compared with general cargo and container ships), and they have limited availability, because their market sector is much reduced compared with container ships.

**Table 2: Classification of sealift vessels based on capacity**<sup>62</sup>

Type of vessel	Typical capacity
Roll-on roll-off (ro-ro) ships	On average, 2,000 linear metres per ship (see note 58)
Container ships	1,000 TEU per ship
General cargo/transport ships	4,000 tonnes per ship
Tankers	10,000 cubic metres per ship
Landing platforms, dock (LPDs)	Displacement 7,500-22,000 tonnes fully laden

<sup>59</sup> These are military assets used for amphibious operations. An amphibious operation is a military operation launched from the sea by naval and landing forces embarked in ships or craft involving a landing on a hostile or potentially hostile shore.

<sup>60</sup> Amphibious operations are designed and conducted primarily to: prosecute further combat operations; obtain a site for an advanced naval, land, or air base; deny use of an area or facilities to the enemy; and fix enemy forces and attention, providing opportunities for other combat operations. Amphibious operations can also be mounted to render ports usable.

<sup>61</sup> The table shows average capacity by type of ship. Different measures are used to measure the capacity of different types of ships: for ro-ro ships, linear metres (LIM) are used; for container ships, capacity is expressed by the number of twenty foot containers (Twenty feet Equivalent Unit – TEU); for general cargo ships, metric tonnes (MT) are used; and finally, for tankers cubic metres (CUMs) are the measure of capacity.

<sup>62</sup> Sources: MDC International, op. cit., pp. 8-10; Assembly of WEU (2001), op. cit., pp. 9-10.

In addition to military ro-ros, civilian ones can also be used for strategic sealift, particularly given the scarcity of military vessels. However, civilian ro-ros chartered on the international market also have limited availability: their number worldwide is diminishing in favour of container ships. Furthermore, in times of crisis involving many big international players, demand for ro-ros is even higher, saturating the market. This saturation increases the cost of chartering dramatically. In addition to their limited availability, civilian ro-ros are not built to fighting navy standards and are therefore vulnerable to enemy action; they lack speed and range; their decks cannot support the loading and unloading of very heavy military equipment; and their sustainability is inadequate. Despite all these disadvantages, however, they are currently indispensable sealift assets.

Container ships are specifically designed to carry all of their cargo in standard ocean shipping containers. They have large cargo capacity, excellent suitability for replenishment, can perform rapid and efficient cargo operations, and are more widely available. Movement by containers also offers greater degrees of cargo security, reduced instances of pilferage and damage to cargo, reduced cargo-handling costs and faster, more efficient delivery. Military disadvantages of containers include a near total dependence on specialised shore-side equipment for cargo loading and unloading, and general unsuitability for the carriage of large vehicles and oversized cargo unless modified to utilise heavy-duty flat-racks.

General cargo ships have their own system of booms, cranes and winches to load equipment into cargo holds. Liquid cargo carriers, or tankers, are specifically designed to transport liquid cargoes in bulk. Finally, LPDs are amphibious assets, which, although not formally designated as strategic sealift assets, are the most common vessels employed by European navies for strategic sealift purposes. LPDs are trans-

port vessels that can berth in a port, in order to secure the zone by a forward unit, even if it is not equipped, and can equip that port with basic unloading facilities. In addition, LPDs can accommodate several army tactical transport helicopters; they have a capacity for embarkation afloat of landing or small harbour craft for the amphibious landing of troops and vehicles; and they can accommodate army units, typically 400-800 troops.<sup>63</sup>

### 2.1.3 The trade-off between airlift and sealift

Most countries use a combination of airlift and sealift (and, where possible, overland transport) to meet their strategic lift needs. In recent crises, a very small percentage of equipment was transported by air: during the Gulf war the proportion was 5 per cent; in Bosnia and Kosovo, it was no more than 5-10 per cent.<sup>64</sup> Although transport ships are much slower than transport aircraft, they have both lower costs (to purchase and operate) and higher capacities (a large ship can carry hundreds of planeloads), which implies that sealift will most probably also deliver the vast majority of cargo and supplies to future major conflicts. Therefore, it seems likely that a full-scale deployment of the ERRF, with a minimum of 60,000 troops and all their equipment, would require a substantial sea transport effort. However, each mode of transport has its advantages and drawbacks, which justifies the need to possess both. For rapid reaction to a crisis closer to Europe, military sealift and amphibious capabilities alone will not suffice. The deployment to Kosovo of 40,000 troops took five months, which cannot be classified as either 'rapid,' or as a 'reaction'. Light strategic and tactical airlift capability is also essential for most operations.

Airlift has several advantages. Speed of deployment and availability are among the most

<sup>63</sup> Assembly of WEU (2001), op. cit., p. 10.

<sup>64</sup> Assembly of WEU (2001), op. cit., p. 5.

important. Airlift allows virtually immediate reaction time compared with other land and sea transport means. To illustrate, during the Yom Kippur war in 1973, the United States launched a major operation to provide logistic support to Israel. Twenty-six per cent of the equipment was dispatched by air and arrived in good time, while the remaining 74 per cent dispatched by sea arrived after the end of the hostilities.<sup>65</sup> Airlift may also be the only option for moving troops and equipment to and within a land-locked country.<sup>66</sup> For these reasons, airlift has become the preferred mode of transport in out-of-area crisis management missions in which rapid reaction is key. However, airlift is many times more expensive than sealift and other means of strategic mobility, and is impractical for moving large numbers of forces or units with heavy tanks and armoured vehicles. Moreover, transport aircraft can carry only limited loads. For these reasons, it is necessary to have access to sealift as a secondary option in order to retain flexibility.

Sealift has its own advantages. Unit for unit, ships have a higher haulage capacity than aircraft at a lower cost — every large sealift ship can deliver the equivalent of more than 300 loads of a C-141, one of the most common types of cargo aircraft.<sup>67</sup> Sealift is the most cost-effective way of transporting troops and equipment to a theatre of operations. Ships can also carry heavy or outsized equipment. Ships can pre-position at sea near a potential threat area. They do not need overflight rights, and waters more than 12 miles from land are open to international navigation. One disadvantage is the limited speed of the majority of the sealift fleet. Some vessels also require well-developed port facilities to transfer their cargo to the shore. Sealift ships have little or no defensive capabilities. Finally, sealift vessels rely heavily on civilian shipping lines and labour.

To illustrate the trade-off between the two types of lift, looking at a notional 4,000 nautical mile scenario<sup>68</sup> comparing equal-cost (\$20 million) lift forces — C-17s and the new large medium-speed ro-ro ships — and assuming no pre-positioned ships in the theatre, airlift could deliver 72,000 tonnes of cargo in 36 days, while sealift could deliver 3.96 million tonnes in the same period.<sup>69</sup>

#### 2.1.4 Indicative requirements by types of missions

As analysed above, the nature of the operation — including its intensity and urgency — and its geographical location, have an impact on the lift capabilities required. Missions in locations far removed from Europe's borders should require either more sealift and amphibious capabilities or longer-range airlift or a combination of both, depending on the time factor; missions located closer but demanding more rapid reaction should require more extensive airlift. In addition, pre-positioning of forces and equipment should be taken into consideration when determining lift requirements. European nations have very little equipment pre-positioned in potential areas of crisis, therefore this factor is not taken into consideration for the purposes of this paper.

Given that there is a lot of uncertainty over the factors that influence lift requirements, there is room for debate on the assumptions that defence planners make about how major future deployments will take place. Probably, no analysis can give a definite answer on how much and what kind of lift will be enough to cover European needs. Ultimately, decision-makers must balance the cost of investing in transport assets against the capabilities that these assets

<sup>65</sup> Airlift Conference in London, 31 August-1 September 1995, cited in Assembly of WEU (1999), op. cit.

<sup>66</sup> Such was the case in Afghanistan, where, despite unimproved runways, the US Air Force's C-17s delivered a large percentage of the essential assets to the region just weeks after the 11 September attacks (Kaufman, op. cit., p. 30).

<sup>67</sup> The Congress of the United States – Congressional Budget Office (CBO), *Moving U.S. Forces: Options for Strategic Mobility* (Washington, DC: CBO, February 1997).

<sup>68</sup> This scenario should not be confused with the 4,000 km potential radius of action of the ERF.

<sup>69</sup> John Pike, *Sealift*, FAS Military Analysis Network, Federation of American Scientists, <http://www.fas.org/man/dod-101/sys/ship/sealift.htm> (updated 19 October 2000).

will provide.

The air aspects of military transport follow primarily the 'hub and spoke' principle of deployment by air to a main airbase (or theatre) by strategic airlift and then onward movement by tactical aircraft. In sea transport, the same principle would require deployment by sea to similar locations and then onward movement by land or by tactical air transport. Given that in the emerging security environment there is no guarantee that a European force will be able to make use of local bases on its way to a battlefield,

such a force mainly requires a hub-to-battlefield (rather than hub-to-hub) lift capability. That implies the potential need for long-range aircraft – depending on the location of the crisis – and a significant need for sealift. Based on the latter assumption, Table 3 provides illustrative air- and sealift requirements for different geographical ranges of operations and types of missions.

For regional missions, where the potential geographical range of operations follows the 4,000 km hypothesis, the assumption is that of a

**Table 3: Strategic lift requirements**

Peacemaking	Tactical used as strategic (C-130, C-160, A400M); maybe C-17	A400M, C-17, C-5	Long-range + heavy/outrange lift (C-17, C-5, An-124)
	Mil ro-ros, LPDs	Mil ro-ros, LPDs	Mil ro-ros, LPDs
Peacekeeping & conflict prevention	C-130, C-160, A400M	Long-range (C-17, maybe A400M)	C-17
	Mil+civ ro-ros, general cargo, LPDs	Mil+civ ro-ros, general cargo, LPDs	Mil+civ ro-ros, general cargo only as complement or if heavy vehicles not requiring transport, LPDs
Humanitarian operations	C-130, C-160, A400M; civil (e.g. A310)	A400M; civil aircraft	C-17; civil aircraft
	Mil+civ ro-ros, general cargo, LPDs	Mil+civ ro-ros, general cargo, LPDs	Mil+civ ro-ros, general cargo, LPDs
	Regional	Wider peacekeeping circle	Global

Intensity ↑

Radius of action →

deployment of an army corps (60,000 troops) within 60 days, as specified in the Helsinki headline goal. Depending on the range, existing (C-130, C-160) or future (A400M) tactical and outsize medium airlifters should be able to satisfy the air aspect of such operations, particularly for urgent missions or phases of operations (such as the initial phase). In fact, in many cases, tactical airlift — of which the Europeans possess a significant capability — will be more useful for supporting relief operations than heavy strategic lift. Furthermore, civil aircraft (for example, the Airbus A310) could also be used, as long as the operation does not take place in a hostile environment. These requirements would apply to low-intensity humanitarian and peacekeeping operations that do not require heavy or outsize equipment such as armoured vehicles or attack helicopters. European countries have a tradition of humanitarian intervention in unstable regions, including Africa and the Balkans. In such operations, heavy lift — a major European deficiency compared with the United States<sup>70</sup> — is not as important, particularly after the early days of a crisis. In fact, sealift and overland shipment, if possible, would be a more convenient and generally less expensive option than airlift. Higher-intensity peacemaking operations (such as the separation of parties by force) may require heavy/outsize airlift or more extensive use of sealift to transport the assets needed to conduct such operations.

In the case of peacekeeping or peacemaking missions in a wider area (the second circle of interests), again depending on the range, a medium strategic airlifter such as the A400M could potentially be used for some lower-intensity operations and larger, longer-range aircraft (such as the C-5, C-17 or An-124) for longer distances as well as for higher-intensity operations that require heavy lift. Existing tactical airlifters are not appropriate for this category of operations.

Finally, for global missions, whether low-intensity humanitarian/peacekeeping or higher-intensity peacemaking ones, long-range airlifters are required both for their range and lift capabilities.

In sealift, the nature of the conflict — which in turn determines the types of combat assets requiring transport — has a more significant effect on requirements than the geographical distance. The capacity of sealift vessels as well as the speed and ease of loading/unloading become decisive factors for the types of vessels that are most appropriate for specific missions. The type of vessel best suited for carrying military combat units is the ro-ro ship. Given that army combat units have large numbers of wheeled and tracked vehicles, ro-ros are ideal for carrying such units because they have a system of external and internal ramps and open storage bays, which allows vehicles to be driven onto the ship and then parked and secured quickly.<sup>71</sup> Therefore, the more demanding the mission on the intensity spectrum, the more useful — even indispensable — ro-ros become, particularly military ones, given civil ro-ros' drawbacks for high-intensity missions.<sup>72</sup>

General cargo ships can be used in a variety of ports, including those that lack modern facilities, because they have their own cranes for loading and unloading cargo. However, ro-ros are still easier to load and unload than general cargo ships, particularly when transporting military vehicles. Also, cargo ships are smaller — most of them can carry about half the load of an average ro-ro — and take two to three days longer to load and unload than ro-ros.<sup>73</sup> Consequently, general cargo ships are more likely to be useful in lower-intensity operations that do not require heavy vehicles, which would pose problems in loading and unloading. Still, cargo vessels can always be used as a complement to ro-ros.

Lastly, commercial ro-ros or other chartered vehicles are not likely to be used in high-inten-

<sup>70</sup> For example, in airlift, EU nations currently have at their disposal 4 C-17s (leased by the United Kingdom from Boeing) compared with America's 67 C-17s and 126 C-5s.

<sup>71</sup> CBO, op. cit.

<sup>72</sup> For example, ro-ros were used extensively in the Gulf War.

<sup>73</sup> CBO, op. cit.

sity operations — few shippers would be willing to risk the safety of their commercial cargo by carrying ammunition in the same load or by sending their ships into hostile environments. However, commercial ships are very useful for replenishment — food, construction materials, spare parts, medical supplies and the like.

As an illustration of the approximate quantities of sealift capabilities required for the ERRF in Petersberg-type missions, first evaluations regarding the sealift requirement of the Helsinki headline goal have revealed that, for a force projection at a 4,000 km range, 30 to 50 ro-ro vessels of medium tonnage (about 2,000 linear metres) would be required for the duration of the operation. That, however, does not exclude the use of other vessels such as container ships.<sup>74</sup> According to another study, 84 ro-ros would be required to satisfy the Helsinki headline goal.<sup>75</sup> These cannot possibly come exclusively from the military sector.

## 2.2 Assets and capabilities currently available to major EU nations

A pragmatic examination of the mobility of EU armed forces reveals a mixed picture: Europeans seem to have significant lift capabilities, but only in terms of particular types of assets, which do not necessarily correspond to the capabilities required for them to carry out the types of operations that they may need to conduct in the foreseeable future.<sup>76</sup> For example, European nations have considerable numbers of tactical transport aircraft but very few strategic transport aircraft. Furthermore, they have significant amphibious capabilities that can be used for strategic sealift purposes, but very few ro-ro ferries, which are particularly useful for such purposes.

### 2.2.1 Airlift

EU countries currently have only medium-sized airlifters: 150 C-160 *Transall* and about 140 C-130 *Hercules* aircraft.<sup>77</sup> Medium-size cargo aircraft have limited load capacity (less than 20 tonnes) and can cover only short distances, despite air-to-air refuelling capabilities. These aircraft are considered more a tactical than a strategic platform. Many EU nations have plans to improve their strategic airlift capabilities by jointly purchasing the A400M military transport aircraft and/or by leasing or purchasing foreign aircraft.

Currently, the United Kingdom possesses Europe's largest military airlift capability, particularly in terms of outsize transport aircraft (4 C-17s have been leased from the United States). Although the United Kingdom is participating in the A400M programme, with its Royal Air Force (RAF) planning to use the aircraft as its strategic airlifter from 2010, the MOD is considering a contingency plan. This involves leasing or even buying 5 additional C-17s and 10 to 20 C-130Ks in order to avoid any shortage in its strategic lift capabilities if the A400M does not materialise or if its in-service date slips further. Other European nations, such as France, Denmark and Italy, are planning to upgrade their aging C-130s and C-160s or replace them with newer versions.

### 2.2.2 Sealift

At the time of writing not all European countries possess naval vessels suitable for strategic transport. Assets currently available to European nations for strategic sealift include LPDs, ro-ro ferries and other types of vessels. EU countries possess around 20 LPD amphibious vessels, of which on average 12 have been made available for crisis management.<sup>78</sup> Overall, European amphibious lift capability is relatively

<sup>74</sup> MDC International, op. cit., p. 7.

<sup>75</sup> Assembly of WEU (2001), op. cit., p. 11.

<sup>76</sup> A brief survey of the strategic lift assets held by different EU and non-EU member states is included in Annexe a1.

<sup>77</sup> Assembly of WEU (2001), op. cit., p. 7.

<sup>78</sup> This means that they have been included in the catalogue of contributions to the Helsinki headline goal.

good and improving; according to some predictions, it could triple by 2010, compared to what it was in 1990.<sup>79</sup> In addition to amphibious ships, cargo supply ships, landing ship logistics (LSLs) and ro-ros can be used to resupply forward units, before calling on civilian assets. Regarding ro-ros, only Britain's Royal Navy has such capabilities – three 24,000-tonne vessels. Heavy sealift remains largely the preserve of the United Kingdom and France, both of which have plans to acquire additional ro-ro vessels, while a few other countries have limited amphibious capabilities.

The United Kingdom, Germany, the Netherlands, Belgium and Luxembourg are taking steps to improve their strategic sealift capabilities. The United Kingdom is the most actively engaged, among EU countries, in working towards an ambitious sealift capability, with the Royal Navy in the process of expanding its sealift capability by 2005 for about 3.1 billion euro.<sup>80</sup> Britain's Royal Fleet Auxiliary has 19 ships, including the 3 24,000-tonne ro-ros. In addition, a decision was made in 1998 to build another 6 ro-ros funded by a private finance initiative (PFI) contract over a period of 25 years.<sup>81</sup> The first vessel was to be available in the autumn of 2002 and the remainder are scheduled to be in service by mid-2003. The new vessels are capable of carrying main battle tanks, self-propelled howitzers and numerous other vehicle types. The United Kingdom is also building two LPDs, the first of which will enter service by the end of 2002. Finally, the British are building four Alternative Landing Ship Logistics (ALSL) vessels to transport amphibious equipment and troops.<sup>82</sup>

The United Kingdom has agreed with the Netherlands to pool shipping capacity to move heavy equipment to trouble spots by sea.

In France, the *Foudre*-class LPDs have substantial carrying capacity, each ship being capable of landing and supporting a mechanised regiment of the French rapid deployment force. Construction of two more, larger, LPDs is expected to be launched during 2002, with delivery due in 2005-06. The Netherlands, apart from procuring two additional amphibious *Rotterdam*-class LPDs, intends to participate in the British PFI procurement contract for the six ro-ros. Finally, the Belgian government has decided to procure, jointly with Luxembourg, an amphibious military vessel capable of transporting amphibious equipment and troops.

Despite these encouraging prospects for future capabilities, currently the number of European sealift assets is so limited that recourse to commercial cargo vessels is a common practice. Many maritime nations worldwide depend upon a strong merchant navy to provide shipping in time of war. Given that no maritime nation – not even the United States – could afford to own all the shipping assets required to meet its wartime needs, a close relationship between national navies and the maritime industry is not uncommon. However, the commercial shipping industry in many European nations is in decline. As a result, many of these nations have lost significant sealift capacity in recent years.<sup>83</sup> The number of commercial ships available and suitable for transporting military cargo is declining and must be improved if using civilian vessels is to remain a viable option.<sup>84</sup>

<sup>79</sup> Author's interview with Diego Ruiz Palmer, Northrop Grumman International, Brussels, May 2002.

<sup>80</sup> Assembly of WEU (2001), op. cit., p. 11.

<sup>81</sup> Britain signed a £950 million (\$1.45 billion) deal with AWSR Shipping to supply up to six new ro-ro ships to boost the Ministry of Defence's strategic transport capabilities.

<sup>82</sup> Assembly of WEU, The Interim European Security and Defence Assembly, *Defence Equipment for European Crisis Management – Reply to the Annual Report of the Council*, Report submitted on behalf of the Technological and Aerospace Committee by Mr Meale, Rapporteur, Document A/1760 (Paris: Assembly of WEU, 5 December 2001), p. 11.

<sup>83</sup> Author's interview with Diego Ruiz Palmer, Northrop Grumman international, Brussels, May 2002.

<sup>84</sup> *Memorandum by the Ministry of Defence on the Future of the UK Shipping Industry* (FUS 39), 5 February 1999, [www.shipping.detr.gov.uk/future/](http://www.shipping.detr.gov.uk/future/), cited in Lutz (2001), p. 75.



### 2.2.3 The prospect of using US assets

When examining European strategic mobility, the following paradox emerges: in operations where Europe participates alongside the United States, where in theory it might make use of US strategic lift assets, Europe cannot in practice take advantage of them, since these assets are over-extended and barely sufficient for America's own needs.<sup>85</sup> At the same time, in contingencies where European nations would operate alone, without US participation, the use of US assets is by no means guaranteed, since American forces may need to use these assets in other contingencies or may not agree to them being used by European forces. Therefore, the use of US assets should by no means be considered a guaranteed option for compensating for European deficiencies.

## 2.3 *Identifying the gap: areas of improvement for EU strategic lift capabilities*

### 2.3.1 Dimensions of the gap

There are two ways of looking at the gap between Europe's expectations — both internal ambitions and external demands — and capabilities or between required and available assets and capabilities. First, one could look at the long-term supply gap between required and available (supplied) assets and capabilities, and, second, one could look at the capability gap to be covered in the short term, until long-term solutions are in place.<sup>86</sup> Although the first gap is ultimately the most critical, managing the short-term gap is also important and should not be neglected. The section that follows therefore presents policy options dealing with both gaps.

European strategic transport capabilities have several problems, as revealed in the previous sections. First, there are insufficient lift assets. France and the United Kingdom, with their post-colonial legacies, have some strategic lift, but other EU nations have not seen the need for such a capability, particularly in terms of heavy lift. This insufficiency means that, in many cases, Europeans will be unable to transport key crisis management equipment. For example, heavy outsize equipment (such as armoured vehicles) that may be required for a peace enforcement operation cannot be transported using existing, medium-size airlift assets; sealift may be the only resort, with the necessary limitations (particularly in terms of timeliness) that use of this means implies. The problem of inadequate payload and/or range is more pronounced in airlift due to the absence of wide-bodied, ramp-fitted aircraft that can lift heavy equipment required for higher-intensity peace support operations. The majority of European transport aircraft are C-130s and C-160s, neither of which can transport very heavy or outsize cargo, and both of which have limited range. Europe lacks heavy airlift capabilities, such as the American C-5, C-17 and C-141 heavy transport aircraft. With no equivalent of those aircraft, Europeans are almost completely dependent on the United States for the transport of their troops and outsize equipment over long distances. Some European countries have recognised the problem and have sought remedies, at least in the near term. For example, the United Kingdom has arranged to procure 25 C-130Js and to lease 4 C-17s from Boeing to meet its short-term strategic airlift requirement. However, the C-17s are on a seven-year leasing arrangement and the programme is designed only as a stopgap while the new procurement programme is developed.

Europeans also have a shortfall in strategic sealift capabilities such as large ro-ro ships (Europe has only 3, compared with the United

<sup>85</sup> In the Gulf war, for example, the United States had to charter civilian and foreign ships for its deployments; in Afghanistan, it had to lease foreign aircraft.

<sup>86</sup> Author's interview with Capt. Paul N. Collins, EU Military Staff, Brussels, May 2002.

States' 12) and fast sealift ships (Europe has none, while the United States has 8).<sup>87</sup> This shortfall is due both to the lack of sufficient military vessels and to the limited availability of civilian vessels that could be used for military purposes. Airlift cannot meaningfully make up for this shortage because of its inherent cargo-carrying limitations and expense. Limited national military and civilian assets create the need to resort to chartering foreign assets (military and/or commercial), the availability of which on the international market also seems to be limited. The deployment by France of its 4,500 troops to Kosovo using the Greek port of Salonika presented several such problems: France had to use 12 ro-ros flying 7 different flags, had many delays due to the difficulties in adhering to chartering times on the civilian market, and was forced to charter ships of doubtful quality, due to the limited availability.<sup>88</sup>

A second problem is the aging of European

nations' strategic lift assets, which is particularly acute for airlift: a large part of the European airlift fleet is over 25 years old. For example, the French and German C-160s are old and due for replacement.<sup>89</sup> Maintaining such aircraft is becoming more and more expensive, in view of their limited availability. In fact, by 2008 27 out of the 66 existing *Transalls* will be unusable.<sup>90</sup> In sealift, the problem is not so much aging of the fleet as the insufficiency of military assets or the difficulty of access to suitable commercial ones.

Another problem with European lift capabilities is the low fleet availability by modern standards, particularly for sealift. The availability of commercial ro-ros in the worldwide market is a key limitation in the effort to build a credible sealift capability that satisfies the requirements of the Helsinki headline goal.

Because of these shortcomings, European strategic lift assets are often obsolete and unproductive.

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<sup>87</sup> 'A Common European Military Policy', *Strategic Comments*, vol. 5, Issue 6, July 1999.

<sup>88</sup> Assembly of WEU (2001), *op. cit.*, p. 5.

<sup>89</sup> The C-130's first flight was in 1954; the C-160 *Transall*'s in 1963. The first French *Transalls* entered service in 1967, which makes them 35 years old. The number of that aircraft will continue to diminish rapidly during the next few years since nearly 30 French C-160s will be withdrawn by 2008, Pierre Pascallon (ed.), *Quelles Perspectives Pour le Transport Aérien Militaire Français?* (Paris: L'Harmattan, 2001), p.17.

<sup>90</sup> Pascallon, *op. cit.*, p. 97.

## Policy options

**B**ased on the previous sections' examination of the range of strategic lift assets and capabilities required for the EU to fulfil its new security role, and the gap between these requirements and the assets available to EU nations, the following section will identify and describe the main policy options that EU nations can resort to in order to obtain the required assets and capabilities in strategic lift. The first part of this section will provide an overview of existing alternatives to which individual nations have resorted to cover strategic lift needs up to now. The second part will explore potential future options, characterised by their emphasis on joint, integrative approaches.

### *3.1 Existing options and structures*

Several criteria can be used to categorise existing policy options for acquiring strategic lift assets and capabilities. Two common types of criteria include the ownership of the assets involved (for example, government- vs. privately-owned) and the long-term vs. short-term nature of the option. The following options for acquiring strategic transport capabilities are currently available to European nations, distinguished according to the long-term vs. short-term nature of their implications.<sup>91</sup>

#### **3.1.1 Long-term procurement of military transport assets by national armed forces (air and naval)**

The most common procurement options in that category include:

- ▶ production – national or multinational (co-development and/or co-production);
- ▶ off-the-shelf purchase of military assets; and
- ▶ long-term leasing of military assets.

##### **PRODUCTION**

National production programmes for building strategic lift capabilities – as is the case for other types of capabilities – are becoming increasingly rare, due to affordability problems.<sup>92</sup> An example of a planned individual-country procurement programme is the decision taken in 1998 by the United Kingdom to build six 24,000-tonne ro-ros for rapid reaction. Still, even this programme is not a pure case of national (i.e. government-funded) production, since it is undertaken under a public-private partnership scheme. Affordability concerns, as well as the need to ensure compatibility and interoperability among European lift assets, given the increasingly multinational nature of military operations, create incentives for European nations to seek multinational production arrangements. A prime example is the multinational A400M military transport aircraft programme, a co-development/co-production arrangement among several European nations.

<sup>91</sup> Most of the options that follow can be envisaged both at the national and multinational level.

<sup>92</sup> In fact there are currently no national programmes for airlift assets; there are a few programmes for sealift assets.

## The A400M programme

Plans for the Future Large Aircraft (FLA) have been underway for almost two decades. The programme was renamed into A400M in 1998 when it was taken over by Airbus Military Company (AMC).<sup>93</sup> The A400M is intended to replace, by the end of this decade, the fleets of C-160 *Transall* and C-130 *Hercules* currently in service in Europe. As presently agreed, the first flight is scheduled for 2006 and the first delivery for 2008. The A400M Memorandum of Understanding (MoU) covers the purchase of the new military transport aircraft by AMC. This agreement commits eight countries – Belgium, France, Germany, Luxembourg, Portugal, Spain, Turkey and the United Kingdom – to buy a total of 196 aircraft in a single launch order.<sup>94</sup> The contract to purchase the aircraft was signed in Brussels in December 2001 between AMC and the Organisation for Joint Armaments Cooperation (OCCAR), which will manage the programme on behalf of the participating nations. The eight partner nations will pay a total of about 18 billion for the whole contract.

The A400M is designed to satisfy a European requirement for rapid, reliable air mobility for force deployment and humanitarian missions – personnel, equipment, supplies; airdrop capability; and air-to-air refuelling as a receiver and as an in-theatre tanker. This transport aircraft will aim at providing both strategic and tactical mobility to all three services in peace, crisis and war. In crisis or war, the A400M will be employed on inter- and intra-theatre air transport tasks,

primarily in support of the ERRF.

As currently designed, the A400M will be able to transport twice the weight and twice the volume of the C-130J, with only slightly higher lifecycle costs.<sup>95</sup> In comparison with the C-17, the A400M can transport two-thirds the volume of the American airlifter and half of its average payload at less than half its price and a third of its life-cycle costs.<sup>96</sup> As an example, the aircraft will be able to carry a maximum of 35 tonnes of cargo<sup>97</sup> over 3,700 km,<sup>98</sup> that is about two *Apache* helicopters or two *Tiger* assault helicopters.<sup>99</sup> In terms of its cargo compartment, the A400M is closer to the C-17, with 23 metres in length (compared with the C-17's 26 metres) and 3.85 metres in height (compared with the C-17's 3.76 metres). It is spacious enough to carry a Super Puma tactical helicopter that is in service with several European armies. However, the A400M may not be able to transport certain equipment which is too heavy or too large in volume, such as a main battle tank or other out-size military payloads.

The A400M is a collaborative effort involving the governments and industry of eight European countries. Besides the potential savings from economies of scale due to the larger production runs, this multinational effort could also contribute to the coordination and more efficient use of the air transport and air-to-air refuelling assets of partner nations. It could also potentially enhance the deepening of cooperation among them, not only in terms of employment, but also in terms of support – logistics, training of personnel and other areas.

<sup>93</sup> With 64 and 25.5 per cent respectively, Airbus and EADS are the biggest shareholders of AMC. The other shareholders are TAI (Turkey) with 5 per cent, Flabel (Belgium) with 4 per cent and Ogma (Portugal) with 1.5 per cent.

<sup>94</sup> The aircraft commitments are as follows: Germany (73), France (50), Spain (27), the United Kingdom (25), Turkey (16), Belgium (5), Portugal (4) and Luxembourg (1, as part of the Belgian Air Force). Italy had originally participated in the programme with an order of 16 aircraft, but reversed its decision in October 2001.

<sup>95</sup> John E. Peters, Stuart Johnson, Nora Bensahel, Timothy Liston and Traci Williams, *European Contributions to Operation Allied Force: Implications for Transatlantic Cooperation*, MR-1391, Prepared for the United States Air Force (Santa Monica, Calif.: RAND, 2001), p. 65.

<sup>96</sup> Source: AMC.

<sup>97</sup> This puts the A400M between the C-130 and the C-17 in terms of capacity.

<sup>98</sup> The A400M can cover 6,500 km with a 20-tonne load and 4,500 km with a 30-tonne load. Source: Assembly of WEU (2001), op. cit., p. 8.

<sup>99</sup> A400M load capability: 6 Land Rovers and trailers; or 1 *Cougar* helicopter; or 2 attack helicopters; or 1 infantry combat vehicle; or 1 mobile crane; or 2 5-tonne trucks and 2 105mm guns (Source: AMC).

Despite the strong rationale of potential long-term benefits from the programme, because Airbus is an international consortium, the decision to proceed with the A400M is likely to be as political as it is financial/industrial. Therefore, it is not clear whether the programme will progress as planned. Up to now, the programme has met a series of setbacks and delays due to political obstacles.

Among the biggest problems of the programme has been the inability of Germany, for budgetary reasons, to firm up its contract for all of the 73 aircraft it has agreed to purchase. After several delays and objections, the German Bundestag finally authorised, in March 2002, 5.1 billion in the 2002 budget to finance the equivalent of about 40 aircraft. The German government made a political commitment to finance the remaining aircraft, which it is estimated will cost around 4.4 billion, from the 2003 budget,<sup>100</sup> which will not be decided before the end of 2002. A potential failure by Germany to obtain adequate funding for its entire order would affect both the contract price and work-share arrangements among partner nations. Under the contract negotiated with Airbus, there is a sliding scale of prices for orders between 180 and 230 aircraft. A substantial reduction of Germany's order would force a reopening of price negotiations. Also, a German withdrawal would require a redistribution of the work share among the remaining partners.<sup>101</sup>

Besides funding problems, one of the most critical questions regarding the A400M is whether this aircraft is the most suited to European lift requirements. If one assumes that the EU will participate militarily in both high-intensity and far-removed (from its territory) operations, then it will need both heavy/outsize and long-range airlift. The current design specifications of the A400M indicate that it will not be built to

transport outsize equipment. Also, it may give more range and capacity than the C-130 and the C-160, but not quite as much as the C-17. In other words, the A400M is not likely to be sufficient to satisfy Europe's lift needs as an expeditionary force. Nevertheless, this programme indicates that European nations have identified their weakness in power projection capabilities and are doing something to overcome it. The A400M will satisfy part of Europe's expeditionary lift needs; it will be an important, though partial, solution to Europe's airlift deficiencies, but is also of major significance to the European aerospace industry, with considerable social and economic consequences for many European nations.

#### OFF-THE-SHELF PURCHASE AND LONG-TERM LEASING<sup>102</sup>

Several European countries have been planning to purchase off-the-shelf or to lease foreign military assets: France has expressed interest in acquiring Boeing C-17 transport aircraft, while Germany has been considering the Russian/Ukrainian Antonov An-70. Off-the-shelf purchase of American transport aircraft is part of a proposal that will be presented by NATO Secretary-General Lord Robertson to Alliance leaders at NATO's November 2002 summit in Prague. The proposal will be that European nations rapidly acquire Boeing C-17 and Lockheed Martin C-130J transport aircraft as a stopgap measure until the multinational A400M enters service.<sup>103</sup> At the same time, the US government is seeking support for a Boeing-Lockheed proposal to furnish Europe with a mix of C-17s and C-130Js.<sup>104</sup>

France and the United Kingdom are already considering such an option. France includes off-the-shelf purchase of American transport air-

<sup>100</sup> Georges Marion, 'L'Allemagne Débloque le Financement de l'Avion de Transport Militaire A400M', *Le Monde*, 22 mars 2002.

<sup>101</sup> Alexander Nicoll, 'Legal Doubts Threaten to Delay A400M Deal', *Financial Times*, 17 December 2001.

<sup>102</sup> Leasing encompasses terms such as 'renting' and some forms of 'chartering'. For the purposes of this paper, chartering is included under the short-term leasing options.

<sup>103</sup> Gordon, op. cit.

<sup>104</sup> Vago Muradian, 'Robertson: NATO Should Consider C-17, C-130J Fleet As Stopgap Until A400M', *Defense Daily*, 11 April 2002.

craft among the alternatives that it is exploring in case the A400M project does not go through. France is looking at a combination of C-17s, to serve as outsize airlifters, and C-130Js, for tactical and medium-size lift, in quantities that will offer a combined capability equivalent to that of the 50 A400Ms ordered. Such a solution would probably have lower acquisition costs than the A400M but higher operating costs, due to the use of two different types of aircraft and the C-17's high maintenance costs.<sup>105</sup>

The United Kingdom too is looking into leasing (or buying) more US-made transport aircraft, as part of contingency plans in case the long-delayed A400M programme slips further.<sup>106</sup> Long-term leasing is an option that allows control of the assets, quite similar to ownership. Leased assets can be owned by the aircraft- or shipbuilder, a bank, national government or other entity. The assets are operated by the lessees, who also provide the crews, fuel, and maintenance. The RAF has leased four C-17s from Boeing for seven years, with two one-year extension options, making a total of nine years. Now Britain is looking into leasing two more of the giant aircraft and wants to extend its current lease by two more years.<sup>107</sup> The aircraft lease is a commercial deal between Boeing and the British government, with deliveries that started in mid-2001. Even if the A400M enters service on time in the United Kingdom, the RAF may face a shortage of transport aircraft at the end of the decade. Therefore, defence chiefs are said to be examining leasing or buying five C-17s and 10 to 20 Lockheed Martin C130Ks (the latest version of the Hercules) to avoid the shortage. According to British defence officials, a rival bid from

British charter operator Air Foyle,<sup>108</sup> which offered Antonov An-124 transports through a cheaper package than the C-17s, was deemed too risky. The MOD currently leases An-124s from Air Foyle for emergency, large-scale deployments (it did so during the early stages of the Afghanistan campaign), but could not obtain sufficient guarantees that the Russian/Ukrainian-built aircraft would always be available when required.<sup>109</sup>

Besides interest in the C-17 by some EU countries,<sup>110</sup> the EU itself is considering a proposal by Ukrainian authorities to lease some of their heavy-lift aircraft for use by the ERRF. Ukraine has a fleet of 76 Ilyushin and 40 Antonov transport planes, which are leased out for humanitarian missions, while the EU is looking to plug an important gap in the ERRF's air transport capabilities. Negotiations regarding the chartering of large transport aircraft — mainly An-124s — for Petersberg missions had originally been undertaken between the Ukraine and WEU, which signed a cooperation agreement in June 1997. Recently, the Military Committee of the EU has requested that these negotiations be restarted with the objective of establishing a framework agreement for peacetime which would define the types, quantities and times for making available pre-selected aircraft.

However, the lease of foreign assets is regarded by many European policy-makers as only a short-term or stopgap measure to cover the current shortfall in lift capabilities. The long-term solution to Europe's shortfalls has to be a European one — such as, in the case of airlift, the A400M or, in the case of sealift, the British ro-ros currently being built.

105 According to estimates by the French Air Force and DGA (Délégation Générale de l'Armement), cited in 'Prévention et projection', Texte du Rapport de Première Phase IHEDN, 52ème Session Comité 5, janvier 2000.

106 Dominic O'Connell, 'MoD Eyes American Planes', London *Sunday Times*, 17 March 2002.

107 Vago Muradian, 'Defense Daily', 12 April 2002.

108 Air Foyle is the airline that markets Antonov An-124s in Western Europe.

109 John D. Morocco, 'UK's Tilt Toward Europe Poses Multiple Challenges', *Aviation Week and Space Technology*, 22 May 2000.

110 The C-17 is particularly popular among several European nations due to its ability to carry a significantly larger payload as well as very heavy and outsized cargo — such as helicopters and armoured vehicles — over a longer distance than the A400M. Outsized cargoes cannot be carried by the Europeans' current fleets of C-130 *Hercules* aircraft. However, the implications of pursuing the purchase of this aircraft from the United States as a unique option could potentially diminish Europe's future ability to produce an indigenous military airlifter. Moreover, it would take a substantial order away from a European manufacturer, Airbus Military Company.

### 3.1.2 Short-term policy options

#### SHORT-TERM LEASES AND CHARTERING

In principle, the availability and capacity of strategic lift is best assured when planners depend exclusively on lift assets controlled and operated by the military. For a guaranteed, rapid-response capability, dedicated military airlift and sealift are vital. Given the range of possible missions of the ERRF, it is unlikely that military assets available to EU nations will be sufficient.<sup>111</sup> National military lift available to EU countries is usually in short supply and needs to be supplemented by lift provided from the commercial market or foreign sources.

Suitable civilian assets can be used through short-term leasing or chartering arrangements. Short-term leasing or chartering involves carrier-operated, usually commercial, lift assets that are used by national authorities for military operations. Chartering is most commonly used for sealift assets. In the case of airlift, systematic large-scale recourse to civil assets and capabilities presents more difficulties because of the commercial constraints of airlines.<sup>112,113</sup>

Short-term leasing offers several economic advantages,<sup>114</sup> primarily by helping national authorities to save the costs of procuring and operating their lift assets during peacetime and thus by freeing up more resources to modernise combat equipment. Furthermore, in the case of airlift, civilian aircraft have a significantly long un-refuelled range, which reduces the need for air-to-air refuelling operations, and a large cargo capacity: some of these wide-bodied aircraft can have as much as twice the pallet capacity of the C-17. In addition, the cruising speed of many

civilian aircraft is very high compared with that of military ones. For a 4,000 nautical mile flight, a Boeing 747 takes 7.8 hours to complete the journey, while a C-5 takes 9.3 hours and a C-17, 8.7 hours. Moreover, these time comparisons do not take into consideration the fact that military cargo aircraft slow down for aerial refuelling operations.<sup>115</sup>

Commercial vessels offer similar advantages in sealift but obtaining them may be problematic: it is often difficult to find commercial cargo vessels that can transport military equipment, both because of availability and suitability problems. The availability of commercial lift assets depends on conditions in the international market for such assets. That market is usually unpredictable and influenced by several variables, such as market conditions, profitability considerations, seasonal factors, political will and others. During peacetime, chartering should not be a problem. However, in times of crisis, when the demand for chartering – particularly for sealift assets – increases dramatically, this demand can exhaust the civil market supply. Limitations to the availability of commercial lift assets may also result from the restrictions often imposed by commercial leases with respect to the circumstances in which the assets concerned may be used. For example, commercial operators may be reluctant to allow their assets to be used in hostile environments. Even in cases where participation of civilian assets in such operations is allowed by their owners, the cost of insurance requirements may be prohibitive.

In terms of suitability, most civil aircraft (even the freighter versions) are not large enough to transport heavy and outsize cargo, which can only be transported by specialised

<sup>111</sup> *The Military Balance 2001•2002* (Oxford: Oxford University Press for the IISS, 2001).

<sup>112</sup> 'Prévention et projection', Texte du Rapport de Première Phase IHEDN, 52ème Session Comité 5, janvier 2000.

<sup>113</sup> The US military has relied extensively on chartered ships as recently as in Operations *Desert Shield* and *Desert Storm*: it contracted 29 US-flag and 162 foreign-flag dry-cargo (ro-ro) vessels, which transported 30 per cent of combat and support equipment during the first phase of the deployment and more than 50 per cent during the second phase (Ronald Rost, John Adams, and John Nelson. *Sealift in Operation Desert Shield/Desert Storm: 7 August 1990 to 17 February 1991*, CRM91-109 (Alexandria, VA: Center for Naval Analyses, May 1991), pp. 30-1; cited in CBO, op. cit).

<sup>114</sup> Many of these advantages apply to long-term leasing as well.

<sup>115</sup> Jerry D.Harris, Jr., Major, 'Civilian Reserve Air Fleet: Should the USAF Use it Routinely?', AU/ACSC/0519/97-03, research paper presented to the research department, Air Command and Staff College, March 1997, pp. 18-19.

military equipment. In addition, although they have a long range without refuelling, most civilian aircraft are not capable of air-to-air refuelling. Extremely long distances will require stop-over airfields that are equipped and maintained to handle large aircraft, and probably additional aircrews to deal with refuelling. In sealift, not all ro-ro ferries and freighters in circulation are suitable for transporting vehicles.

#### CONTRACTS AND OTHER AGREEMENTS BETWEEN GOVERNMENTS AND COMMERCIAL CARRIERS

##### Requisitioning, call-off and dormant contracts

This option refers to agreements between governments and commercial carriers for the latter to provide air- or sealift capabilities to support military operations. In this case lift assets acquired and owned by a national commercial carrier (for example a national airline) can be requisitioned by national authorities to be used in a time of crisis. Such an option requires European nations to create the necessary organisation and arrangements for the military use of commercial air- and sealift assets, as well as for the availability of specialised air and seaport reception handling equipment when needed. The legal aspects of the use of civil transportation and reception assets should be established through contractual arrangements and/or emergency legislation. Such arrangements include 'call-off' and 'dormant' contracts between national governments and commercial contractors (public or private enterprises) that are potential suppliers of required items and services in times of crisis. The contracts stipulate

that specific assets and capabilities owned by the contractors, such as commercial cargo aircraft or ships, will have to be made available to the national authorities under certain conditions and within specific time delays.<sup>116</sup>

In the European context, the definition of regulations regarding access to civilian assets by governments in times of crisis needs further development. While many EU nations have in place legal provisions for requisitioning assets in Article V contingencies (that is, they have the authority to call on commercial assets in such cases), almost none of them have provisions for non-Article V operations. In the latter case, most nations do not have the authority to requisition civilian assets.<sup>117</sup>

Although it is a valuable option to have in times of crisis, requisitioning does not guarantee timely availability of the assets in question, which may at the time of requisition be engaged in other missions and therefore not be immediately available. For countries that rely on rapid reaction forces and require immediate access to lift assets – such as the United Kingdom – the value of such contracts with civil companies might not be very high;<sup>118</sup> on the other hand, Nordic countries, which do not have high readiness forces, might find such contracts more convenient.

Furthermore, assuming that requisitioning could be used as an option for obtaining lift capabilities to support EU (as opposed to national European) operations, governments would need to enter into agreements – either nationally or multinationally – with commercial carriers to provide air- and/or sealift capability to support EU operations, most probably through some incentive-based system. Implementing such agreements could be complicated by the

<sup>116</sup> Pierre Steyn, Lt-Gen., 'Total Defence: A Danish Concept', <http://www.iss.co.za/Pubs/ASR/ADR17/Steyn.html>.

<sup>117</sup> An example of regulation relevant to requisition of commercial assets is the French Tramin Law of 20 May 1969 on the use of maritime transport for national interest purposes, which obliges French ship owners to make their assets available when needed for the benefit of national interest. The law also gives the French state priority in chartering ships under the French flag. This law, which stipulates commercial-type agreements rather than requisitioning, proved insufficient during the Gulf War, when the crews of two vessels refused to abide by the commitments of the ships' owners. As a result, a decree was issued in January 1991 that authorised the requisition of personnel. Both the 1969 law and the 1991 decree concern only vessels under the French flag, which are gradually diminishing, mainly for fiscal reasons.

<sup>118</sup> The United Kingdom has had varying degrees of success with requisitioning: in the Falklands war requisitioning offered access to valuable sealift assets, while in the Gulf war, the experience was less positive.



absence in most EU nations of legal provisions for requisitioning assets in non-Article V contingencies, which would also be the most common types of cases where the EU would be required to intervene militarily. An additional complicating factor is the great diversity in legal frameworks (where such frameworks exist) among EU countries, which implies a varying ability to obtain assets when needed and should most likely create problems in cases where joint EU military action is required.

### Public-private partnerships

Public-private partnerships (PPP) are long-term relationships between governments and the private sector. The United Kingdom is among the pioneers of PPPs in defence. The British private finance initiative (PFI) is a prime example of the use of such partnerships for acquiring defence (and other) capabilities.<sup>119</sup> The PFI was created in the early 1990s as a way for the British government to obtain value for money by involving private sector management expertise, innovation and capital investment in the delivery of services to the public sector. PFI arrangements allow the spreading out of the funding for assets, while ensuring the availability of assets designed for military lift uses. Under PFI, the government leases a service – rather than investing in equipment and personnel – at a fixed yearly cost for a period of 15 to 30 years. Contractors pay for the construction costs of public sector projects and then rent the finished project back to the public sector. The PFI transfers the responsibility of delivering on time and on budget to the contractor; the latter can lease the equipment and personnel to other customers to generate extra income when it is not being used by the Government.<sup>120</sup>

PFI has been used in the United Kingdom for acquiring strategic sealift capabilities. Specifically, the UK MOD decided in 1998 to build 6 ro-

ro vessels funded by a PFI contract over a term of 25 years. These will be owned by a private shipping company that undertakes to make them available to the MOD. Four vessels will be in constant MOD use, while the remaining two will have to be made available at 20 and 30 days' notice when called out by the Secretary of State. The new vessels will be equipped and classed as merchant ships and will be available for commercial trade when not in military use.

PFI-type arrangements could be used by European countries to enhance a commercial fleet of lift assets that would be partly financed by defence budgets and chartered by national authorities in times of need. Shipping or airline companies would own the assets and would undertake to make them available to the armed services at short notice, in return for the long-term funding provided to them. Alternatively, the assets could be owned by the national authorities/air forces or navies and chartered to shipping or airline companies outside crisis periods.

## 3.2 Potential future options

On the topic of deployability and strategic mobility, the WEU Audit of Assets and Capabilities for European Crisis Management Operations suggested that 'a common European approach could be adopted', and that 'coordination designed to make optimum use of existing assets and capabilities, both military and civilian, should be stepped up.'<sup>121</sup> The recommendations of the Audit mention options such as a structured European transport capability or European 'Eurolift' force. At present, in both the NATO and WEU context, providing strategic mobility has been a national rather than collective responsibility. As operations are becoming increasingly multinational, this arrangement is creating more and more problems, ranging

<sup>119</sup> For more detailed information on PPPs and PFI, see the UK Ministry of Defence website at <http://www.mod.uk/business/pfi/>.

<sup>120</sup> Chasing deals can cost contractors several million pounds in the bidding process but that is more than compensated for by the regular income.

<sup>121</sup> WEU Council of Ministers, op. cit., p. 2.

from unnecessary duplication, and the costs it entails, to the fact that the presence of so many different units might actually inhibit force mobility.<sup>122</sup>

Among the primary reasons why a European force needs collective or integrative options for acquiring and providing strategic transport capabilities is the problem of limited financial resources. Many European defence budgets are stagnant and do not show any prospects of significant increases. As a result, individual nations are finding it increasingly difficult to afford sufficient levels of certain capabilities or to sustain all their military capabilities individually.

Several innovative approaches and mechanisms are available for consideration in order to spend European defence budgets more efficiently and build new, or improve on existing, European capabilities. Integrative options, such as cooperative use – when a nation makes its lift available to other nations, either directly or through a third party or organisation – or shared use – when a nation makes its lift available to a military structure (for example, the ERRF) are among these approaches. Pooling is a prime example of an integrative option.

### 3.2.1. Pooling of assets and capabilities

One of the most common integrative options for building or enhancing military capabilities is the pooling of assets and capabilities belonging to individual nations. This option implies that different nations pledge or make available their assets to a common pool, managed jointly by participating nations and used for joint operations.

Pooled capabilities can generate several

advantages over national ones. First, economies of scale<sup>123</sup> can be achieved through the integration of capabilities, which helps increase military effectiveness and makes improved capabilities more affordable. Some of the benefits of economies of scale are reduced personnel and manpower support costs, savings created in outsourcing – through larger contracts – and savings on procurement. With respect to procurement, when pooled forces need to choose successor equipment, it may also be easier for them to agree on a common requirement. When such a requirement is produced, production runs will be larger, and therefore unit prices will be reduced. From an economic point of view, pooling and integrating capabilities can also increase the efficiency of European defence expenditure, by providing more effective capability at lower cost. Duplication of headquarters, planning, training, logistics, support, procurement, research, bases and other facilities creates redundant costs, support overheads and other inefficiencies, which could be reduced or avoided altogether through more efficient spending.

Second, pooling results in more effective use of limited capabilities and allows nations to obtain and maintain capabilities and expertise that they could not otherwise afford individually. Pooling offers opportunities for innovative approaches to making up for capability shortfalls and operational requirements. For example, countries can compensate for each other's shortcomings by pooling their assets.<sup>124</sup> Pooling resources allows smaller EU countries (or even non-EU nations) with modest military capabilities to contribute to specific military operations, thereby enabling a more equitable burden-sharing at the EU level and helping to reduce overstretch of some forces.<sup>125</sup>

Finally, pooling also allows countries to

<sup>122</sup> Lutz, *op. cit.*, p. 70-1.

<sup>123</sup> Economies of scale imply the ability to obtain more capability for the same level of resources, or the same capability for fewer resources.

<sup>124</sup> An example of compensating for each others' shortcomings is the agreement reached between the Netherlands and Germany, whereby the Netherlands will contribute up to \$2.5 million to the enlargement of the German strategic airlift fleet. In return, the Netherlands will have the opportunity to draw upon German strategic aircraft. This agreement will allow financial savings, as the high cost and slow leasing of commercial transport aircraft would become unnecessary (Source: 'Interim Report: Building European Defence: NATO's ESDI and the European Union's ESDP', NATO Parliamentary Assembly Report AT-247-DSC-00-7, November 2000).

<sup>125</sup> Ministry of Defence (2001), *op. cit.*

retain sufficient sovereignty and say as regards their own units, since they are able to withdraw their capability from the integrative structures, for example, in cases where their individual national interests diverge from those of the group.

An important condition for achieving the benefits of pooling is the existence of a centralised command and control structure capable of preparing, coordinating and controlling operations, including prioritising movements, and acquiring and allocating assets during an operation.<sup>126</sup>

Despite its many advantages, successful pooling can be compromised by several obstacles. These include coordination and cooperation problems due to friction among nations; inefficient decision-making structures; and the potential need for compromise on a lower standard, because of widely divergent national operational standards. These problems, combined with domestic politics, cultural differences and other factors, make it difficult to benefit from the, theoretically favourable, economics of cooperation (such as economies of scale and other elements).

In contrast to national solutions, a multinational solution such as pooling requires nations to compromise their national autonomy. For some countries – mostly the larger ones, which have most of the necessary lift assets and capabilities – the cost savings and other benefits of pooling may not outweigh the cost of lost autonomy. Countries wishing to retain their essential national requirements and capabilities may see integrative solutions as a threat to them. Such national capability and sovereignty concerns may put in doubt the political feasibility of the pooling option by making nations reluctant to release their assets for use by the pool. Furthermore, some nations may opt out of

specific operations. The implications of withdrawal of a nation's contribution from a pooling arrangement are more serious the more integrated the structure of the arrangement. Withdrawal could compromise the effectiveness of the structure or even, in the worst case, render it non-operational.<sup>127</sup> Overall, issues of national sovereignty over individual countries' national assets and units constitute the biggest impediment of all to the pooling of assets in whatever form.

### 3.2.2 Role specialisation

A pooling approach such as that described above could lead to a certain degree of role specialisation, in which EU countries would concentrate on the functional roles and responsibilities at which they are best – a kind of international division of labour by tasks (e.g. lift, C4I, logistics) or by type of unit (e.g. artillery, infantry, etc). For example, in the case of strategic lift, some countries could provide aircraft or sealift vessels and crews, while others would provide logistics and support (for refuelling transport aircraft or for replenishing troops and equipment after their transport).

Role specialisation may not do away entirely with 'unnecessary' duplication, but it may improve effectiveness and foster consolidation across the (EU) board. However, role specialisation is a long-term option: it presupposes, entails and eventually requires a higher level of political integration and/or a substantial lack of territorial threats; either condition (or both) may not be acceptable or applicable to all present and future member states.<sup>128</sup> Furthermore, role specialisation requires close coordination if it is not to open up yet more gaps in capability.

Again, neither pooling of resources nor role

<sup>126</sup> More details on such a structure are included in a following section on a European transport command.

<sup>127</sup> Fully integrated multinational units no longer consist of national building blocks but really form a single entity. It then becomes even more difficult to withdraw national participation from such a unit.

<sup>128</sup> Antonio Missiroli, 'Defence Spending in Europe: Is Europe Prepared to Pay for Improved Capabilities?', paper given at the conference on ESDP organised in Paris on 13-15 December 2001 by the Cicero Foundation.

specialisation can be successfully implemented without a closer and more effective coordination of national defence planning processes and an acceptance by national authorities of a higher degree of interdependence among countries. Therefore, some sort of coordinating mechanism is needed.

### 3.3. Advantages and disadvantages of each option

The following table illustrates the main benefits and drawbacks of the policy options examined so far:

**Table 4: Advantages and disadvantages of policy options**

Option	Advantages	Disadvantages
Long-term procurement (production, purchase, long-term leasing)	<ul style="list-style-type: none"> <li>Greatest level of assured access and timeliness/ responsiveness</li> </ul>	<ul style="list-style-type: none"> <li>High cost</li> <li>Reduced flexibility (for example, through potential delays in availability)</li> <li>Maintenance and other logistic support requirements</li> </ul>
Joint production	<ul style="list-style-type: none"> <li>Economies of scale</li> <li>Gains from specialisation</li> <li>Increased affordability for individual nations</li> </ul>	<ul style="list-style-type: none"> <li>Delays (political, industrial reasons, etc.)</li> <li>Coordination issues</li> <li>Commitment issues (e.g. A400M)</li> </ul>
Off-the-shelf purchasing	<ul style="list-style-type: none"> <li>Wider choice<sup>129</sup></li> <li>Less costly than production</li> <li>Speedy acquisition</li> </ul>	<ul style="list-style-type: none"> <li>Specifications may not always fit European requirements</li> <li>Does not support the European defence industrial base and preservation of European technical and industrial capabilities</li> </ul>
Long-term leasing	<ul style="list-style-type: none"> <li>Simpler acquisition than owning</li> <li>Assured access</li> <li>Financial benefits:<sup>130</sup> avoids large initial capital outlay</li> <li>Support structure may be less costly than owning</li> </ul>	<ul style="list-style-type: none"> <li>High cost – more expensive (overall) than ownership</li> <li>Potential leasing restrictions on operational use of assets</li> </ul>
Short-term leasing and chartering (mostly civilian assets)	<ul style="list-style-type: none"> <li>Simpler acquisition than owning</li> <li>Allows long-term control and assured access to assets (similar to ownership) + availability</li> <li>Financial benefits</li> <li>Support structure savings</li> </ul>	<ul style="list-style-type: none"> <li>Expensive option (particularly for long-term charters)</li> <li>Problems with timely access to assets for the early (immediate) deployment phase, but may be adequate for later phases</li> <li>Limited asset availability (depending on requirement) – Harder to take merchant vessels up from trade</li> </ul>

<sup>129</sup> Compared with using the production option.

<sup>130</sup> Financial benefits involve avoiding large up-front capital outlays by spreading the cost of obtaining an asset over an extended period of time. The total cost of a long-term lease is usually higher than the purchase cost, but the option offers financial/cash flow advantages by postponing and spreading out cash outlays.

Option	Advantages	Disadvantages
		<ul style="list-style-type: none"> <li>• Restrictions related to security – not adequate for full range of operational scenarios (e.g. use in hostile environment operations may be restricted)</li> <li>• Potentially high insurance cost for operations in hostile environments</li> <li>• Quality/suitability problems; e.g. limited capability of civil lift assets to transport outsize cargo</li> <li>• Diminished political control through proliferation of flags of convenience</li> </ul>
Government-contractor agreements to use commercial lift assets (requisitioning)	<ul style="list-style-type: none"> <li>• (May be) less expensive than owning or leasing assets (avoid costs of procuring and operating during peacetime)</li> <li>• Assured access to air-, sealift capability provided</li> </ul>	<ul style="list-style-type: none"> <li>• Costly retainer contracts</li> <li>• Problems with timely availability (not always guaranteed)</li> <li>• Reluctance of commercial operators to go into dangerous situations</li> <li>• Suitability problems; e.g. limited capability of civil lift assets to transport outsize cargo</li> <li>• Need for governments to provide strong incentives to attract interest of commercial carriers<sup>131</sup></li> </ul>
Public-private partnerships	<ul style="list-style-type: none"> <li>• Financing (incl. cash-flow) advantages</li> <li>• Advantage from transfer of risk to the private sector</li> </ul>	<ul style="list-style-type: none"> <li>• Need for governments to provide incentives to the private sector</li> </ul>
Pooling	<ul style="list-style-type: none"> <li>• Flexibility – modules can be assembled in many ways</li> <li>• Less costly than national/multinational purchase or lease</li> <li>• Political feasibility due to limited supranational (EU) role; national forces relatively independent</li> </ul>	<ul style="list-style-type: none"> <li>• Coordination, module assembly may be complex</li> <li>• Requirement for nations to act promptly to make committed assets available in a timely way</li> <li>• Sovereignty and concerns over control</li> </ul>
Role specialisation	<ul style="list-style-type: none"> <li>• Potentially greater focus and competence through specialisation</li> </ul>	<ul style="list-style-type: none"> <li>• Politically controversial; division of labour requires large amount of trust, willingness to relinquish national sovereignty</li> <li>• Potential complexity of role integration</li> </ul>

Implicit in these evaluations of alternatives for acquiring strategic lift capability are a set of criteria.

Cost is a major criterion for ranking options. One should distinguish between initial investment (capital outlay) and life-cycle cost, which, in addition to initial capital outlay, includes

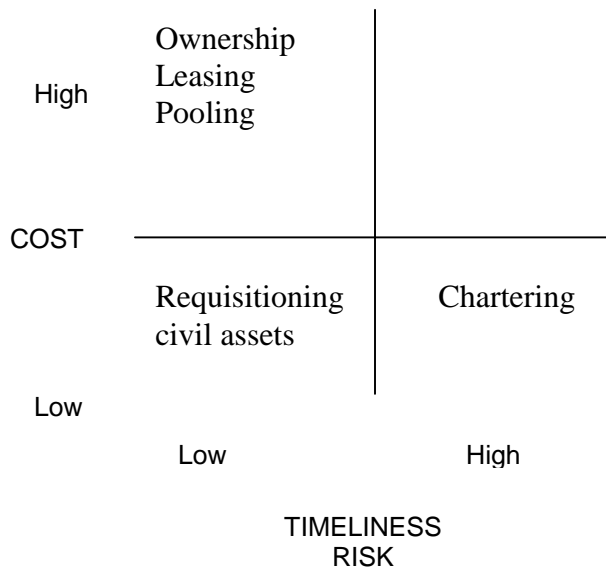
operating, as well as support, maintenance and upgrade costs. This distinction may matter in comparing some options. For example, ownership of strategic lift assets may involve a higher initial capital outlay than leasing, but may ultimately be the cheaper option overall. Leasing, however, offers a cash flow management advantage by avoiding a large, and potentially unaffor-

<sup>131</sup> Some of these incentives, e.g. peacetime compensation, may be looked upon as subsidies.

dable, immediate capital outlay.

Timeliness is another important evaluation criterion. Different policy options for obtaining strategic lift capabilities offer varying degrees of assurance that assets will be available to deploy forces in the required time-scale. A higher degree of readiness and availability for deployment usually goes hand in hand with higher cost. For example, leased or owned assets have a minimum risk, but are also the most expensive

options available. On the other hand, chartering on the open market is often the cheapest option but also bears the highest risk of non-availability in time for rapid deployment. The following diagram illustrates the relationship between cost and the risk that assets will not be available when required (the 'timeliness risk') and the corresponding positions of some of the policy options:



Although timeliness is crucial for lift assets, suitability is also a critical factor: lift capabilities have to be capable of transporting the assets that will be used for a particular operation. Commercial ships and planes are not always perfectly suited to a nation's military needs. Most commercial airlift options may not be able to transport outsize military cargo. A similar situation may arise with respect to certain commercial ships. In addition, commercial operators may be more reluctant to allow their assets to be used in hostile environments. Other factors to take into

account are management complexity, political feasibility and legal considerations.

Overall, given the mix of advantages and disadvantages of different options, an approach that uses a combination of options to meet different strategic lift requirements (for example, immediate vs. rapid lift, regular vs. outsize lift) may be desirable. In addition, different options may be desirable for sealift than for airlift. The following table illustrates the main benefits and drawbacks of the policy options examined so far.

## Conclusions

This section of the paper will summarise the current state of European capabilities in strategic lift, explore where Europe should be heading in the long term in terms of its strategic transport capabilities and suggest short-term measures to cover European needs in the meantime.

### 4.1 *How does Europe currently stand?*

As this paper has revealed, there is valid concern that Europe's strategic lift capability is not sufficient to meet its global commitments. Due to worsening airlift and sealift shortfalls, European nations may no longer be capable of deploying their forces to the areas they need to in the numbers or time frame essential for success. Although several European nations have made improvements to their airlift and sealift capabilities since the end of the Cold War, they still lack the ability to deploy large amounts of equipment and personnel beyond national borders. Europeans also lack an organic airlift capability, since all their transport aircraft come from the United States or other foreign countries.<sup>132</sup> Recently, decision-makers have recognised their weaknesses and have taken steps to remedy them. For example, European nations are planning on building their own A400M airlifter; France, Italy and the United Kingdom, are considering purchasing or leasing heavy-lift American aircraft; the United Kingdom is building six ro-ro ferries to add to its sealift capabi-

lity. If these undertakings materialise, the next several years will provide enhancements to European airlift and sealift fleets.

### 4.2 *Where should Europe be heading in the long term? A 'European Transport Command'?*

The idea of a 'European Transport Command' is not new. According to General Klaus Naumann,<sup>133</sup> the EU should establish a sea command and an air transport command, to manage the lift needs of the ERRF and to provide air-to-air refuelling. This combined mobility centre would be a one-stop-shop institution that would coordinate all European transport needs, formulate a European transport doctrine, coordinate the acquisition of additional lift capability (for example, by leasing foreign lift assets) as well as performing other functions.

A joint European command could significantly strengthen European lift capabilities by achieving economies of scale and synergies that small national contributions could not achieve on their own. A European transport command embracing both airlift and sealift could have control over multinational formations, such as an EU squadron of transport planes, or task forces formed by pooling national assets. Such a transport command could coordinate future procurement of transport aircraft or review and improve arrangements for military use of com-

<sup>132</sup> John E. Peters, Stuart Johnson, Nora Bensahel, Timothy Liston and Traci Williams. *European Contributions to Operation Allied Force: Implications for Transatlantic Cooperation*, MR-1391, Prepared for the United States Air Force (Santa Monica, Calif.: RAND, 2001), p. 64.

<sup>133</sup> Klaus Naumann, 'Europe's Military Ambitions', Centre for European Reform, *CER Bulletin*, Issue 12, June/July 2000, [http://www.cer.org.uk/articles/n\\_12\\_2.html](http://www.cer.org.uk/articles/n_12_2.html).

mercial lift assets, for example by negotiating collective chartering deals on behalf of different EU countries. A joint transport command would be even more effective if European countries decided to purchase common (or compatible) lift assets and agreed on joint logistics, training and maintenance for these. In airlift, for example, the planned procurement of the A400M should increase the effectiveness of a potential future European air transport command.<sup>134</sup> The pooling of these elements at European level would not only enhance operational efficiency but also provide significant life-cycle cost savings.

Given that military transport is a capability that is less politically sensitive (less linked to national sovereignty) than others, such as, for example, combat aircraft or C4ISR,<sup>135</sup> implementing such an integrative European structure would be less likely to run into major political obstacles. For that to be assured, however, a joint European transport command should allow individual countries to retain ownership of their national assets, and to reserve the right to withdraw them in the case of a national emergency.<sup>136</sup>

### *4.3 Building on existing cooperation/coordination structures*

This European transport command should build on existing bi- and multilateral cooperation and coordination structures and arrangements within Europe. Many initiatives involving pooling of assets and capabilities are being developed in Europe in various areas due to the advantages they offer in an environment where resources are limited. In the field of strategic and tactical mobility there are several structures

within the EU that could serve as a basis for developing more comprehensive solutions to the problem of European strategic lift. Some of the most important such structures are presented here.

The European Air Group (EAG) came into being on 1 September 1995 through an agreement between the British and French air forces, with the objective of promoting and enhancing cooperation in the area of air operations. The organisation was joined by Italy in 1998, Belgium, Germany and Spain in 1999 and the Netherlands in 2001. The air forces of the seven participating members represent a significant part of the European capability in air operations. The fundamental objective of the EAG is to improve cooperation and interoperability between the participating air forces and to develop innovative solutions for optimising their capabilities over a wide range of air power issues such as logistics, air operations, communications and the protection of air bases. At the moment, the focus of the EAG is on cooperation in the field of air transport and air-to-air refuelling operations. Specifically, the group is tasked to find new approaches to help alleviate the shortfall in European airlift capability.

The EAG has no assets of its own. For a given operation, assets will be drawn from contributions by the air forces of the participating nations. Cooperation within the EAG actually encompasses more than just the pooling of assets. Combining many diverse systems into a composite force requires significant work, for example, in the field of exchange of knowledge, the development of joint tactics and procedures. The EAG aims at significantly improving the operational capabilities of its member air forces by stimulating mutual understanding between them and promoting deeper cooperation and interoperability over a wide range of air power issues.

<sup>134</sup> Peters et al., op. cit., p. 65.

<sup>135</sup> C4ISR: Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance.

<sup>136</sup> Christoph Bertram, Charles Grant and François Heisbourg. 'European Defence: The Next Steps', Centre for European Reform, *CER Bulletin*, Issue 14, October/November 2000, [http://www.cer.org.uk/articles/issues14\\_bertram.html](http://www.cer.org.uk/articles/issues14_bertram.html).



Two other important initiatives at the level of the seven EAG participating nations have originated from the EAG: these are the European Air Transport Coordination Cell (EACC) and the Air Transport and Air Refuelling Exchange of Services (ATARES) agreement. The EACC is aimed at optimising air transport capabilities through enhanced coordination and rationalisation of troop transport. The structure was established in September 2001 and was expected to be fully operational by May 2002.<sup>137</sup> The EACC comprises personnel from all European Air Group air forces, who contribute to the coordination and efficient use of current and future air transport and air-to-air refuelling assets available to the EAG nations.

The ATARES agreement (2001) aims at allowing the exchange of air transport and air-to-air refuelling services among participating nations, based on an elaborate compensation mechanism. ATARES is not a financial exchange, but an exchange of services among participating nations. It functions similarly to a stock market, with some countries placing calls for offers, depending on their needs, and others offering their services. For example, the Belgians do not possess an air-to-air refuelling capability; ATARES permits them to obtain a specific number of hours of air-to-air refuelling in exchange, for instance, for hours of transport. ATARES would be particularly valuable during crisis situations requiring immediate action by one or more nations.

Another European integrative structure in the same field is the German-Netherlands Air Transport Arrangement, according to which<sup>138</sup> the Netherlands has paid Germany drawing rights on its air transport capability. Specifically, the Netherlands has earmarked € 45.4 million to contribute to the strengthening of the strategic air transport and air-to-air refuelling

capabilities of the Bundeswehr in support of international operations. In return, Germany will provide strategic and tactical air transport services and medical air evacuation services to the Netherlands Armed Forces in the amount committed without reimbursement.

While not the solution to Europe's strategic lift shortfalls, structures such as the EAG, EACC and others could be part of a systematic way of arriving at such a solution, assuming that they are consolidated and integrated in a systematic way. In other words, these structures are useful as starting points; they should be clarified and used as building blocks for a broader, more comprehensive framework that will manage European strategic lift capabilities.

Initially, small steps could be taken to expand either the functions or reach of these structures.<sup>139</sup> For example, the EAG could be turned into a brokerage agency for pooling; the Dutch-German transport agreement, initially focused on tactical transport, could be extended to strategic lift; the scope of the EACC could be expanded, for example, by using EACC to support real-time crisis response operations. Finally, similarly to the EACC, a European sealift coordination cell could be established to enhance the optimum management of the European fleet of transport vessels. Such a cell could maintain a database of characteristics and a tracking system of existing sealift assets – military and civilian – in order to be able to coordinate access to them at all times. All these are different steps that can already help set in motion the process of building an integrated, coordinated and consolidated European strategic lift capability. These steps will require a gradual approach but could strongly enhance the substance and the success of existing structures.

<sup>137</sup> The technical agreement on the creation of the EACC was signed on 28 February 2002, during the official inauguration of the cell.

<sup>138</sup> The 'German-Netherlands Memorandum of Understanding on Mutual Cooperation to Reinforce European Air Transport Capacities' was signed by the Minister for Defence of the Federal Republic of Germany and the Minister for Defence of the Kingdom of the Netherlands in Brussels on 14 May 2001.

<sup>139</sup> The following ideas are based on an interview of the author with William Hopkinson (April 2002).

#### 4.4 *How would pooling work in practice?*

A 'European Transport Command' would be in charge of managing a European pool or pools of lift assets. According to Timothy Garden,<sup>140</sup> one could envision a European pool of transport aircraft/naval vessels that would be operated on a similar basis to the NATO AWACS airborne radar aircraft. AWACS is a supranational early warning aircraft force fielded by NATO, because the capability is too expensive for smaller nations. NATO operates a fleet of 17 AWACS through a pooling system, although the aircraft themselves are technically owned by Luxembourg. The AWACS force has successfully provided an airborne early warning capability to NATO members at lower operating costs than would have been the case if operated on an individual national basis.<sup>141</sup>

Another example of pooled resources, in this case, logistics and support, is the Nordic Common Logistic Battalion, which supported the troops of four Nordic countries – Denmark, Finland, Norway and Sweden – in SFOR and IFOR.<sup>142</sup> Among the reasons that make the Battalion successful in practice is that it operates under detailed agreements on how responsibilities are allocated among the four countries and sets clear limits for resupply (in terms of days), so as to ensure basic standards.<sup>143</sup>

In a European transport pool, the pre-committed pools of ships and aircraft would be promptly available to transport personnel, equipment, and supplies of EU forces participating in operations. Such pools could be supplemented when needed by additional national or privately owned assets (e.g. by airlines). The quantity and timing of the contributions and the conditions of use would be specified in advance. Nations would be responsible for ensu-

ring that the assets they had committed were promptly available within the specified time frame and that they were ready for tasking/deployment (which would mean that issues relating to appropriate training, insurance etc. would have been dealt with). National strategic transport assets could be pooled at the European level, without endangering national sovereignty – a government would be able to withhold or withdraw its contribution to satisfy a national military requirement.

In an initial phase, this would be coordination of capabilities, not integration – although the latter would entail greater gains in efficiency. A first step in such an effort at rationalisation would be to identify a type of aircraft or naval vessel that was common to many EU member states. For example, the 15 EU nations among them have about 140 C-130 transport aircraft and 20 LPDs. These common transport types could be pooled and operated jointly to offer enhanced availability at lower cost, particularly to smaller nations with limited lift capabilities. Some of the C-130s should be replaced by the A400M when it comes into service, but in the meantime a *part* of the existing fleet of C130s could be pooled to provide, in the short-term, a European transport capability. In the case of sealift, pooling of transport ships could be done in a similar way, particularly since many of these vessels are leased and therefore easier (politically) to pool. In addition to providing a much-needed lift capability to be used both for European operations and within NATO, such common transport pools would create savings in operating costs both at the national level (reduction of duplication through the potential reduction of manpower and adoption of common training and maintenance procedures, headquarters, bases) and at the European level. The extent of savings would depend largely on the

<sup>140</sup> Timothy Garden, 'European Air Power', Conference Paper, Netherlands Defence College, RNLA Airpower Colloquium 2001, 7 May 2001; idea also put forward in Michael Alexander, and Timothy Garden, 'The Arithmetic of Defence Policy', *International Affairs*, vol. 77, no. 3, July 2001, pp. 509-29.

<sup>141</sup> Timothy Garden, 'Can NATO Afford to Modernize its Airlift Assets?', Conference Paper, Military Airlift Conference, Washington, 12 December 2000.

<sup>142</sup> SFOR: Stabilisation Force in Bosnia and Herzegovina; IFOR: Implementation Force in Bosnia and Herzegovina.

<sup>143</sup> Lutz, *op. cit.*, p. 71.

degree to which each nation felt able to rely on the supporting infrastructure provided by a European facility.

In the long run, the achievement of significant cost savings would require integration rather than simple coordination or on-call multinational arrangements. Integration would presuppose that individual countries were willing to rely on a common rather than national infrastructure for their strategic transport needs. The airlift and sealift fleets would have to be able to operate as both common and national elements; however, during an EU-led operation they would have to be managed from a single headquarters; and have a single planning, servicing and logistics organisation to support them. The cost of managing such fleets should be lower than that for each nation trying to operate a very small fleet of large and expensive aircraft or ships. Unless headquarters, bases, training etc. are also pooled in addition to equipment, achieving real savings may prove to be an elusive goal.

Depending on the success of such arrangements, the management and operation of a common fleet of airlift or sealift assets could potentially lead to a common perception among participating nations of the characteristics of the next generation of transport assets and capabilities. Harmonised perceptions of future needs could lead to reduced duplication in R&D and procurement costs and increase the prospects for common procurement programmes for successor equipments (for example, the successor to the A400M). The same pooling mechanism used for existing assets (e.g. the C-130s) could be applied to successor equipment – the A400M as well as any other options for strategic air- or sealift that EU nations may adopt (such as leased or purchased C-17 or Antonov An-124 aircraft). The cost savings would be of a similar nature.

## 4.5 *What should Europe do in the meantime?*

While taking some of the initial steps towards a more integrated European strategic lift capability, EU nations will need to cover existing shortfalls in their capabilities. In the short term, they will most probably have to continue using a combination of the existing options available to them, balancing the advantages and drawbacks of different options against the requirements of each mission.

As presented in a previous section, ‘status quo’ options for Europeans include the use of aging existing airlift and sealift assets until new ones (the A400M, new ro-ro ferries) are available. Aging assets should be updated and maintained in a state of operational readiness. Moreover, given the inability of existing military (or civilian) airlift assets to accommodate needs for long-range or outsize cargo capacity, EU nations will need to continue to lease American, Russian and/or Ukrainian assets (C-17s, An-124s and others) for those needs. American assets could be used as a last resort, albeit at a cost and without any guarantee of their timely availability or even their availability at all. Finally, given the insufficiency of military lift assets to cover the totality of potential European crisis management needs, commercial assets will almost invariably have to be used when suitable, and in contingencies where the environment permits it. The ability to use both commercial and military capabilities should allow for the greatest flexibility while maximising mission accomplishment.

Whatever option or combination of options is selected for acquiring strategic transport capabilities, in both the short and long term, it is essential to coordinate procurement of weapons systems with the lift assets that will be used to transport them. Lift (like other capabilities, e.g.

C4ISR) should not be seen as an isolated matter but as part of a single package that integrates weapons systems and their subsystems with transport and other support elements.

## 4.6 *Final word*

The EU and its members are currently facing a critical gap between the Union's strategic ambitions as a global security actor and the capabilities available for fulfilling those ambitions. In strategic lift, shortfalls exist in both airlift and sealift. The nature of the shortfall is different, however: in airlift it is more an asset gap (insufficiency or inadequacy of existing assets), while in sealift it is more an access gap (the difficulty in accessing suitable, existing assets).<sup>144</sup>

In order to ensure the credibility and effectiveness of ESDP, EU nations must take action to bridge gaps in critical capabilities. Gaps in strategic lift could jeopardise the EU's ability to conduct the full range of missions to which it has committed itself. The EU must either reconsider its missions and related lift requirements or develop the necessary airlift and sealift capability to perform these missions. The former is unlikely in the post-Cold War environment, and the latter promises to be a long and costly task. But if Europe is going to deploy its forces where they are needed and sustain them once they are in place, its key member states will need to make strategic mobility a higher-priority national objective than it is now.

Several options are available to EU nations for improving their existing lift capabilities and building additional ones. The options chosen by EU nations must satisfy two major criteria. First, they must allow EU nations to perform the complete range of missions that are linked to the EU's new global security role. Second, given most EU member states' restricted defence

spending, the chosen options must be affordable, and must help keep costs down. For example, options that help to avoid unnecessary duplication by encouraging pooling of resources and specialisation could increase efficiency and create cost savings. In the short term, European nations will have to use a combination of existing, conventional means for improving their lift capabilities, such as leasing, off-the-shelf procurement or requisitioning. In the long term, however, the most affordable solution to European lift deficiencies is one that requires the pooling and integration of resources under the command and control of a collective entity, such as a European transport command.

Not all options analysed are likely to be as easy, politically, to implement. Many of the existing options described in the previous sections have been used in the past and could be used again, at least in the short term. For example, the leasing or off-the-shelf purchase of foreign assets, although not acceptable in the long term — due to the desire for an organic (European) solution to Europe's lift problems — could be used as an interim solution in the short term. In contrast, integrative options such as the pooling of resources and creation of a joint European transport command are more likely to be politically controversial, at least initially, since they would require European nations to relinquish part of their sovereignty and rely on other nations for important functions such as strategic transport. Nevertheless, strategic transport capabilities are less politically sensitive than, for example, air or naval combat capabilities. In addition, in order to overcome the potential political and sovereignty-related obstacles to implementing integrative policy options it will be critical to ensure that nations participating in pooling arrangements retain the right to withdraw their assets from the pool at any time that their national interest requires it.

<sup>144</sup> That said, there is also an element of asset insufficiency in strategic sealift as well, such as in the case of ro-ro ships.

## Annexe

Lift assets available to EU and non-EU partner nations<sup>145</sup>

Country	Airlift assets	Sealift (incl. amphibious) assets
<b>European Union</b>		
Austria	–	–
Belgium	11 C-130H 2 Airbus A310-200  <i>Planned replacement of 11 C-130 H by 7 A400M</i>	<i>Planned joint procurement with Luxembourg of strategic transport ship: a Rotterdam type LPD (NTBL); projected in-service date: 2007</i>
Denmark	3 C-130H  <i>To be replaced by 3 C-130J-30s delivered at end 2003 (with an option for a fourth aircraft)</i>	–
Finland	–	–
France	2 A310-300 63 C-160 (13 –AG, 46 –NG, 4 –H) 14 C-130 (5 –H, 9 –H-30) 14 CN-235 (tactical used as strategic)  <i>Planned purchase of 50 A400M (start deliveries: 2007/8); at least part of C-160 fleet to be refurbished/upgraded in the meantime; indications of tentative consideration given to lease of small number of C-17s</i>	2 Foudre Class LPD <sup>146</sup> (capacity 470 troops, 30 tanks, 4 Cougar helicopters, 2 Edic LCT or 10 LCM) <sup>147</sup> 2 Ouragan LPD (350 troops, 25 tanks, 2 Super Frelon helicopter or 4 Puma helicopters)  <i>Planned: 2 LPD to replace the 2 Ouragan as of 2004 (capacity: 8 NH-90 type helicopters)</i>
Germany	84 C-160 Transall 7 A310  <i>Requirement for 73 A400M (deliveries start 2008).</i>	1 civilian-owned Germania ro-ro ferry – the military has absolute priority in its use; <sup>148</sup> 4 multi-use 702-type refuelling vessels; 20,240 tonnes (2 in service, 2 as of 2008)
Greece	15 C-130 (10 –H, 5 –B)	–
Ireland	–	–
Italy	5 C-130J 9 C-130 H (+3 in store)  <i>Replacement of C-130H by 12 C-130Js and 10 C-130J-30s (+option for 2 more) under way</i>	2 San Giorgio LPD (350 troops, 30 trucks, 2 SH-3D or CH-47 helicopter, 7 landing craft) 1 San Giusto LPD (same type)
Luxembourg	<i>Committed to purchase 1 A400M to be operated by the Belgian Air Force</i>	–

<sup>145</sup> The EU has welcomed the contributions of a number of non-EU countries that have pledged a wide range of military capabilities to the process and have signalled a willingness to participate in EU-led operations.

<sup>146</sup> LP/D/H: Landing Platform/Dock/Helicopter.

<sup>147</sup> LC/T/M/U/A: Landing Craft/Tank/Mechanical/Utility/Assault.

<sup>148</sup> GAO, op. cit., p. 16.

Netherlands	2 C-130H-30	2 Rotterdam LPD (600 troops, 6 Lynx helicopter or 4 NH-90, 4 LCU or 6 LCA); 1 LPD left as of 2007  Civilian assets: financial contribution to the 6 British ro-ros
Portugal	6 C-130H <i>Commitment to purchase 3 A400M</i>	-
Spain	4 Boeing 707 7 C-130H/H-30 5 KC-130H  <i>Requirement for 27 A400M (deliveries start 2010)</i>	2 Galicia LPD (Rotterdam type; 620 troops, 2,500t or 110 vehicles, 6 LCVP/4 LCU, 4 helicopters)
Sweden	8 Tp-84 (C-130E/H)	
United Kingdom	4 C-17 leased <sup>149</sup> 51 Hercules C-130K/J (26 -K, 25 -J)  <i>Requirement for 25 A400M (2007/8 deliveries) – for replacement of remaining 26 C-130K</i>	1 Ocean LPH w/ 4 LCVP (800 troops, 18 helicopters) 2 LPD Albion in service from 2002-03 (3 EH101 helicopters);  <i>Planned 4 ALSL<sup>150</sup> (LPD similar to Rotterdam type)</i>  Civilian assets: Royal Fleet Auxiliary – 3x24,000-tonne ro-ro, 6x24,000tonne/2,600 LIM ro-ro under construction
<b>Non-EU partners</b>		
Bulgaria	2 Tu-134 2 An-24 5 An-26 6 L-410	2 LSM (150 troops, 6 tanks) + 6 LCU
Cyprus	-	-
Czech Republic	8 An-24/26/30	
Estonia	-	-
Hungary	8 An-26	-
Iceland	-	-
Latvia	3 An-26	-
Lithuania	3 An-26 <i>Plans to augment existing capability by use of domestic commercial airlift assets<sup>151</sup></i>	<i>Potential use of 3 ro-ro-type civilian ships (each capable of transporting 1 light infantry battalion)</i>

<sup>149</sup> The C-17s are called Short Term Strategic Airlifter (STSA) and are considered an interim solution to the airlift problem. They are on a seven-year lease with two optional one-year extensions.

<sup>150</sup> ALSL: Alternative Landing Ship Logistics (medium-sized LPD).

<sup>151</sup> Such assets identified include 2 B-737-200, 1 B-737-300, 3 Yak-42, 2 Saab-2000, 2 Saab-340, 3 Yak-40, 1 ATR-42, 2 An-26.

Malta	-	-
Norway	6 C-130H	-
Poland	10 An-26 <sup>152</sup> 2 An-28  <i>August 2001 contract with EADS CASA for purchase of 8 CASA C-295 to replace An-26 a/c (2003-05 delivery)</i>	5 Lublin LSM (135 troops, 9 tanks)
Romania	6 An-24 11 An-26 2 Boeing 707 4 C-130B	-
Slovakia	2 An-24 2 An-26	-
Slovenia	-	-
Turkey	13 C-130 B/E 19 C-160 D  <i>Commitment for 10 A400M</i>	1 LST (980 troops, 17 tanks, 4 LCVP) 2 LST (400 troops, 18 tanks) 2 LST (200 troops, 16 tanks) 2 LST (600 troops, 11 tanks) 1 LSM (400 troops, 9 tanks) + 3 transport
Ukraine <sup>153</sup>	78 Il-76 45 An-12/24/26/30/Tu-134 Il-78	4 ACV <sup>154</sup> w/ 2 SA-N-5 (30 troops & crew) 1 LST w/ 2/3 SA-N-5 SAM (190 troops or 24 vehicles) 1 LST w/ 2/3 SA-N-5 SAM (300 troops, 20 tanks) 1 LSM (180 troops, 6 tanks)
Russia	354 a/c, incl. Il-76M/MD, An-12, An-22, An-124  Civilian fleet: 1.500 medium- and long-range passenger a/c, incl. Some 350 An-12 and Il-76	1 Ivan Rogov LPD with 4-5 Ka-27 helicopters (520 troops, 20 tanks) 23 LST—19 Ropucha (225 troops, 9 tanks) + 4 Alligator (300 troops, 20 tanks) 1 Polnocny LSM (180 troops, 6 tanks)

## Sources:

IISS, *The Military Balance 2001•2002*; *Military Technology* magazine No. 7, 2001, pp. 16-19; Wilkinson (2001), pp.15, 17.

<sup>152</sup> To be decommissioned by the end of 2006.

<sup>153</sup> Ukraine and Russia are not among the non-EU partners contributing to the headline goal.

<sup>154</sup> Air-cushion vessel.





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