The question of the dissemination of weapons and their production is one of factors that conditions the peace in the world. The role of weapons - especially of the light weapons - is exposed in a very lucid and very complete manner in the paper of Peter LOCK. I don't repeat this analysis therefore. But, in the same mind, I add two propositions of work for the future.

1 for a better knowledge of arms transfers.

The crucial light weapon question puts in evidence hiatuses of information as for transfers in this domain. However, these hiatuses don't concern only the light weapons. The knowledge that we have some world arms transfers is again piecemeal, imprecise and sometimes contradictory.

At the present hour, it exists two types of sources : sources in value and sources in physical volume :

Sources in value :
They are themselves of two types. There are data of the SIPRI on the one hand and the American data on the other hand.

* the SIPRI publishes since 1968 a yearbook including a chapter on the world transfers of major conventional weapons. It is an important source but of which the methodology is particular since the Swedish institute chose to construct an indicator that is not therefore precisely a real financial flux measure. This indicator is a good instrument of analysis in the long term and for comparisons, but he must not be confounded with a precise assessment of expenditures of arms procurement. Besides, these data don't give any detailed indications on the bilateral exchanges.

* the American data are gathered mainly in two publications: on the one hand, those of the ACDA (US Arms Control and Disarmament Agency) that publishes since 1970 a yearly report (World military expenditures and arms transfers) and, on the other hand, the service of research of the American Congres (Congressional research service) of which the yearly report written by Richard GRIMMETT (Conventional arms transfers to developing nations) gives a retrospective panorama (seven years) on the world weapon transfers (agreements and deliveries) that doesn't limit himself, in spite of the title of the document, to developing countries. One can add that since 1997 the edition of the Military balance, of the IISS (International Institute for strategic studies) publishes data also; but these are not an original development, they proceed data of the ACDA and the CRS, as well as of the national data for some countries (of which France).

However, each of these sources has its clean methodology to value transfers of arms and it exists between them of the meaningful differences with regard to certain countries. The difficulty is increased by the fact that a same source is brought from one year to the other to revalue its chronological sets, that present some considerable differences therefore sometimes. Finally, there is often a real conflict between these international data and data of national origin. It is especially clean with regard to the case of France. For example, the French sales of the year 1994 were estimated by the SIPRI to 705 MS $ in the yearbook 1995 and 1021 MS $ in the yearbook 1996. The CRS indicated 700 MS $ in its edition 1995 and 1400 MS $ in the edition 1996 and the ACDA, in 1995, indicated 800M $. Assessments vary the simple to the duplicate. The
fork (3.5 to 7 billions of francs) is very distant of the official data of the French ministry of defense (16.8 billions of francs) and even of the one - minimal - gotten from the French customs data (12.1 billions of francs). Finally, there are from one year to the other revaluation of different importance: the SIPRI increases its evaluation of 45%, but the CRS doubles it to him merely. Of course, These problems are not limited at the year 1994 but meet on all the period. It is necessary to also underline that the slant is not the same order of size according to the concerned countries.

Sources in physical volume.

Since 1992 another source appeared: the register of United Nations on conventional arms. This register corresponds to an effort of the transparency of which one must be pleased. However, one knows that it has limits: it is only based on the voluntary declarations of countries members (and some actors important the market of arms abstains from answering as Saudi Arabia, Kuwait or Pakistan). it only records a number limited of major weapon categories, to the exclusion of the light weapons and the small artillery. These categories themselves is very general (planes of fight without other precision) or ambiguous ("missiles and missile launchers"). Especially, movements are only recorded in physical terms and not in value.

The dependency on sources of information.

The difficulty to confront the different sources and to have a true information is illustrated especially by the content of the report of Richard GRIMMETT of 1998. Indeed, this report 1998 includes a radical reappraisal of the American weapon sales.

This report is constituted since several years with the same categories. If chapters the more developed concern transfers to developing countries, it also includes pictures of synthesis on transfers toward the set of countries of the world (of which one can deduct transfers therefore toward the developed countries). The main sellers (United States, Russia, France, United Kingdom, China, Germany, Italy) are
individualized. Data concern agreements as well that deliveries. the report gives some retrospective sets on 8 years (1990-1997 in the report of 1998). Some pictures give some quadrennial regroupings (1990-1993 and 1994-1997). Of an edition to the other, it is proceeded to certain adjustments on data, but until now these adjustments remained a limited volume and could be considered like simple statistical adjustments. it is not the same in the report 1998 that proceeds to a very important revision of data concerning the United States. If one compares data concerning the seven common years (1990-1996) of reports of 1997 and 1998, one notes indeed that the total deliveries of arms of the United States on this period are revalued to the decrease of 25% (76,9 billions of dollars according to the report 1997, 57,4 according to the report 1998), either 19,4 billions of dollars of less. Reappraisals concerning the other important sellers are not the same size, even for those whose results can present difficulties of statistical apprehension: numbers for China don't vary, those for Russia are increased very slightly (of 34,8 to 35,2 billions of dollars), as for United Kingdom (of 35 to 35,2). Results of France are reevaluated of nearly 5% (of 16,7 to 17,5 billions of dollars). The reappraisal is stronger for Germany (of 10 to 11,2 billions of dollars). In fact the most appreciable variation concerns the category " others European " countries of which the valued sales 1990-1996 in 1997 to 14,8 billions of dollars are reviewed to the rise in 1998 to 18,5 billions of dollars. But it is obvious that the movement is not the same order of size that the one that touches the American sales.

Besides this decrease of 25,2% of the American sale assessments concerns sales as well to developing countries (-25,8% of 51,7 billions of dollars to 38,4) that sales to the developed countries (-24,2% of 25,2 billions of dollars to 19,1), what excludes that this decrease is bound to conditions of crisis economic of the Asian countries or Latin America, or to the weakness of the price of oil.

The same drastic revision to the decrease applies to agreements passed to the American industry: the total amount of year 1990-1996 agreements was estimated by the CRS in 1997 to 113,4 billions of dollars. In 1998, for the same period, the assessment is only 80,7 billions of dollars (-28,9%). The decrease is very big for agreements with developing countries (that pass 73,4 to 48,7 billions of dollars, either
a decrease of 33.6%), but it is far from being negligible for the developed countries (of 40.1 to 32 billions of dollars, either a decrease of 20.2%).

Of course, the result of these contrary sense revisions (strong decrease for the American sales, rise for the other countries) is to reduce the part of the United States substantially in the world arms trade: so for the year 1996, the part of the United States in the world arms deliveries would not be more of 45.8% but of 31.5% and for the heap 1990-1996 this part would pass of 35.7% to 28.3%.

The report not providing any methodological indications susceptible to explain the importance of this revision, it is impossible to decide on the real level of data. However, it is not prohibited from considering that this radical reappraisal that reduces the part of the United States in the world arms trade permits to reinforce the idea of an arms way salt gap", of "delay" of the United States that would drive actors of outre-atlantique to increase their pressure again already very appreciable on the world arms markets. Of course, the stake of this pressure is far from being solely economic, it is in the same time strategic and political. It is the relationship between European and American producers who are in game here.

The importance of this reappraisal in a source that became, with the passing of years, one of the main references underline the necessity to arrange in the future of controllable and comparable sources.

it would be therefore applicable that, in the setting of activities of Pugwash one puts on foot a working group, including economists and experts in particular in transfers of main exporter arms Cuntries (US, RU, France, Russia, China, Germany, Italy notably) in order to establish more detailed and controllable data on the financial values of arms transfers, country by country in a first time, then supplier (enterprises) by supplier in a second time.

2 to follow the movement of transnationalisation of arms businesses.
In the same mind (to have a better economic knowledge of phenomena bound to transfers and the production of arms), it is surely desirable to be very attentive to the evolution of the industrial structures of systems of arms production.

In these last years, the main evolutions have been characterized by three phenomena:

- **privatization**: most state arsenals have been transformed into societies. The national societies have been privatized (completely or partially). The movement is especially strong in Britain, France, Italy, Spain, Sweden…

- **diversification**: businesses are generally less specialized in the military production. They are therefore less dependent on state orders.

- **Concentration**: the most visible movement is well on the one that produced to the United States the emergence of three gigantic groups: Boeing - McDonnell, Lockheed - Martin - Loral, Raytheon - Hughes, but it also develops in Europe (British aerospace - Marconi in Britain Aérospatiale- Matra in France, Dasa in Germany).

Until now these concentrations made themselves in a national setting (in the case of the United States) or in a national or European setting (in the case of the European countries). But this movement of concentration has little odds to remain completely aside from the world economic evolution. However, what one observes in the other sectors (banks, insurances, energy, car, industry) it is the transnational alliance constitution. It is therefore probable that in years to come, one attends to such a transnationalisation of arms enterprises.

This phenomenon will evidently pose problems of politics control. States risk to lose a part of their restraint on enterprises of the sector. Laws and regulations themselves (in particular as for exports) risk to be put back in reason. The enterprises policy will be influenced less and less by decisions state-controlled, less and less controlled. Such a process can only open the way to an increased dissemination of the arms of all nature.
One proposes to create a working group of pugwash especially dedicated to this question therefore (or to make a part of the program of work of the group proposed in the point 1 of it), in order to follow the transnational industrial alliances closely and to value without delay consequences of this evolution as for capacities of State control.