1st Meeting of
Transport Safety Standards Advisory Committee
(TRANSSAC I)

IAEA Headquarters, Vienna
27 February - 1 March 1996

CHAIRMAN'S REPORT OF FIRST MEETING

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The meeting was opened by Mr. Abel González, Acting Head of the Division of Radiation and Waste Safety. He provided information on the new organization of the safety functions within the Agency, structure of the Agency’s advisory committees, and terms of reference for TRANSSAC. He pointed out that the 1996 edition of the Safety Series No. 6 (SS6) would go directly to the Board of Governors since its development has been sufficiently coordinated with the Member States.

The Chairman, Mr. Collin, welcomed the participants and noted the benefit that TRANSSAC will have from the previous work done by the Standing Advisory Group on the Safe Transport of Radioactive Material (SAGSTRAM). He also observed that at the end of the week TRANSSAC should reflect on the results of this first meeting and determine if any improvements in the focus of the group and its working procedures could be identified.

**Results of the meeting**

The detailed working papers considered and prepared by the meeting are available from the Scientific Secretary, Mr. Rawl. In this report references to the working papers are provided to assist in obtaining more detailed information.

**Terms of Reference and Working Methods**

The terms of reference for TRANSSAC, Working Paper No. 2, were reviewed and accepted. Additional information on the names and addresses of the international organizations invited to participate in TRANSSAC and the membership of each of the other advisory bodies (ACSS, WASSAC, RASSAC, and NUSSAC) was provided as WP 2 Add. 1 and Add. 2.

The frequency of TRANSSAC meetings was discussed with opinions being expressed that meetings could be held less frequently than once a year while other opinions were that once a year was the minimum workable frequency. It was decided that annual meetings would be planned, but that if opportunity arose within the overall programme to skip a meeting and if the need to submit the annual report to the Director General could be successfully addressed, due consideration would be given to doing so.
The reporting methods for TRANSSAC were discussed and it was noted that both a report of the meeting (Chairman’s report) and the report to the Director General would be needed. It was agreed to develop a single report to serve both as the meeting record and the report to the Director General. It was agreed that the report should concentrate on the results of the meeting (e.g., agreements reached and recommendations made) and not on being a record of the deliberations, unless this was specifically needed (e.g., to record issues covered but not resolved). Additionally, it was noted that it would be highly desirable for the Secretariat to prepare a draft of this report, as far as possible, prior to that last day of the meeting. This will allow consideration of the draft before adjournment.

Radioactive Transport Study Group
During presentation of WP 18 the role and terms of reference of the Radioactive Transport Study Group (RTSG) was discussed. TRANSSAC members could recall various aspects of the RTSG’s beginning and evolution, but no written information was immediately available to provide a clear understanding of this. Since the working relationship between the RTSG and the Agency is important to the overall transport safety program, it was agreed that the Scientific Secretary will collect background information on the RTSG and make this an agenda item for the next TRANSSAC meeting.

Mode-related issues
Discussion of mode-related issues resulted from consideration of WP6, the proposed terms of reference for the AGM on Modal Issues planned for October 1996. The time line for adoption of the 1996 edition of SS6 by the International Civil Aviation Organization (ICAO) was discussed, particularly the Dangerous Goods Panel Working Group meetings where the drafting of the amendments will be done. It was noted that the concerns presented in WP 31 presented during Revision Panel 4 still needed to be addressed. The International Maritime Organization (IMO) noted the forthcoming Special Consultative Meeting in London, 4-6 March 1996 and provided information on the progress being made in IMO toward addressing the issues identified by the joint IMO/IAEA/UNEP Working Group.

The overall transport safety programme
The overall transport safety programme was introduced and considerable discussion ensued on the number of meetings scheduled. Opinions were expressed that absolute limits should be imposed and other opinions were expressed that the number of meetings has to be an outcome of the work to be accomplished. It was observed the other international organizations, such as the United Nations Committee of Experts on the Transport of Dangerous Goods, covered a large number of technical proposals in a limited time. It was noted that all meetings must be justified in their own right but that perhaps the efficiency of the meetings could be improved to accomplish more in the same time frame. Ultimately, it was agreed that TRANSSAC members will provide, by 31 August 1996 any suggestions that they have to the Scientific Secretary concerning:
1. how to improve the efficiency of technical committee meetings;
2. reducing the number of meetings,
3. improving or increasing the ‘democratic accessibility’ of all Member States to the meetings. It was recommended that the Secretariat should collate this input and arrange for a systematic evaluation of the process and procedures used in formulating decisions, particularly with regard to revisions of SS6.

The results of this analysis should
be presented at the next meeting of TRANSSAC.

With regard to the next revision cycle, it was noted that considerable input to revising the process has been offered (WPs 5 and 18). There was strong support for carefully evaluating the revision process early in the next cycle. It was noted that technical committee meetings were proposed in the transport safety program plan (WP4) during 1997 and 1998 for this purpose. It was agreed that recommendations on improving or modifying the review and revision process should be prepared by a Consultants Service Meeting and referred to TRANSSAC for consideration. Following consideration by TRANSSAC, a Technical Committee could, if needed, be convened to prepare a detailed approach for a new overall review and revision process.

In particular, it was noted that a clear protocol for dealing with issues and papers is needed to ensure full consideration by all parties. It was recommended that protocols be developed to guide the meetings related to the revision process (including TRANSSAC) in such matters as completeness of submission, timeliness, handling of 3rd party submissions, and required content. These protocols should be developed in consideration of how the other Advisory Committees expect to operate and should be reported to the next TRANSSAC.

Information services

Ms. Brittinger, IAEA, presented WP 7 and a description of survey developed by the Secretariat in response recommendations of SAGSTRAM. The survey is intended to determine the availability and usefulness of certain transport data and Member States willingness to participate in the collection of the data. TRANSSAC expressed strong support for undertaking the survey as presented. It was recommended that survey questions be added to determine what the different types of information will be used for. The survey form will be distributed by the Secretariat by letter to all Member States contained in the National Competent Authority List. It was recommended that multiple Competent Authorities within a Member State be surveyed with a request that they coordinate their responses through the ‘main’ Competent Authority within the country. Member States will be given 4 months to respond to the survey and a report of the results will be provided to the next meeting of TRANSSAC.

Mr. Shaw, UK, presented WP 8 on the draft TECDOC report on EVTRAM (database for events in the transport of radioactive material). TRANSSAC endorsed the publication of the report as a TECDOC with the following modifications:

1. overall estimates on the number of packages shipped world wide should be given in ‘History and Background’ or in ‘Conclusions’ so that readers can put the number of events into perspective;
2. section 4.2.4 should be deleted since it does not sufficiently explain that the deaths were not related to the radioactive nature of the shipment;
3. in ‘History and Background’ it should be explained that the numbers presented are not normalized and caution should be used in interpreting the data;
4. additional explanation of the ‘peak’ on page 14 should be provided;

It was also recommended that this information on events be included in a suitable way in the Agency’s training courses on the safe transport of radioactive material. TRANSSAC endorsed the consultants’ recommendation to add to the data base any additional information which may become available for the period 1984-1993. It was recommended that the other
consultants’ recommendations be deferred pending the outcome of the Member State survey.

During consideration of WP10, recognition was given for the critical support which has been provided by the Canadian Competent Authority in the development of the transport data bases, particularly PACKTRAM. In consideration of the importance of the transport data bases, TRANSSAC recommends:

1. Member States be encouraged to use the new compiled version of the PACKTRAM system programme,
2. that the Agency continue annual updating and distribution of the Competent Authorities List and PACKTRAM,
3. that the Research and Development data base activities be deferred pending the outcome of the Member State survey on information needs. Additionally, it was noted that the European Commission should be included in the survey in order to determine their ability to supply information on their transport research and development activities.

Several members voiced support for the Agency’s utilization of the INTERNET for meeting its terms of reference to use modern information exchange technology, particularly in dealing with draft documents. Keen interest was expressed for determining how the INTERNET could be used to the fullest, including making available documents, data bases, TECDOCs, research abstracts, etc. It was noted that the Competent Authority List will soon be available on the INTERNET. It was requested that the Secretariat report to the next meeting of TRANSSAC the possibilities and plans for using the INTERNET.

Training
Ms. K. Burmester (IAEA, TC) presented information on the history, content, and plans for TC-sponsored training activities. Transport training course experience and plans were reviewed and observations were made that additional exercises and Russian-speaking lecturers would be useful for the regional courses directed to the former Soviet Republics. It was recommended that follow up activities with the students be explored and initiated, such as a contact point for correspondence with them. Additionally, it was recommended to provide information to them at the training course on fellowships that might be available after the course. The successful completion of courses in the United Kingdom, Germany, and France was noted as well as the forthcoming regional course in 1996 being hosted by Belgium and the inter-regional course in 1997 in the United States. The European Commission’s key role in supporting the regional courses was also noted with appreciation.

Recognition was given to the importance of keeping the training manual, exercises, visual aids, and Hypertrans all up to date with the latest version of the regulations and their supporting documents. It was strongly recommended that immediately following Board of Governors approval of the 1996 edition of SS6 that activities be initiated to update all of these materials. It was also recommended that the updated materials be provided to previous course attendees and that the feasibility of a one-week course be explored and reported to the next meeting of TRANSSAC.

Transport Safety Advisory Review Team
The meeting was presented with the proposals for TRANSART developed by the TCM on Compliance Assurance held in June 1995 and further refined by a CSM held in February 1996.
TRANSSAC endorsed the broad aim of improving implementation of the Regulations in Member States, but cautioned that the service needed to be fully thought through and closely linked to other IAEA services such as RAPAT, WAMAP, OSART and IRRT. The Secretariat took note of these observations, which had also been recognized by the CSM.

TRANSSAC was not opposed to the proposals laid down for TRANSART. As a result the Secretariat will take the next step of offering the service to Member States in the form of a letter. If Member States wish to make use of the service, the Secretariat will use the framework provided by the CSM to develop the service. The Secretariat will report back to TRANSSAC on any progress made, the level of interest shown by Member States and any lessons learned from any missions undertaken and follow-up activity.

Research Activities
The Secretariat reported progress with the three existing CRP's (WP13):
(i) the safety of UF₆ packages in fires;
(ii) accident severity at sea; and
(iii) quantitative data to support transport risk assessments.

The Secretariat also reported that the recommendation made by SAGSTRAM XI to establish a CRP to improve the radiological basis of the Regulations in respect of LSA and SCO material had been pursued. The proposal was submitted to the internal Agency committee for approval. It is envisaged that the first RCM will be held later this year. The Secretariat agreed to distribute copies of the proposal for this CRP.

TRANSSAC discussed further possibilities for CRP's that could be instigated in the future. It was recommended to establish a CRP dealing with issues arising from the air-mode at the earliest available opportunity. It was agreed that the AGM on modal issues to be held in October 1996 was an appropriate forum to develop the purpose and scope of the CRP. It is expected that this AGM will be attended by several ICAO Dangerous Goods Panel members and will be a good forum for this exchange of views.

TRANSSAC agreed that the CRP envisaged for land based modes of transport held a lower priority.

The European Commission has re-opened a budget line on radioactive materials transport safety which makes available funding for research and development activities. A number of proposals have been considered and several are being funded which are directly relevant to the Agency’s program, including on going and planned Coordinated Research Programs. It was agreed that, to ensure good coordination between these activities, the European Commission should be invited to present detailed information on their transport research and development activities at the next TRANSSAC meeting.
Revision of Safety Series No. 87
TRANSSAC was addressed by Mr. T. McKenna (IAEA, RSS) who outlined the plans for Safety Series documents on emergency planning and response falling under the programme of work overseen by RASSAC. In introducing WP 23, the draft objective, scope and structure of a revised SS No. 87, the Secretariat asked TRANSSAC to comment on any overlaps and gaps foreseen in the coverage of the IAEA Safety Series documents as a whole. Following discussion, the terms of reference for the meeting were endorsed subject to an emphasis being placed on the target groups of first responders, carriers and consignors. TRANSSAC also identified some additional sources of information for the up-coming TCM to review, including the RASSAC documents to avoid potential conflicts.

Review of the Long Range Work plan
During discussion of WP 4, TRANSSAC agreed that following completion of the current revision cycle, the priority for work lay with implementing the 1996 Edition. Within this context, the priority lay with implementation by the modes. The earliest date for implementation was noted to be 1 Jan. 1999, but simultaneous implementation will be essential to avoid confusion. TRANSSAC recommended that 1 January 1999 be established as the target date for implementation by all the modal organizations.

Following a further discussion of WP 6, the terms of reference for the mode related AGM in 1996, it was the opinion of TRANSSAC that air and sea issues would dominate the AGM. It was further agreed that the Secretariat should try to deal with air mode matters early in the week to maximize participation by the ICAO DGP members.

The Next Revision Cycle
In discussing the next revision cycle, TRANSSAC recommended to convene a CSM to review WP18 and the input received by the Secretariat in response to its letter canvassing the views of TRANSSAC members on the next revision cycle. The CSM should prepare a report for submission to TRANSSAC II and it was agreed that the CSM should be held no closer than 90 days to TRANSSAC II to enable any necessary consultation to take place. It was acknowledged that the outcome of TRANSSAC II would dictate the need for any follow-up TCM on this topic.

TRANSSAC noted the close link between the work plans for LSA/SCO and the WASSAC programme of work, as well as the development of the Waste Safety Convention. Close liaison among the Secretariat was encouraged. In general, it was agreed that the ACSS reports should be distributed to TRANSSAC members as well as relevant extracts from the other SAC committees. A TCM to identify the materials to be transported as LSA/SCO was seen to be desirable at an early stage in the planned CRP on LSA/SCO matters.

TRANSSAC was informed that in addition to the radiological basis of LSA/SCO, it may be necessary to convene a meeting related to the engineering aspects of large packages used to transport these materials i.e., freight containers, intermediate bulk containers and tanks.

The Secretariat reported on progress being made towards the revision and combination of SS No. 7 and SS No. 37 as given in WP 17. TRANSSAC recommended that this work be assigned the highest priority and supported the publication of this Safety Guide in other languages at the earliest opportunity. TRANSSAC recommended that the document be professionally edited.
prior to publication, acknowledging that the Regulations themselves were difficult to edit.

Support was given by TRANSSAC to the Secretariat exploring the feasibility of developing an expert system in support of the Regulations. TRANSSAC suggested that further thought be given to the development of practical transport safety manuals at the AGM in October 1996.

With regard to the complete set of transport safety series documents, attached is a summary of their status and content as approved by TRANSSAC.

1996 Revision of SS 6
Two issues remained open from Revision Panel 4 and had been recommended to TRANSSAC for resolution: conditional exemptions, and the definition of radioactive material. A Working Group was established to deal with the 7 submissions received on the topic of conditional exemption and WP 18, submitted by the RTSG, was accepted as the working document for dealing with the definition issue.

The Working Group on exemption reported their results in WP 25. Following detailed discussion, the Working Group recommendations were endorsed with:
- slight rewording of the recommended para. 107(e) to agree with the wording of the RTSG definition, i.e., changing “level in terms of” to ‘values for’;
- deleting item no. 3 in WP 25;
- adding the words “excluding fissile material in quantities not excepted under para. 672”

Discussion of WP15 and WP18 (page 8) led to the recommendation that the definition of radioactive material should be adopted in SS6 as follows:

"Radioactive material

236. Radioactive material shall mean any material containing radionuclides where both the activity concentration and the total activity in the consignment exceed the values specified in paras.

[NB. Paras 401-406 incorporate the exemption values cited in the Basic Safety Standards.]

It was further suggested that advisory and explanatory material be included in SS7/37 to clarify the differences between exclusions and exemptions as included in SS6.

It was also agreed that the explanatory material should state clearly that contamination at levels below those used to define surface contamination is a form of exemption. TRANSSAC also requested that further advice be provided on the meaning of the term "dose rate", as used in the Regulations.

During discussion of the finalization of SS6, it was noted that it would be useful to highlight the major changes between the 1985 and 1996 editions. Various options for doing this were considered and it was agreed that in the transmittal note forwarding SS6 to the Board of Governors for approval, the major differences between the two editions should be noted. The subjects of uranium hexafluoride requirements, Type C packages (including low dispersible material), fissile requirements, radiation protection programmes, and exemptions were examples of the major
changes which should be included. Additionally, it was agreed that information highlighting the changes should also be included in the combined Safety Series Nos. 7 and 37.

In considering WP19, Japanese comments on the A2 value for unirradiated enriched uranium, TRANSSAC agreed that the ASTM data could be used by the Q System Analysts to define the composition of uranium. This could be taken on board the work required to check Tables I and II of the revised Regulations.

TRANSSAC asked the Secretariat to consider the editorial suggestions for improving the Regulations as given in the report of RTSG (WP18).

The Member for France noted the high quality of the draft Regulation and endorsed submitting the document for publication as soon as possible, but voiced reservations about the concept of low dispersible material as a substitute for the use of type C packages. Arguments against this approach were, as requested by the Secretariat, presented by the French delegation in an information paper. In endorsing the document, the Member for UK expressed concern that some sources for medical use would become subject to the provisions for Type C packages, if transported by air.

The Secretariat reminded TRANSSAC that the Committee was empowered to reject the draft if the Membership held reservations that were sufficiently strong. The Chairman offered the floor to TRANSSAC members for further statements: as there were no further statements, the draft was declared to be endorsed and TRANSSAC recommended publication as soon as possible.

TRANSSAC was informed that the Secretariat will take action to submit the draft Regulations to the Board of Governors for approval in June 1996.

TRANSSAC paid tribute to the work undertaken by the very large number of people who had participated in the Revision Process.

Lessons learned from TRANSSAC-1
The Secretariat took note of the observation that TRANSSAC-1 had been a transition meeting between SAGSTRAM and TRANSSAC. It was accepted that there had been confusion about the role of TRANSSAC in finalizing the 1996 Edition of the Regulations compared to its role in advising on the future work programme. There was uncertainty as to whether its role was to provide strategic direction to the work programme or to act as a senior technical review body. Discussion suggested that TRANSSAC should be a senior level technical body, that must detach itself from the technical detail and focus, as a high priority, on the consistency of international Regulations.

The Secretariat understood that Members felt a need for more protocols to be established for working procedures and the handling of working papers, including those submitted by third parties.
Reporting
TRANSSAC agreed that the format of this report seems to provide an appropriate level of detail. It was agreed that it should be distributed to TRANSSAC members as a draft, allowing a short period for comment.
SUMMARY REPORT OF TRANSSAC ON THE SAFETY SERIES DOCUMENTS
FOR THE SAFE TRANSPORT OF RADIOACTIVE MATERIAL

TRANSSAC met for the period 26 February - 1 March 1996 and reviewed the proposed Transport Safety programme. The meeting was attended by representatives of 18 Member States and representatives of 5 international organizations. In respect of the Safety Series documents, TRANSSAC made the following recommendations/endorsements:

Safety Standards:

Safety Series No. 6 Regulations for the Safe Transport of Radioactive Material

To submit the 1996 Edition of the Regulations for the Safe Transport of Radioactive Material for publication as soon as possible.

The Schedules of Requirements for the Transport of Specified Types of Radioactive Material Consignments will be included in Safety Series No. 6 in accordance with a recommendation of the Division of Publications. These Schedules have been previously published separately as a Guide, Safety Series No. 80, but are regulatory in nature.

Safety Guides:

Safety Series No. 7 Explanatory and Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material

The explanatory and advisory material in support of the Regulations will be combined into a single document. Previously these documents have been published separately as Guides, Safety Series No. 7 and 37.

TRANSSAC assigned a high priority to the work needed to complete the Safety Guide and recommended that the Agency publish the Guide in English, French, Spanish and Russian as soon as possible following publication of the Regulations in these languages.

Safety Series No. 87 Emergency Response Planning and Preparedness for Transport Accidents Involving Radioactive Material

Following a presentation on related Safety Series documents within the RASSAC work programme, TRANSSAC approved the terms of reference for revising Safety Series No. 87. Attached to this report are the draft objective, scope and structure for the document. TRANSSAC supported the convening of a TCM in September 1996 followed by 2 CSM's leading to a projected publication date of 1998.
Safety Practices:

Safety Series No. 112 Compliance Assurance for the Safe Transport of Radioactive Material

Acknowledging that this document was published as recently as 1994, TRANSSAC made no recommendations for its revision.

Safety Series No. 113 Quality Assurance for the Safe Transport of Radioactive Material

Again, acknowledging that this document was published as recently as 1994, TRANSSAC made no recommendations for its revision.
Revision of Safety Series No. 87

**Category of Safety Series:** Safety Guide

**Proposed title:** Emergency response planning and preparedness for transport accidents involving radioactive material.

**Objective:** To provide assistance to public authorities, such as emergency services, and others, including consignors and carriers, who are responsible for establishing and maintaining an effective response to transport accidents involving radioactive material. In particular, the information should supplement emergency plans for transport accidents involving other classes of dangerous goods.

**Scope:** The document will apply to all radioactive material falling within the scope of the IAEA Regulations for the Safe Transport of Radioactive Material (1996 Edition). In general, the advice will be generic to accidents occurring on land or at a port and apply to all modes of transport, however supplementary advice is provided for accidents occurring in the marine environment when relevant. The loss (requires definition) or theft of radioactive materials is not covered in this document. The document will complement the document being prepared under RASSAC.

**Structure:** The 1996 Edition of the Regulations introduces a rational set of UN Numbers for radioactive materials. These UN Numbers key into emergency plans in a language independent way. The Safety Guide will provide a set of emergency procedures covering each of the UN Numbers which include the words " RADIOACTIVE MATERIAL" as part of the Proper shipping name. It is expected that some emergency procedures will be common to several UN Numbers. This will lead to a reduction in the number of emergency procedures and eliminate needless repetition. Where appropriate, an emergency procedure will include advice covering transport accidents occurring in the marine environment. An explanation of the package markings, labels, placards and transport documents as well as examples of response to transport accidents could be provided. The EVTRAM database will be a useful source of case histories.
Sources: Existing SS No. 87.
IMO Emergency Schedules.
Existing emergency Plans developed in Member States.
OPRC working group (of the IMO) draft guidelines for the development of emergency plans for vessels carrying material subject to the INF code.
RASSAC documents on emergency response (to ensure compatibility)
Emergency Handbook prepared by EC sources
ICAO Emergency Response Guidance for Aircraft Accidents.