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TANTALUM-NIOBIUM INTERNATIONAL STUDY CENTER

PRESIDENT'S LETTER

Dear friends and members of the T.I.C.,

The month of December is always a time of reflection and thanks. By the time this Bulletin arrives, a successful 2007 for the T.I.C. will be completed. We were all fortunate to share and enjoy the year's major accomplishments:

- Tantalum powder shipments are expected to increase 3% in 2007 with the overall tantalum volume expected to increase approximately 5% this year. Niobium shipments continue to rise sharply and the production of raw materials is being increased to match. May we remind members submitting statistics on tantalum and niobium that it is very important to submit the metrics on time. This is a vital process in understanding our industry.

- We were able to maintain our record membership for the association with 96 members.

- We completed a hugely successful Forty-eighth General Assembly in Rio de Janeiro, Brazil. Many thanks to CBMM and to CIF for being most gracious hosts.

- Additionally, we welcome three new members to the Executive Committee: Dr Karlheinz Reichert of H. C. Starck, Mr Alan Ewart of A&M Minerals and Mr Barry Valder of Wah Chang. We will all benefit in the future from their valuable contribution. Our sincere thanks go to the two resigning members: Dr Axel Hoppe and Mr Michael Herzfeld.

- We look forward with great expectations to the Forty-ninth General Assembly next October, scheduled in Shanghai, China. This meeting is being hosted by Kemet Corporation and Ningxia Non-ferrous Metals.

- Many thanks to Emma Wickens, our new Secretary General, for her administrative skills and great patience in organizing the attendees at the Rio Conference. Also thanks to Ulric Schwela for his technical support and his attention to IAEA issues.

- And last, but not least, thanks to my old friend Axel Hoppe who served with attention and distinction as "El Presidente" of the T.I.C. in 2007. Axel will be missed. He was, throughout his long career with H.C. Starck, a major force in growing the tantalum and niobium markets. Happy and healthy retirement!

Finally, on behalf of the T.I.C., we wish all our friends and associates a Merry Christmas and a very happy, healthy, and prosperous New Year.

Bill Young, President

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FORTY-EIGHTH GENERAL ASSEMBLY

The Tantalum-Niobium International Study Center held a conference in Rio de Janeiro, Brazil, from October 21st to 24th 2007, including the Forty-eighth General Assembly of the members.

Technical sessions took place on October 22nd and 23rd. The paper presented by the T.I.C. Technical Promotion Officer is printed in this issue of the Bulletin, and some of the other papers will be published in future editions.

Delegates, guests and their ladies enjoyed a Welcome Reception on Sunday evening and a Gala Dinner, hosted by CBMM, on Monday night.

On Wednesday, plant tours to CIF and CBMM had been scheduled. Unfortunately, torrential rain leading to airport closures prevented us from reaching CIF. We were very grateful to CBMM for welcoming to their facility additional delegates who agreed to change tour.

During the technical sessions, the ladies enjoyed a sightseeing programme which took them on a boat trip round the Guanabara Bay and on a guided tour of the Botanical Gardens.

GENERAL ASSEMBLY

Six companies were elected as new members of the association. Their names and contact details are printed in the section of this Bulletin covering member company news.

Mr William Young was elected as President of the T.I.C. for the coming year, succeeding Dr Axel Hoppe. Mr Alan Ewart, Dr Karlheinz Reichert and Mr Barry Valder were elected to the Executive Committee. Mr Richard Burt, Mr Jose Isildo de Vargas, Mr He Jilin, Mr William Millman, Mr David Reynolds, Mr Lawrence Stryker and Mr William Young were re-elected to a further term of office. Dr Axel Hoppe and Mr Michael Herzfeld resigned from the Committee.

Ms Emma Wickens was formally appointed Secretary General of the T.I.C.

FORTY-NINTH GENERAL ASSEMBLY

The Forty-ninth General Assembly is scheduled to take place in October 2008, in Shanghai, China.

Call for papers: please submit your proposals for papers for the technical sessions.

T.I.C. STATISTICS, TRANSPORT PROJECT AND IMO DENIAL REPORTING PROCEDURE

This article is taken from the paper given by Mr Ulric Schwela, Technical Promotion Officer of the Tantalum-Niobium International Study Center, on October 23rd 2007, as part of the meeting in Rio de Janeiro.

STATISTICS

The first and foremost topic of this paper is the T.I.C. statistics, including:

- a review of the changes in reporting since October 2006
- the new category of mill products for capacitors
- reporting procedures, deadlines and zeroes
- members' responses and comments
- an overview of the latest figures in comparison with the statistics for the preceding five years.

NEW REPORTING CATEGORY

Starting in the fourth quarter of 2006, a new category was introduced to the tantalum capacitor producers' receipts, namely 'Mill products (except wire)'. This was done in order to identify the various tantalum mill products (for examples, see below) which are used by capacitor producers and therefore allow the processors' shipments to be differentiated between material for the capacitor production industry and material for the chemical processing industry. Examples of non-wire uses of tantalum by capacitor producers include: screens, trays, heater pins, heater elements, cans, seals, headers, micro chip plates, foil. The initial figures returned for this category are low and this fact can be attributed to a lack of familiarity with it. It remains to be seen whether the category proves significant.

REPORTING PROCEDURES

Starting in 2007, statistics collection changed from biannual to quarterly, while the reporting of the collected figures remained biannual. One of the reasons for this was to make the process more routine and a smaller task each time it was required, as it was felt that many companies found the collection of six months of figures a daunting task.

A comparison of the speed with which companies have reported, by looking at the number of defaulters remaining after each deadline, indicates that most companies are reporting more rapidly. There is however a hard core of companies which continue to report late and therefore hold up the final report for the rest of the membership.

It is imperative that ALL reporting companies reply within the time period given, which is nearly three weeks. Special mention needs to be made for companies which, for whatever reason, may not have any figures to report: you MUST report zeroes. If the collector does not receive a report at all, he is not allowed to make any assumption about the figures and the whole collection process is delayed.

MEMBERS' RESPONSES AND COMMENTS

We have received several favourable comments regarding the change to e-mailing electronic forms which can be edited. This allows reporting companies to input the data and forward them to the statistics collector with a minimum of fuss.

Constructive comments have also been received regarding changes to be made to certain categories. These are discussed by the Executive Committee with a view to future implementation. The views of the membership are always welcome and you are encouraged to let the T.I.C. know how you believe the statistics could be improved for everybody's benefit.

STATISTICS OVERVIEW

The statistics collected from T.I.C. member companies on production and trading of raw materials and shipments by processors over the past year are reviewed in comparison with the statistics for the previous five years.

TANTALUM

The data collected for tantalum are considered to cover the vast majority of material in the industry.

PRIMARY PRODUCTION

Figure 1 shows the statistics for primary production.

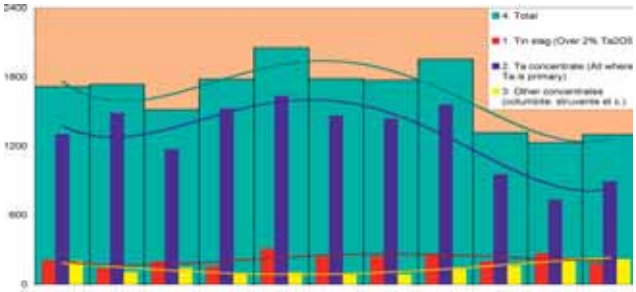

Figure 1: Tantalum primary production ('000 lb Ta_2O_5 contained)

The recent closure of the underground mine at Greenbushes has impacted the primary tantalum concentrate production figure for 2006. The industry's capacity to supply tantalum remains sufficient to satisfy demand due to a combination of factors. These are: in the short to medium term, the continuing stocks held by downstream industries and the fact that some processors supplement their supply by sourcing material directly from smaller producers; in the medium to long term, there are at least two new mining projects ready to begin production, one as soon as 2007, with a combined capacity comparable to Greenbushes thus assuring continuity of supply.

PROCESSORS' RECEIPTS

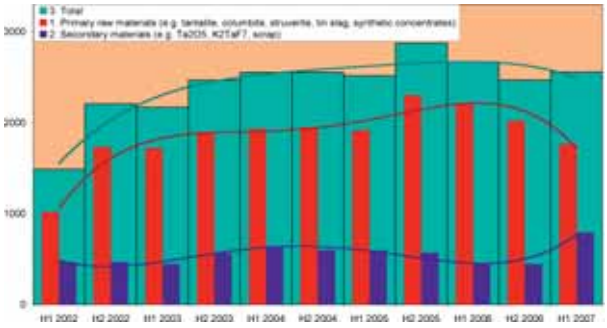

Figure 2: Tantalum processors' receipts ('000 lb Ta_2O_5 contained)

Over the past year receipts have fallen, echoing the reduced primary production although to a lesser degree. This can chiefly be attributed to the combined effects of the traditional long-term

contracts between producer and processor being discontinued, the processors seeking to reduce their stock levels further and more material being obtained from outside the T.I.C. membership.

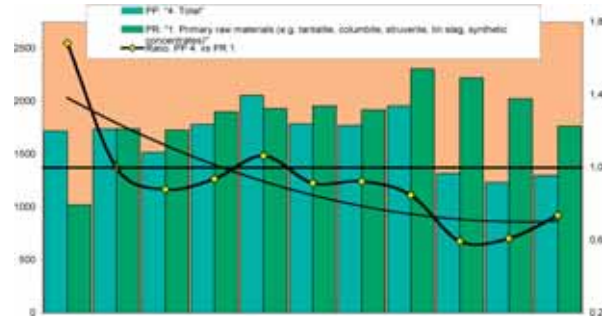

Figure 3: Tantalum primary production versus processors' receipts ('000 lb Ta_2O_5 contained)

PROCESSORS' SHIPMENTS

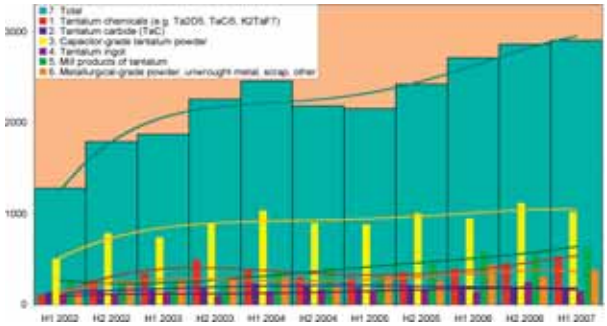

Figure 4: Tantalum processors' shipments ('000 lb Ta contained)

Demand for capacitor-grade powder (figure 4) continues to rise. The metal powder reached an all-time high of over 2 million pounds last year. Nevertheless, this only represents around 35% of the total consumption of tantalum, the lowest level for the last five years.

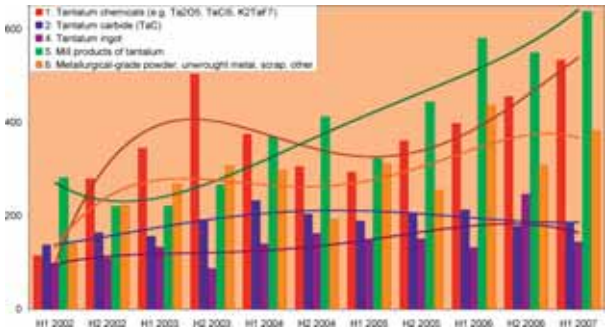

Figure 5: Tantalum processors' shipments of products other than capacitor-grade powder ('000 lb Ta contained)

When looking at the picture without capacitor-grade powder, as in figure 5, the greatest increase has been shown by mill products of tantalum (including wire for capacitors), now more than double the amount in 2002 and more than 20% of the total. Tantalum chemicals have also been increasing significantly.

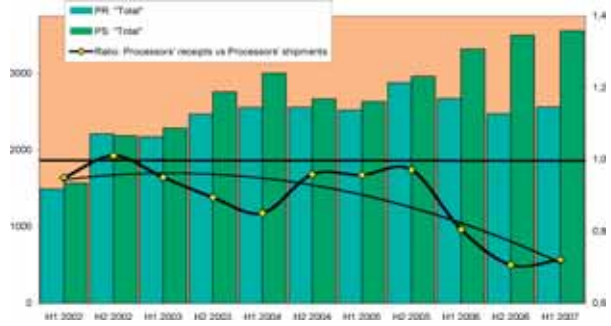

Figure 6: Tantalum processors' receipts versus processors' shipments ('000 lb Ta_2O_5 contained)

CAPACITOR PRODUCERS' RECEIPTS

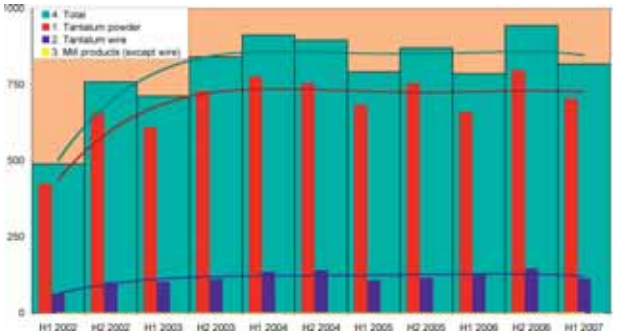

Figure 7: Tantalum capacitor producers' receipts ('000 lb Ta contained)

As can be seen in Figure 7, the new category of non-wire mill products does not yet have sufficient data for conclusions to be drawn.

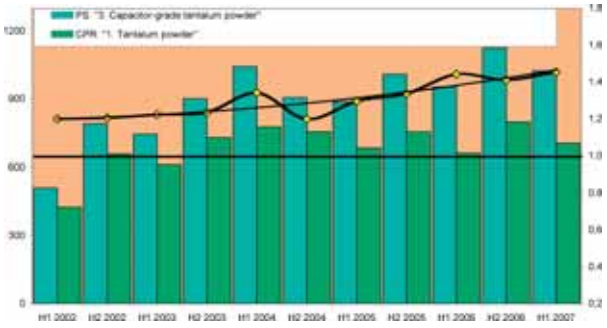

Figure 8: Tantalum processors' shipments of capacitor-grade powder versus capacitor producers' receipts of tantalum powder ('000 lb Ta contained)

Comparing the processors' shipments of capacitor-grade powder against the capacitor producers' receipts of the same (figure 8), we note that there is a tendency for the processors' shipments to be greater than the receipts of powder by the makers of capacitors, and that the difference is increasing. This could be due to an increasing quantity of capacitor-grade powder being shipped to capacitor manufacturers outside the T.I.C. members which report statistics, which could in turn be a result of the continuing shift of capacitor production to countries categorised as 'rest of the world', as is shown in figure 11 relating to consumption.

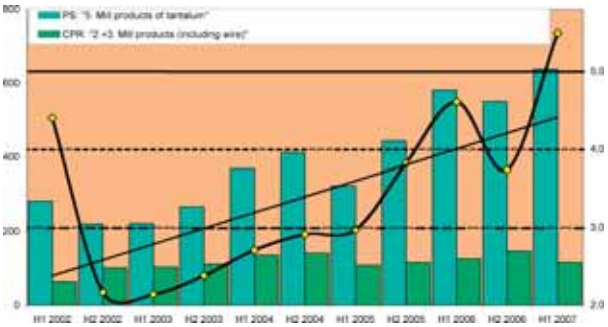

Figure 9: Tantalum processors' shipments of mill products versus capacitor producers' receipts of mill products (including wire) ('000 lb Ta contained)

Processors' shipments of mill products are increasing quite steeply (figure 9), whereas capacitor producers' receipts of mill products are only increasing very slightly. This indicates that an increasing proportion of mill products is going into other applications.

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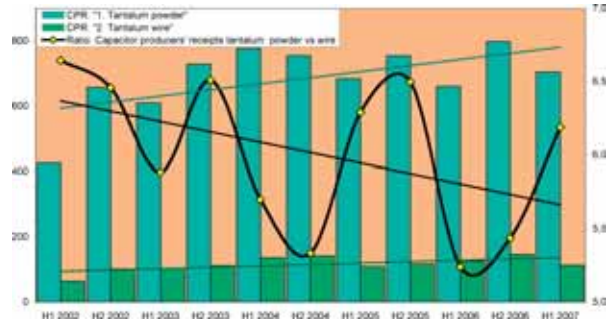

Figure 10: Tantalum capacitor producers' receipts, powder versus wire ('000 lb Ta contained)

As can be seen from the trendlines in figure 10, powder receipts have shown a greater increase than wire receipts. The ratio of powder to wire receipts has been dropping over the period shown, attributable to the increasingly small size of tantalum capacitors which has a greater influence on the amount of powder required per capacitor than the amount of wire.

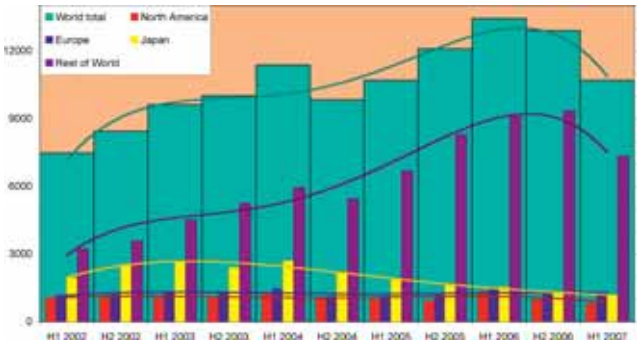

Figure 11: Tantalum capacitor consumption (estimated), by world region (millions of units)

Estimates of tantalum capacitor consumption are shown in figure 11. We observe a decrease in capacitor consumption over the last year. This comes after five years of almost continuous increase.

NIOBIUM

The data collected for niobium are considered to cover the vast majority of material in the industry.

PRIMARY PRODUCTION

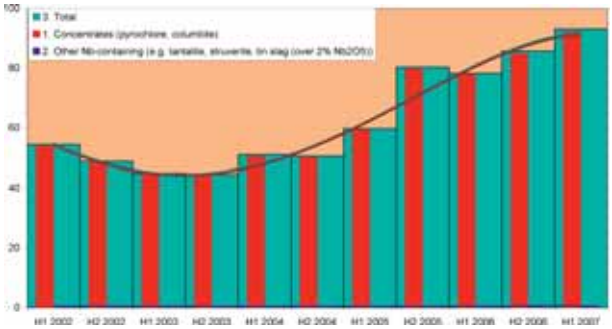

Figure 12: Niobium primary production ('000 000 lb Nb_2O_5 contained)

The slump in aerospace, automotive and civil engineering (construction) industries after '9/11' in 2001 was felt up to 2003. Recovery is now complete as demand is at an all-time high and continues to rise. Mining and processing capacity is being increased accordingly to satisfy this, primarily by CBMM with its further expansion to 185 000 000 lb p.a. Nb_2O_5 scheduled for 2008.

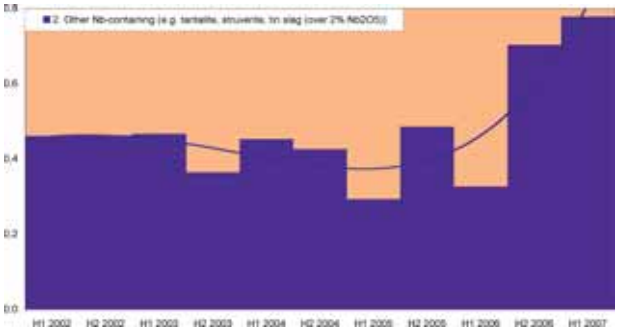

Figure 13: Niobium primary production from tantalite, struverite, tin slag (not including pyrochlore) ('000 000 lb Nb_2O_5 contained)

PROCESSORS' SHIPMENTS

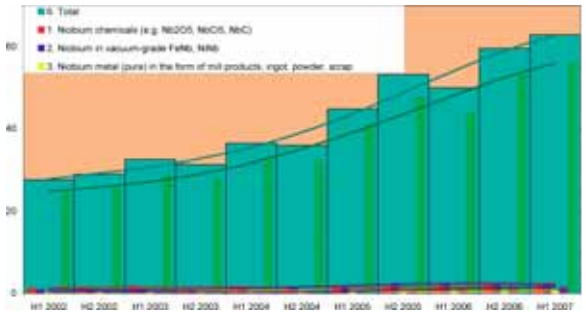

Figure 14: Niobium processors' shipments ('000 000 lb Nb contained)

HSLA grade ferro-niobium (FeNb) (figure 14) represents the vast majority of niobium output, nearly 90%. This has been steadily increasing and has averaged a yearly growth rate of 19.0% over the past four years. The primary driver for niobium demand has been the steel industry where there is a greater emphasis on value-added products such as stainless steels as opposed to ordinary carbon steels, as well as a recent trend for niobium to replace vanadium in some steels.

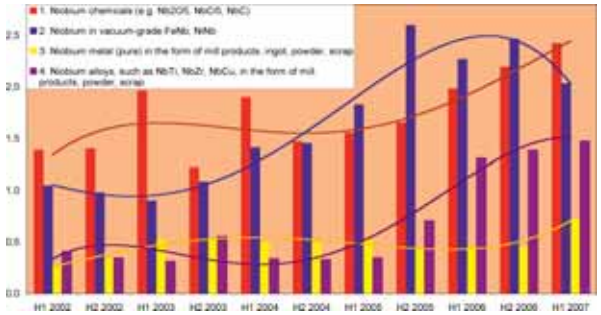

Figure 15: Niobium processors' shipments other than HSLA grade ferro-niobium ('000 000 lb Nb contained)

Figure 15 focuses on the categories other than HSLA grade FeNb. Niobium chemicals have increased over recent years. Vacuum-grade FeNb and NiNb dropped from 2001 to a trough of less than half in 2003, but have now recovered to exceed 2001 levels. Vacuum-grade FeNb and NiNb are destined for the manufacture of super-alloys such as Inconels. As these are primarily used in aerospace, they were hit particularly hard by the slump after '9/11' but have now returned to, and exceeded, previous levels. Pure metal has remained relatively steady until this year, where an increasing trend is observed. Niobium alloys such as NbTi, NbZr and NbCu remained steady until H1 of 2005 and have since then roughly doubled every six months. Pure niobium metal and NbTi alloys are used in super-conducting magnets and two recent particle acceleration projects use significant quantities of niobium. Construction of the Large Hadron Collider (LHC) has recently been completed after several years and used 7000 km of NbTi wire; whereas the International Linear Collider (ILC), about to be built, will

account for over 500 t of pure niobium, more than the entire pure metal production of 2003, although construction will, as for LHC, be spread over several years. Increased activity in production of super-conducting magnets has driven a rise in demand for NbTi.

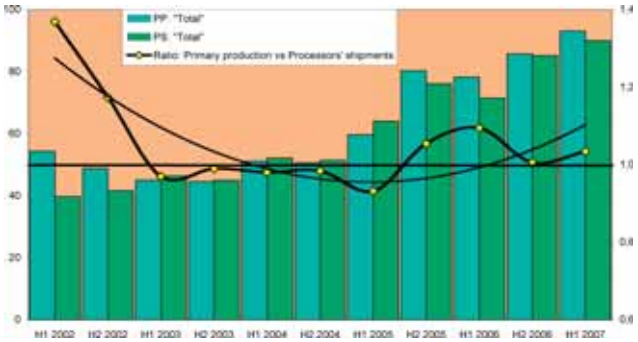

Figure 16: Niobium primary production versus processors' shipments ('000 000 lb Nb_2O_5 contained)

Figure 16 shows that niobium production has kept pace with an increasing demand.

STATISTICS SUMMARY

Tantalum raw material production is dipping temporarily. This raw material supply picture is adequate for current uses and new sources are coming on stream to satisfy future demand. Tantalum shipments are rising steadily and applications are showing diversification.

Niobium shipments have surged recently and production of raw materials is being increased to match.

TRANSPORT PROJECT

An overview is given on the Transport Project and the numerous significant developments which have taken place. This includes recapitulating why the Transport Project started, looking at the study's conclusions and a summary of the report produced, touching upon the IAEA (International Atomic Energy Agency) CRP (Coordinated Research Programme) and explaining its context and relevance to the T.I.C. members, noting the work done by the IMO (International Maritime Organisation) and the newly formed Steering Committee dealing with Denial of Shipment.

ORIGINS OF THE TRANSPORT COMMITTEE

When it became increasingly obvious that companies were experiencing difficulties in transporting tantalum raw materials, it was suggested that a committee (TC, Transport Committee) should be set up to tackle this issue. This was initially formed by people from A&M Minerals and Metals, Alfred H. Knight, Cabot, H.C. Starck, Sons of Gwalia and, of course, the T.I.C. The President of the T.I.C. also participated and provided a guiding light: this was first Dave Reynolds (Kemet), then Bill Millman (AVX), Axel Hoppe (H.C. Starck) and now Bill Young (Cabot).

The TC discussed its experience with problems of transport and set out to attend meetings both to learn more and to advise authorities that something needed to be done. In July 2003, the IAEA held a landmark meeting in Vienna, the International Conference on the Safety of Transport of Radioactive Material, where it noted that the industries using radioactive material were facing reduced availability of transport routes, modes and carriers as a result of decisions by commercial carriers, ports and handling facilities not to accept radioactive material. It was clear that the T.I.C. was not alone with its problems.

Further meetings took place, including a fact-finding mission by the IAEA in July 2004 where the T.I.C. set out to provide as much information as was available at the time. This revealed that the T.I.C. had gone as far as it could hope to go without having more concrete data to back up its case. It was decided that a study should be carried out to determine with confidence just how safe the transport of radioactive tantalum raw materials was and quantify the risks. A tender for this study was put out to various organisations and consultancies. Two were short-listed and interviewed in January 2005 and the Canadian company SENES was chosen as an ideal candidate to study and support the T.I.C.'s case.

All the efforts of the TC during 2005 were spent on planning, preparing and executing the practical work required for the study. As analysis results started to flow in, SENES could begin its calculations and the first draft report appeared in January 2006. The work continued throughout 2006, with preparation of conclusions and re-assessment of the data with the input of all concerned.

During 2006 it also became clear that the transport problem was taking on a new form at the IAEA, when this Agency invited interested parties to attend a Technical Meeting on Denial of Shipment of Radioactive Material, in May of that year. Although it was arguably nearly three years since the IAEA first became aware of the problem, the T.I.C. was assured that this was an unusually fast reaction for such a large institution, which demonstrated that the IAEA was taking the problem seriously.

A commercial conference organiser IBC/Informa took note too and organised a conference on Radioactive Transportation in London in October 2006. The T.I.C. was invited to present a paper at this event, another opportunity to remind others of this problem.

This brings us to the past year's events.

CURRENT SITUATION

As time has passed, the Transport Committee's work has grown and can now best be described by division into three distinct areas:

- Long-term: working within the NORM CRP (Coordinated Research Programme on the Safety of Transport of Naturally Occurring Radioactive Material)
- Medium-term: participating in the ISC-DOS (International Steering Committee on the Denial of Shipments of Radioactive Material)
- Short-term: resolving individual cases on an ad-hoc basis, helping the T.I.C. members directly

Long-term: the NORM CRP

A 'CRP' is a mechanism by which the IAEA has a particular technical issue investigated in detail, so that the findings can then be taken through the decision making process before any changes are made to regulations. The regulations relevant to T.I.C. members wanting to have Class 7 tantalum raw materials transported are the Regulations for the Safe Transport of Radioactive Material, known by the code of TS-R-1. This CRP was initiated with a so-called 'preparatory meeting' in November 2006; the first official meeting was held in April 2007. The CRP is scheduled to meet again in February 2008 and should conclude its work in February 2009, with a final report due in October 2009.

The T.I.C. offered to participate and was able to do so by virtue of the work carried out on the transport study. For the purpose of the CRP the T.I.C. had to be sponsored by an IAEA Member State and Canada was both able and willing to do this: participation is therefore carried out in co-ordination with the relevant Canadian authority. There are seven other participating states, each conducting its own research.

The aims of the T.I.C. in this long-term work are to:

i. demonstrate the safety of Class 7 tantalum raw materials transported in accordance with the regulations
ii. share the transport study findings in an appropriate scientific environment
iii. encourage the amendment of the current transport exemption value from 10 Bq/g to a higher value more appropriate to the low risk posed by these materials

It is hoped that this long-term work will bear fruit as follows:

i. by providing support for any proposals for regulatory changes in the medium term
ii. by resulting in the amendment of the IAEA regulations in the 2011 edition

T.I.C. study

After several re-drafts, the final version of the report was completed in April 2007. This was provided to the CRP participants as part of the shared work. The IAEA considers the T.I.C. report important as it contains real data measured in the field under controlled conditions, compared to theoretical calculations, and resulting in reliable factors that can be used by others. It is more common for studies seen by the IAEA to be theoretical only, without measurements. As the T.I.C. report is also the first to be completed for the CRP, it will function as a bench-mark for the other studies.

One outcome of the meeting in April 2007 was to demonstrate the need for calculations based on 'standard' exposure models, in order that the work conducted by the various participants could be compared directly. These calculations could not have been anticipated and are not present in the report, so they will have to be added as an appendix.

A scientific paper might be published based on the T.I.C. report: if so it would be in an appropriate scientific journal. The benefit of this would be to obtain peer review of the study findings and a publication would enhance the status and credibility of the study report.

The study demonstrated that the current exemption level of 10 Bq/g is very significant to tantalum raw materials and it was therefore very important to ensure that the exemption level be appropriate to the risk posed to transport safety. Having considered the most exposed transport workers under typical working conditions and what would be considered an acceptable dose criterion of 0.3 mSv/y, the study shows that an exemption level of at least 30 Bq/g would be appropriate and defensible in terms of radiation protection.

It is still too early to tell what the findings of the CRP as a whole will be when it produces its final report in three years' time, however there is some support to be found for the T.I.C.'s findings and it is important that the T.I.C. continue to support this position and see it through to the CRP's conclusion.

There will be a benefit to the T.I.C. membership if the regulations are changed, leading to a better balance between risk and practicality, thus easing the transport problems by removing the root cause.

Medium-term: IAEA Steering Committee

As mentioned previously, the IAEA recognised that more immediate action was required to resolve the problems of denial and delay of shipment of radioactive materials. The body of anecdotal evidence of transport difficulties built up over time disturbed the IAEA as one of IAEA's fundamental goals is to promote the peaceful use of radioactive materials. This prompted a resolution in September 2005 to establish a steering committee to tackle the issue of denial of shipment, and the ISC-DOS was duly set up in November 2006 in order to determine why shipments of radioactive material are denied and to develop a strategy to address the issue. The ISC-DOS recognises that there is no accurate measure of the nature and extent of the issues and that the problem of denial and delay is affecting the ability to transport radioactive materials cost-effectively to where they are required in the world. The commitment of international organisations and states to actively encourage the reporting of instances of denial and delay using the mechanism of the newly created database will be important to provide a fuller picture.

There is still a lack of agreement around the world about the extent of denial. This is partly because industry is in fact finding sub-optimal, costly and time consuming solutions to move its radioactive materials from one destination to another. This has economic and social consequences, for instance alternative routes and longer journeys add complexity and cost as well as a potential increased risk to safety. This complexity has been shown to be a precursor to absolute denials of shipment. The ISC-DOS also recognises that regulators, industry and commercial carriers are all stakeholders; but these can not be forced or coerced into acting against their interests.

It can not be understated just how important it is for the T.I.C. members to provide accurate and detailed reports of denial, in order that a fuller picture may emerge which can then be tackled in a more focused and effective manner.

At the first meeting of the ISC-DOS in November 2006, a comprehensive Action Plan was developed, based on six areas of work:

- Awareness among organisations and states regarding the events, consequences, underlying issues and their resolution;
- Training of service providers (carriers, handlers etc.);
- Communication to educate service providers;
- Lobbying for marketing, outreach and promotion of industries requiring transport of radioactive material;
- Economic assessment and measures to identify and reduce economic burdens causing sustainability problems;
- Harmonisation of international requirements where industry should notify the UN – in this case the IMO, using the standard reporting form now developed.

The ISC-DOS has already completed many of its actions; as new actions are identified and allocated, the Action Plan is revised so that it constitutes a living up-to-date document. Some of the achievements are:

- Awareness
  - The denials database has been set up by the IMO together with the IAEA.
  - Transport maps have been drafted for various materials, including tantalum, with relevant regulations and guidelines to be appended to the appropriate nodes.
- Communication
  - Fact sheets on the uses of radioactive materials have been developed. They should be distributed widely for information and education purposes.
- Economic
  - The European Commission is considering analysing the costs of shipment of radioactive materials. What is the impact of denial on the tantalum industry?
    - Direct cost, changed trade patterns, market distortion…
    - Longer journeys, increased fuel consumption, greater radiation exposure for transport workers…

The ISC-DOS expects to have specific data to analyse and discuss for its next meeting in January 2008 and it encourages input from industry, such as the T.I.C. member companies.

Short-term: resolve individual cases

Where a problem can not wait years but requires a solution within days or weeks, there are various avenues of approach:

- contact the country's Competent Authority and explain the problem, obviously the problem should not originate with the Competent Authority.
- advise the T.I.C. of the details of the case so that we may contact the relevant authority on your behalf and investigate the

requirements in relation to the international regulations set by IAEA/IMO.
- complete an IMO Class 7 Shipment Denial/Delay Form and submit this to the relevant authority or directly to the IMO, or pass this completed form to the T.I.C. for us to follow up on your behalf.

Basically, the only way to obtain a solution is to have open dialogue between the interested parties (yourselves, the maritime carrier and the authorities) in order to challenge any special requirements and have them withdrawn.

THE NEAR FUTURE

PATRAM, October 2007
The conference on Packaging and Transport of Radioactive Materials is held every three years, the venue alternating between Europe and America. In 2004 it was held in Berlin, now it will be held in Miami. This meeting is well attended by the authorities involved in the regulation of NORM, as well as industry and authorities from the medical radioisotope and nuclear energy sectors. Part of the meeting will focus on denial of shipment, an opportunity for the T.I.C. to remain abreast of developments in this area.

First EAN-NORM meeting, November 2007
A new initiative by the European Commission is to form a European network of industry and authority involved with handling and transport of NORM. The first meeting will be held in Dresden (Germany) and the T.I.C. has been invited to take part.

Second IAEA RCM, February 2008
The seven other participants in the IAEA CRP on NORM transport will be working on their projects and they are expected to present calculations based on standard scenarios for the next meeting in February 2008. The T.I.C. will attend to review this work and assess its impact on the T.I.C.'s own report. There will also be discussion on the next stage of work and the targets for the third meeting expected to take place in February 2009. One of the challenges will be to ensure that progress remains on target for completion in 2009.

IMO DENIAL REPORTING PROCEDURE

Finally, we will focus on the IMO's initiative to collect reports of Denial of Shipment and see how T.I.C. members can benefit from this.

IMO INITIATIVE

The problem with transport has mainly affected sea carriage and the IMO has naturally taken an interest from the beginning. The IMO has indicated a little frustration at the time it has taken the IAEA to react and the IMO has therefore been expediting initiatives of its own (the same can be said of IATA [International Air Transport Association]).

In February 2006 IMO Assembly Resolution A.984(24) was issued specifically to facilitate the carriage of Class 7 radioactive materials and it listed seven points of action. One of these urged relevant governments and organisations to draw attention to any instances, together with the associated reasons, of the carriage of IMDG Code Class 7 radioactive materials encountering difficulties or being refused access aboard ship or in or through ports.

In July 2006, at the IMO's 33rd session of the FAL (Facilitation Committee), the above resolution was clarified and it was pointed out that unless a mechanism was defined by the FAL, then the IMO would do nothing further. The SPI (Ship/Port Interface) working group was consequently tasked with this and it in turn established an inter-sessional working group led by Canada (in the form of MDS Nordion, a radiopharmaceutical manufacturer). The T.I.C., along with a small number of other institutions, volunteered to assist with this. Between sessions 33 and 34 of the FAL, the working group then discussed and agreed on the form which would be used for reporting all instances of denial and delay of shipment of radioactive materials, by air, land or sea.

In March 2007, at the IMO's 34th session of the FAL, the mechanism for reporting denials was adopted on a trial basis. In June 2007, at the second meeting of the ISC-DOS, this reporting method was further endorsed and it was agreed to continue collecting reports for six months and review the data at its next meeting in January 2008. It has been remarked that this data gathering exercise is like peeling an onion: the real reasons for the transport problems are not immediately apparent, we must peel back the layers of reasons before we get to the underlying causes.

It is imperative that T.I.C. members report their instances of denial and delay by December 2007 in order to help the authorities achieve progress on this issue!

It is further recommended that members report all instances, going back as far as five years, in order that a suitable body of evidence can be obtained. Note also that the following are considered to be denial and delay, for this purpose of denial and delay:
- refusal by carrier to accept goods for carriage
- requirement for significant additional and onerous administration, including the need to produce any certificates which are not believed to be necessary, relevant or appropriate
- the quoting of exorbitant prices for carriage
- additional requirements imposed by ports of call or destination port, whether prior to booking carriage or during voyage
- unexpected demands by Customs or equivalent authorities en route, leading to short or long delays, impounding or fines
- requirements particular to a port or local authority, or unusual national requirements which are not common to other countries or international regulations, e.g. licences, permits
- any other external condition which has a significant impact on the cost, route, carrier availability or effort required to arrange carriage
- where an alternative routing has had to be found and utilised at significant additional cost or administrative burden

HOW T.I.C. MEMBERS CAN BENEFIT

This initiative now stands as a golden opportunity for the T.I.C. membership to have its problems heard and documented officially in a database, in order that the IMO and IAEA might see patterns emerging and prioritise resolving the most problematic areas. These data will be analysed in January 2008 by the ISC-DOS, which will then formulate actions to be taken. The ISC-DOS has demonstrated a good track record to date in taking action and achieving results. Giving the ISC-DOS more concrete data with which to work will exploit this resource to the full and will support the arguments that the T.I.C. has been making on behalf of its members for the past four years.

If the T.I.C. members do not send a convincing number of reports in, the T.I.C. can only conclude that the problem of transport has been solved and that it can terminate all efforts!

T.I.C. members were invited in the quarterly Bulletin (issues 130 and 131) to report their problems: no specific reports have been received.

It is a case of 'use it or lose it', the next step is now in your hands, the T.I.C. members. For copies of the reporting form and guidance on filling it in, please contact the T.I.C.

FINAL POINTS REGARDING DENIAL

It appears the senior management of maritime carriers does not state an objection to Class 7 in principle, however it hides behind semantics (i.e. stating not a 'policy' but a 'refusal') and lays the blame on authorities and insurance companies. The various local / regional / national licensing / permit requirements which are in addition to (and not part of) the international regulations, discourage maritime transport companies from providing a shipping service. This makes it important that you peel the proverbial onion of the denial problem and submit a Form which details the root causes of the denial.

It is possible that some companies are transporting material without respecting the regulations, in an attempt to avoid problems. This is not a constructive policy.

The T.I.C. calls on its members to operate in a transparent manner and in open dialogue with carriers and authorities.

Member companies are always invited to report on their own experience and express their views on the problems and possible solutions.

FORTY-EIGHTH GENERAL ASSEMBLY IN RIO DE JANEIRO

All about ferro-niobium, during the plant tour to CBMM
Photo courtesy of Ulric Schwela

The ladies enjoying a boat trip round the Guanabara Bay
Photo courtesy of Rosalind Burt

MEMBER COMPANY NEWS

The following companies have resigned from membership since the last General Assembly:

Crystal Technology
Haddington Resources
Kemet S.A.

The membership of Metallurgical Products (India) was terminated by decision of the Executive Committee.

The companies elected to membership by the Forty-eighth General Assembly are:

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Office of the nominated delegate: Friedrichstrasse 95, 10117 Berlin, Germany
Nominated delegate: Mrs Irina Kirschke
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e-mail address: ikirschke@varomet.com
Web site: www.gfe-mir.de

Globe Uranium
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