NBSIR 87-3573

Proceedings of Conference on Standards and Trade

Walter G. Leight, Editor

U.S. DEPARTMENT OF COMMERCE
National Bureau of Standards
Office of Product Standards Policy
Gaithersburg, MD 20899

June 1987

U.S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS

NBSIR 87-3573

PROCEEDINGS OF CONFERENCE ON STANDARDS AND TRADE

Walter G. Leight, Editor

U.S. DEPARTMENT OF COMMERCE
National Bureau of Standards
Office of Product Standards Policy
Gaithersburg, MD 20899

June 1987

U.S. DEPARTMENT OF COMMERCE, Malcolm Baldrige, *Secretary*
NATIONAL BUREAU OF STANDARDS, Ernest Ambler, *Director*

TABLE OF CONTENTS

ABSTRACT

The International Trade Administration and the National Bureau of Standards sponsored a one-day Conference on Standards and Trade on May 5, 1987. These Proceedings contain the texts of speeches by Government officials and representatives of the business and standards communities; summaries of question-and-answer periods; and reports of Working Groups that addressed Participation in International Standardization Activities, Test Data Acceptance, and Adoption of U.S. Standards.

ACKNOWLEDGEMENTS

The preparation of these Proceedings would not have been possible without the generous cooperation of the speakers, Working Group Chairs, and their office staffs. Administrative arrangements for the Conference were effectively carried out through the efforts of Mrs. Sarah Torrence and Ms. Wanda Capino at the National Bureau of Standards, with special thanks to Mrs. Judith Baker of the NBS Office of Product Standards Policy for her meticulous attention to details before, during, and after the Conference and in the transcription of audio tapes.

EXECUTIVE SUMMARY

The International Trade Administration and the National Bureau of Standards, of the Department of Commerce, sponsored a one-day Conference on Standards and Trade on May 5, 1987. The purpose of the Conference was to identify and explore possible actions by the Government and the private sector to enhance U.S. trade through promoting U.S. standards, and the technology they embody, in foreign countries and international organizations.

The Conference was co-chaired by the Honorable Bruce Smart, Under Secretary for International Trade, and Dr. Ernest Ambler, Director of the National Bureau of Standards. The first of three segments was comprised of presentations by officials of the U.S. Government: the Honorable Clarence Brown, Deputy Secretary of Commerce, the Honorable Michael Smith, Deputy U.S. Trade Representative, and Ambassador Diana Lady Dougan, U.S. Coordinator, Bureau of International Communications and Information Policy, U.S. Department of State. They stressed the need to improve the national trade picture, described ongoing efforts by the Government under the GATT Agreement on Technical Barriers to Trade (the "Standards Code"), bilateral negotiations on standards-related trade problems, participation in treaty organizations and other government-to-government international committees, and the status of the current Uruguay Round of Multinational Trade Negotiations (MTN) talks. They expressed receptiveness to private sector views and their willingness to apply available resources to strengthen our trade position, especially in the international standards arena.

The second group of morning speakers addressed standards-related concerns of the business community. Dr. Peter Bell, Vice President of Corporate Technology, Norton Company, focused on export controls and expressed the desire for a single Federal regulatory focus. Dr. Peter Bridenbaugh, Vice President for Research and Development, Alcoa, emphasized the need for U.S. leadership in technology and the development of the best technical standards possible. Mr. C. Scott Kulicke, Chairman and Chief Executive Officer, Kulicke and Soffa Industries, Inc., described the activities of the Semi-conductor Equipment and Materials Institute (SEMI) and the necessity for rapid development of new standards in a changing technological environment, as well as participation by foreign nationals in standards-developing bodies, both in the United States and elsewhere.

Private sector participation in international standardization was the subject of the third part of the morning session. Dr. Robert Baboian, Chairman of the ASTM Board, underscored the importance of using the best technical standards available as *de facto* international standards, ASTM's role in international standards committee work, and in cooperating with the standards bodies of other countries. Dr. George S. Wham, Chairman, American National Standards Institute, described the private sector standards system and how ANSI functions as the member body to ISO and IEC.

Three Working Groups met in the early afternoon as follows:

WG-1 Participation in International Standardization Activities
Chair: Catherine Kachurik, Director, X-3 Secretariat
Secretariat: JoAnne Overman, NBS

WG-2 Test Data Acceptance
Chair: Gerald Ritterbusch, Caterpillar, Inc.
Secretariat: Patrick Cooke, NBS

WG-3 Adoption of U.S. Standards
Chair: Barbara Boykin, Aerospace Industries Association
Secretariat: Christopher Bates, ITA

Reports by the Chairs of the Working Groups at the closing plenary session of the conference reiterated the view that the private sector should lead in choosing and implementing courses of action. They all cited the importance of outreach programs in educational institutions and public relations campaigns in order to arouse greater public support for standardization activities. They stressed the need to convince business management that participating in international standards development and related activities produces the "bottom line" of long-term profitability, and the belief that industry will always demand the best standards for the international marketplace.

WG-1 suggested that the private sector seek funding by collections under a budgeted, equitable system or by special assessment. Hosting meetings in the United States would reduce costs to U.S. participants and benefit foreign counterparts through favorable exchange rates. The Group proposed media and educational campaigns to convince corporate executives and managers of the long-term value of participating in international standardization activities and to attract replacements for retiring "elder statesmen." The Government should seek industry opinion, be responsive and reactive to standards needs, and support positions in GATT talks and other negotiations.

WG-2 proposed that at all levels we promote acceptance of test data by other countries, including the current Uruguay Round of Multinational Trade Negotiations, bilateral negotiations, and the GATT Standards Code Committee. Voluntary laboratory accreditation programs, self-certification, third-party testing, and witnessed tests in the United States could reduce testing costs, with treatments matched to products and markets. An industry program should publicize certification programs, their costs, and significance.

The third Working Group advised that industry "think internationally" about standards and trade, adapting to the needs of international markets and abandoning nationalistic approaches; strengthen representation in ISO and IEC to encourage adoption of U.S. standards; pursue harmonization efforts with the European Community; promote awareness and availability of U.S. standards to potential users abroad; educate U.S. Government officials overseas about standards; preserve private sector leadership and enhance Government-industry cooperation.

The complete texts of speaker presentations, summaries of question-and-answer periods, and the reports of the Working Groups are contained in the main body of these Proceedings.

ITA/NBS CONFERENCE ON STANDARDS AND TRADE
CHAIRMAN'S WELCOMING REMARKS
May 5, 1987

- I am pleased to welcome you to the Conference on Standards and Trade, an event sponsored jointly by the National Bureau of Standards and the International Trade Administration.

- Our primary objective for this Conference is to stimulate discussion on how the United States can increase exports by eliminating technical barriers to trade and promoting wider international acceptance of standards based on American technology.

- The conference program brings together experts from U.S. business, the private standards development community, and government to address this important issue.

- This morning we will hear from distinguished speakers from each of these groups. We have asked them to focus their remarks on what can and should be done by various members of the U.S. standards community to promote trade through standards activities.

- In afternoon working group sessions we will have the chance to discuss ideas presented by these speakers and to add our own observations. At the end of the day each working group will report back to the full conference on its findings and recommendations.

- We hope all participants will use this opportunity to raise new ideas on how government and industry, individually and jointly, can strengthen U.S. standards-related activities in ways that will have a significant positive impact on our long-term trade performance and international competitiveness.

- The importance of this effort should not be underestimated. We face unprecedented challenges to our technological and commercial leadership at home and abroad. We are struggling to reduce huge trade and budget deficits and to avoid a further worsening of our international debtor position.

- While U.S. business has taken major steps to meet increased competition, much more must be done, particularly in coming to grips with foreign market requirements. The U.S. standards community has a critical role to play in helping American industry meet these requirements.

- No single approach will work, because the problems we encounter vary considerably by product and market. Flexibility in standards-development activities is the key to future success, and private sector bodies must continue to take the lead role. Government has an important supporting role to play, which must evolve to reflect the changing standards environment and needs of U.S. business.

- As exporters, U.S businessmen often are faced with a difficult choice between adapting their products at high cost to meet existing foreign standards or accepting a more limited foreign market share than they otherwise might achieve. We frequently face a similar dilemma regarding foreign testing requirements.

- In too many cases, foreign mandatory standards or other technical requirements cannot be justified on health or safety grounds and serve as effective barriers to our exports. In such cases, effective government and industry cooperation may be the only means to achieve an acceptable solution.

- In other instances, however, we may be in a position to push for international harmonization of standards based on existing U.S. standards and/or the technology they embody. We may also have the opportunity to encourage foreign standard development bodies to move more quickly toward reliance on performance- rather than design-based standards.

- In an environment of rapid technological change and growing worldwide competition, we constantly must be on the lookout for new opportunities to promote exports through standards-related activities.

- Deputy Secretary Brown, our keynote speaker, has a long-standing interest in the subject of standards and trade and a full appreciation of the significance of the U.S. standard community's work in international fora. I am confident that he and our other speakers will give us an exciting morning program.

Honorable Clarence J. Brown
Deputy Secretary of Commerce

Keynote Address before the
ITA/NBS Conference on Standards and Trade

Washington, D.C.
May 5, 1987

I am pleased to be with you this morning because of my strong interest in trade and in worldwide acceptance of product and material standards based on U.S. technology.

This conference is somewhat different from the conventional recital in that representatives of Government will discuss the overall trade picture and what we are trying to do about it, then leaders of industry and the standards community will get down to cases and offer suggestions for separate or joint courses of action.

Our trade deficit is now at an all-time high. We have gone from the world's major creditor nation to the most indebted, and our merchandise trade deficit in 1986 was close to $170 billion.

To remedy these grim statistics, the President has enunciated a Competitiveness Initiative: among other things, we seek to promote science and technology; to protect intellectual property rights; and to strengthen our position in the international trading arena by emphasizing the advantages and resources that America has at her command.

The Government has increased its efforts to transfer the research output of Federal laboratories to the private sector. Each major governmental R&D laboratory, including the Commerce Department's National Bureau of Standards and its National Oceanic and Atmospheric Administration, has under law established an Office of Research and Technology Applications to help nurture product and industrial development. The Department of Energy, with advice from the Office of Energy-Related Inventions at the National Bureau of Standards, supports the development of promising processes and products.

Government agencies are increasing their emphasis on cooperative research ventures with the private sector, such as the extensive undertakings conducted at the Automated Manufacturing Research Facility of the National Bureau of Standards.

The Department of Commerce has been active in efforts to reduce or eliminate technical barriers to trade under the GATT Standards Code, working with our colleagues at the Departments of State and Agriculture and with the Office of the U.S. Trade Representative. We regularly participate in multilateral meetings and in bilateral consultations with other signatory

governments - including Japan, the European Community, Great Britain, Canada, France, West Germany, and Spain. We are also working actively to establish a Free Trade Agreement with Canada.

The two key areas that have been and are expected to remain quite important for the future concern mechanisms for resolution of disputes and for mutual acceptance of valid test data. The latter problem is the concern most frequently expressed by U.S. manufacturers and exporters, namely the burdensome, expensive, and time-consuming approval procedures and certification practices imposed by some foreign governments.

Negotiating reciprocal acceptance agreements represents a new mechanism for reducing barriers to testing and certification.

Through bilateral and multilateral consultation, the Government has assisted private sector interests in gaining the right to participate in foreign standards development activities; to have U.S.-generated test data accepted in foreign countries; and to work toward non-discriminatory treatment of U.S. suppliers by foreign certification systems.

We usually work on a case-by-case basis, especially with respect to single country issues that can be addressed in bilateral discussions. Where appropriate, we are ready to seek general solutions to more complex problems.

The major purpose of today's conference is to obtain your inputs and advice with respect to the standards and trade issues that face us as a nation.

- What should the United States Government be doing more of, less of, or differently?

- What courses of action should properly be adopted by the private sector?

- What are your recommendations for tasks that should be undertaken jointly by the Government and the private sector?

We are fortunate to have with us today Michael Smith, Deputy U.S. Trade Representative, who will discuss our multilateral efforts to remove technical barriers to trade under the aegis of the General Agreement on Tariffs and Trade, and Ambassador Diana Lady Dougan, who will describe governmental participation in telecommunications standards bodies.

I assure you that President Reagan, Secretary Baldrige, and I have a strong commitment to rectify the worsening trade picture

and to strengthen the U.S. economy. I therefore welcome your views and recommendations, which I intend to study carefully.

Thank you.

Co-Chairman Ernest Ambler
Director, National Bureau of Standards

INTRODUCTION OF AMBASSADOR MICHAEL B. SMITH

IT IS MY PLEASURE TO INTRODUCE THE HONORABLE MICHAEL B. SMITH, DEPUTY U.S. TRADE REPRESENTATIVE.

AMBASSADOR SMITH JOINED THE FOREIGN SERVICE SOON AFTER HIS GRADUATION FROM HARVARD COLLEGE IN 1958, SERVING IN TEHRAN; N'DJAMENA, CHAD; AND STRASBOURG AND LYON, FRANCE.

FROM 1970-1973 HE SERVED AS CHIEF OF PRESIDENTIAL CORRESPONDENCE, THEN BECAME CHIEF OF FIBERS AND TEXTILES DIVISION, DEPARTMENT OF STATE. HE WAS APPOINTED CHIEF TEXTILE NEGOTIATOR OF THE UNITED STATES, IN USTR, WITH THE RANK OF MINISTER, AND WAS ELEVATED TO THE RANK OF AMBASSADOR WHEN THE POSITION WAS IN 1978 REDESIGNATED AS CHIEF NEGOTIATOR FOR TEXTILE MATTERS.

AMBASSADOR SMITH WAS NAMED DEPUTY U.S. TRADE REPRESENTATIVE AND U.S. REPRESENTATIVE TO GATT IN GENEVA IN 1979, RETURNING TO WASHINGTON AS DEPUTY USTR IN 1983.

HE WILL SPEAK TO US TODAY ABOUT THE GATT STANDARDS CODE AND ITS BENEFITS TO EXPORTERS, AND WILL DISCUSS PROGRESS IN THE ONGOING URUGUAY ROUND OF NEGOTIATIONS. HE WILL ALSO DESCRIBE SOME OF THE ACTIVITIES IN OUR TRADE RELATIONS WITH JAPAN AND OTHER COUNTRIES, WITH SPECIAL EMPHASIS ON INTERNATIONAL STANDARDS AND THE ACCEPTANCE OF U.S.-GENERATED TEST DATA. AMBASSADOR SMITH.

AMBASSADOR MICHAEL B SMITH
Deputy U.S. Trade Representative

Speech before the
"Conference on Standards and Trade"

Washington, D.C.
May 5, 1987

Introduction

Thank you Bud [Brown] and Bruce [Smart].

Good morning ladies and gentlemen. My name is Michael Smith -- I am the deputy U.S. trade representative.

In case you are not familiar with the Office of the U.S. Trade Representative (called "USTR"), let me start by explaining that USTR is responsible for coordinating U.S. trade policy.

We handle problems in a wide range of areas -- from corn and soybeans to microchips and supercomputers. Somewhere along the way between those two extremes, we are also involved in standards related trade issues.

USTR and Standards Community

For more than fifteen years, USTR has worked with the American private standards community:

- we first starting working together on a 'code of conduct' on standards, which eventually became the GATT "Agreement on Technical Barriers to Trade" and is popularly called the "Standards Code"; and,

- we continued to work together while obtaining Congressional approval of the Code in 1979 and when we set out to make it work, both at home and overseas.

I hope that this long history of cooperation will keep going on.

Standards Code: Benefits to Exporters

After the Standards Code was completed in 1979, the U.S. Congress gave USTR the primary responsibility for its implementation in the United States. Since then, we have worked with other sister agencies in ensuring that U.S. exporters obtain maximum advantage from the Code.

For example, now exporters have the chance to comment on foreign regulations before they are set in concrete. In this way, a majority of standards problems are resolved before they can become trade barriers. Before the Code, Americans did not have the opportunity to comment on foreign rules while foreigners enjoyed to right to provide their comments directly to U.S. regulators.

The Code also provides procedures for resolving disputes. These procedures have been used against the Spanish approval system for medical devices, the Japanese system for aluminum softball bats and, currently, are being used against the EC's directive on animal hormones.

Standards Problems and Japan

Perhaps the most important standards case on which I have worked involved Japanese procedures for approving softball bats. Before 1983, each shipment of American-made bats was checked by Japanese inspectors.

Japanese regulators would not accept U.S.-generated test data nor permit American producers to use "type approval" procedures. While cracking the case -- as we did -- we also succeeded in changing eighteen Japanese regulatory statutes that similarly discriminated against non-Japanese producers.

Great efforts have been made in opening the Japanese market further to U.S. products. Since 1979, USTR has led standards related trade talks and, in 1985, we initiated the "market-oriented, sector-selective" (or M.O.S.S.) talks. U.S. industry agrees that the M.O.S.S. talks on telecom equipment and medical devices have assisted U.S. companies selling in Japan.

Standards Bilaterals in Europe

USTR has also focused its energies on resolving European standards related trade problems. Talks have been held with all of our significant European trading partners and particularly the Commission of the European Communities -- the EC.

The EC has a wide range of activities in the standards area aimed at fostering industrial competitiveness and promoting European industry and agriculture. As with Japan, American exporters also report that these USTR-led talks have assisted in breaking down European trade barriers.

The Europeans have ambitious plans aimed at establishing by 1992 a single market among the twelve member states. This effort focuses on radical changes in EC standardization and certification procedures.

These changes are based on the Standards Code, but go further:

- they have set up an elaborate network for exchanging information on draft rules and for calling a halt to rulemaking that threatens to create trade barriers; and,

- they have agreed on the mutual acceptance of test data to facilitate equipment approvals and have initially focused on developing a model program for telecom terminal equipment.

For these reasons, I believe that we must pay careful attention to the EC's standards activities, largely because the EC has understood the connection between "standards" and "trade". They now intend to manipulate this connection to their benefit.

Standards-Related Trade Problems

There are a number of practices that create problems in the standards area; these include:

- the failure to use international standards,

- the reliance on unique national standards,

- the non-acceptance of foreign-generated test data, and

- the use of complicated approval procedures.

U.S.A. and International Standards

For a reason that has never been clear to me, Americans fear the active use of international standards. There is an often repeated sentiment that using international standards somehow violates the American sovereignty. This view works against the interests of U.S. exporters and, in the long term, of U.S. standards developers.

- We must strive to involve ourselves more deeply in international standardization and certification. This includes making sure that each company and industry supports to the American member body in the ISO [International Organization for Standardization] and the IEC [International Electrotechnical Commission].

- We should be active members of international committees, leading the work to ensure that it is based on American technology. International trade relies heavily on standards and, in the future, will increasingly use international standards. If these standards have an American hue, then we will benefit. Furthermore, as many other countries--Germany, Sweden and Japan, to name three -- have made this realization, I believe that we can not allow ourselves to fall behind.

Future Work: Testing and Approval

American exporters continue to complain about the lack of foreign acceptance of U.S.-generated test data. They also argue that approval procedures around the world should be simplified and depend more on manufacturers.

Indeed, an analysis of USTR's work since completion of the Standards Code in 1979 reveals that testing and approval are the two areas most often complained about by U.S. exporters.

Uruguay Round

I believe that these two issues can be solved in the new round of trade talks that were inaugurated in 1986 -- called the "Uruguay Round". These talks are concentrating on draft new trade rules to cover services, investment and intellectual property. The Uruguay Round will also review current GATT arrangements and agreements to see if they need improvement.

The United States has already identified the fact that the Standards Code's coverage of testing and approval needs adjustment. The work towards achieving this goal started years ago, within the Standards Code Committee. In that group, the United States has circulated proposals regarding the acceptance of test data and the simplification of approval procedures.

The initial results of this effort are good. The Standards Code Committee agrees that the single most important standards issue for review in the Uruguay Round is that of "testing". Unanimity of this kind is rare in the Committee. That being said, the Committee does not agree on how to accomplish this goal. In fact, the Committee continues to struggle to develop an agreed approach. I am confident that this work will proceed as work proceeds in other areas of the Uruguay Round.

Private Sector Assistance

Our expectations for the Uruguay Round are grand and will not be accomplished over night. In order to finish the job before us, we at USTR and in the U.S. Government need your help.

- We need the assistance of U.S. standards developers in promoting the use of internationally agreed standards.

- We need help from U.S. testing and certification bodies in supporting our effort to draft rules on the acceptance of data and the simplification of approval procedures.

- We need the support of U.S. industry for our efforts and, particularly, in the discussion with standards developers and certification bodies.

Co-Chairman Ambler

INTRODUCTION OF AMBASSADOR DIANA LADY DOUGAN

I AM PLEASED TO INTRODUCE THE HONORABLE DIANA LADY DOUGAN, U.S. COORDINATOR FOR INTERNATIONAL COMMUNICATIONS AND INFORMATION POLICY AT THE DEPARTMENT OF STATE.

AMBASSADOR DOUGAN WAS NAMED THE FIRST COORDINATOR FOR INTERNATIONAL COMMUNICATIONS AND INFORMATION POLICY IN 1983 AND IN 1985 WAS ASKED BY SECRETARY OF STATE GEORGE SCHULTZ TO ORGANIZE AND DIRECT A NEW BUREAU BY THE SAME NAME IN THAT DEPARTMENT. FROM 1976 TO 1983, SHE SERVED AS THE DIRECTOR OF THE CORPORATION FOR PUBLIC BROADCASTING. EARLIER IN HER CAREER, SHE WAS CATV MARKETING AND PROMOTION DIRECTOR FOR TIME, INC. SHE ALSO HAS BEEN ACTIVE IN A VARIETY OF PUBLIC SERVICE AND CULTURAL ACTIVITIES.

AMBASSADOR DOUGAN CURRENTLY WORKS WITH OVER 14 U.S. GOVERNMENT AGENCIES IN DEVELOPING U.S. COMMUNICATIONS POLICIES ABROAD. IN ADDITION TO BILATERAL RESPONSIBILITIES, SHE AND HER STAFF OVERSEE AND/OR REPRESENT U.S. INTERESTS IN VARIOUS MULTILATERAL FORA. THESE INCLUDE THE INTERNATIONAL TELECOMMUNICATIONS UNION (ITU), THE INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO), THE WORLD INTELLECTUAL PROPERTY ORGANIZATION (WIPO), AND THE ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT (OECD) AMONG OTHERS.

AMBASSADOR DOUGAN IS UNIQUELY QUALIFIED TO DISCUSS U.S. GOVERNMENT PARTICIPATION IN INTERNATIONAL STANDARDS FORA AND TO SUGGEST WAYS IN WHICH THE U.S. GOVERNMENT AND PRIVATE INDUSTRY CAN COOPERATE EFFECTIVELY IN PROMOTING TRADE THROUGH STANDARDS ACTIVITIES.

Remarks of

Ambassador Diana Lady Dougan

U.S. Coordinator and Director

Bureau of International Communications

and Information Policy

Department of State

Delivered to

A Symposium on Standards

Sponsored by the National Bureau of Standards

at the Department of Commerce

on

May 5, 1987

Good morning. I'm delighted to be here, and I applaud the Department of Commerce in hosting this symposium on standards setting. With increased attention to U.S. competitiveness abroad, it is ironic that so little attention has been given to the role of standards in the international context. In the past, because of our vast domestic market, we have often been able to remain relatively unconcerned about different technical standards in use abroad. With the increasing globalization of the marketplace, we can no longer think in terms of foreign influences gently lapping at our shores. Instead they are invading them in all sorts of ways.

In telecommunications, the difference in standards has long been evident to the American traveler abroad. For example, when you turn on the television set in Europe, you may be somewhat surprised that the picture is generally crisper than in the United States. That's because the European standard of 625 lines of resolution, as opposed to our 525, gives more refinement to the picture. But if you ever tried to negotiate a pay telephone in Paris or get your electric razor or hair dryer to work in most foreign hotels which are not part of an international chain, the problems and complexities of international standards setting become very real.

Today I want to talk about telecommunications -- the whole world of common carrier services, broadcast media, and computers. They are important to you and your daily life, regardless of the industry you are in; they are the technological arteries of international commerce. As a result, studying telecommunications standards is going to be important to you whether you are selling tractors or soft drinks.

This morning I would like to give you a brief outline of how the international standards setting process is involved in telecommunications. I would also like to outline a few of our

U.S. preparatory efforts, as well as some of the challenges I see for us collectively.

First of all, let's establish that there are various kinds of standards. The first standard is no standard at all. The second, which many view as a de facto standard, is one which evolves by history, a fluke of circumstances, good luck, or just because it's excellent. The third type is voluntary standards that meet most international requirements, and the fourth type is treaty-based standards. It's these latter two that I would like to focus on this morning.

There a number of international organizations that deal with standards related to telecommunications. Two of them are the International Standards Organization and the International Electrotechnical Commission; both are basically voluntary bodies. The third such organization is the International Telecommunication Union (ITU), an intergovernmental body established by treaty. I would especially like to draw your attention to the ITU, which is where we have the greatest opportunities and the greatest challenges.

As others have pointed out, government bodies love acronyms. Telecommunications is the dessert tray of acronyms. Within the International Telecommunication Union, two of the most important acronyms are CCIR and CCITT. CCIR stands for the Consultative Committee on International Radio. The United States maintains a national public advisory body for the CCIR; that body is headed by Richard Shrum, the Director of my Bureau's Office of International Radio Communications. CCITT stands for the Consultative Committee on International Telephone and Telegraph. The U.S. public body for the CCITT is headed by Mr. Earl Barbely, the Director of my Bureau's Office of Technical Standards and Development.

The CCIR addresses issues related to broadcasting, radio spectrum allocation, the geostationary orbit, and questions associated with signals transmitted over the air. Within the United States, the Interdepartmental Radio Advisory Committee, chaired by the Department of Commerce, manages the federal government's use of the spectrum; and the Federal Communications Commission manages the private sector's use of the spectrum. The State Department's national advisory committee is the focal point for bringing the domestic considerations into the international context. Increasingly, it is becoming involved with standards setting.

Standards for high-definition television has been one of my priorities in the CCIR this past year, and this effort is a good example of the dynamics of international standards setting. High-definition television has enormous potential for medical and scientific uses, as well as for broadcast purposes. If it gets off the ground, it will launch a multi-billion dollar industry. More importantly, if an international standard can be adopted, much of the historic technical incompatibilities of global television will be, for the first time, substantially struck down.

Many of you may have read about high-definition television. It's basically a technology that produces an extremely refined television picture, just as the current television standards in Europe provide a better picture than in the United States. Current U.S. television consists of 525 lines of signal transmission; high-definition television would more than double that, raising the number to 1125 lines.

Just envision a picture with twice as much clarity and refinement. Anyone who has looked at a big-screen TV in a bar or at a friend's house knows that most big-screen TVs in the United States leave a lot to be desired. The graininess and unsatisfactory resolution are all too evident.

In the case of high-definition television we had an interesting dilemma. The networks came to us and said they knew that we needed an international standard for high-definition television. If we don't get one, they said, we're going to have the same problems as with standard television; North American equipment and broadcast signals would once again be incompatible with those of Europe and the rest of the world. They added that a standard for high-definition television is not only important from the production standpoint, it is imperative to achieving the broader economies necessary to get the technology off the ground.

I agreed to host some "headbashing" under the auspices of the U.S. Government's formal national advisory committee for the CCIR. However, I set a very important condition on the U.S. Government's involvement. We would not get involved in deciding what the standards should be. If U.S. industry could come to an agreement, we would go to bat for them in the CCIR in Geneva. The process had to be voluntary. It had to be based on industry consensus.

The irony was that the best standard that anyone could come up with was one developed by the Japanese. I need not say to this group that a few people were choking on their sake at the idea of the U.S getting out front and supporting a Japanese standard, but that's ultimately what we did -- because it was in fact the best standard.

After what I must say was a healthy amount of headbashing, the U.S. television industry came up with a unanimous conclusion to support the Japanese standard. We kept out end of the bargain and suited up to take the ball onto the international playing field in Geneva. Some of the things that came out of the locker rooms are instructive in the standards process generally. The engineers in Europe concurred with the engineers in the United States and Japan that this high-definition

standard was by far the best and the most workable from technical and manufacturing standpoints. But the Europeans not only did not support the consensus, they mounted an aggressive campaign opposing it. The reasons were economic. The European companies weren't in a position to build the TV sets to receive these high-definition television programs. They also had spent millions of dollars in research and development, and were reluctant to give up on their investments.

When we went to the CCIR meeting, we knew that we had a lot more than political dust in the air while we were trying to negotiate this. In the end, we got a marginal sort of "footnote" amounting to preliminary acceptance, but the standards setting process was by no means over. On the other hand, the real "footnote" to the process is that the technology which underlies the proposed standard for high-definition television is gaining wider and wider recognition, and I predict that this technology will ultimately become a de facto standard.

The CCITT is the second, equally important dimension of the ITU's standards-setting arena. The CCITT deals with the standards which relate to telecommunications equipment, interconnection, service definitions, and tariff principles. Thus the CCITT figures out the rules of the road for international common carriers. Increasingly, computers, data processing, and the so-called "IT" (information technology) have become the new focal point of this traditionally telecommunications-oriented forum.

Thus one of our priorities has been working with the CCITT to minimize the amount of overlap with the International Standards Organization, because many of the issues which traditionally would have been looked at in the International Standards Organization have now entered the realm of the ITU. Collectively, we have been successful, mainly because the international head of CCITT, a German gentleman by the name of

Mr. Irmer, has been wonderfully unbureaucratic in his approach to working with the International Standards Organization. What started out as a serious problem of overlap can now be put on the back burner.

In contrast, the CCITT's front-burner items affect international commerce in many ways. For example, pay telephones will undoubtedly continue to be bastions of frustration throughout the world. But we've recently reduced the headache level by a substantial degree. Building on months and months of meetings, we have successfully negotiated a basic protocol for international credit card calls. Without such a standard, the morass of local procedures and regulations would forever prevail.

U.S. goals in the standards setting process are rather simple. We want the standards setting process to be open; we want it to be transparent; we want it on a consensus basis whenever possible; and we want the content to be generated by industry rather than by government. Now those sound like pretty straightforward goals, and their efficiencies and economies have enormous potential. So it shouldn't be much of a problem to promote these goals. But as you will see, we have run into quite a few problems in carrying these concepts forward internationally.

First of all we're having difficulty in getting U.S. industry to show sufficient commitment and be active enough in the international standards setting process. It is almost an irony that as other countries become more active and send more representatives to Geneva, we seem to send fewer. Part of the reason is the long history of deferring to a few U.S. companies, and sometimes a few individuals, to carry the day for us. The breakup of AT&T had no small impact on our ability to have a thorough approach to international standards setting.

But an equally important factor is the "third-quarter balance sheet" mentality. This makes it hard for companies to justify sending someone off to Geneva to negotiate for three or four weeks when the outcome won't mean anything to the company for four or five years. And as eveyone does a little belt tightening, it becomes harder and harder to pursue activities which correspond to long-haul strategic interests rather than immediate advantages.

There is yet another irony to the shortsightedness of U.S. industry. This stems from the fact that the international standards setting environment is a great place to make contact, a great place to nurture your own innovations and develop new markets. It's also an excellent window on the developing world.

To a certain degree, the international standards setting process involves technology transfer to the Third World. Although a number of developing countries do not actively participate in the CCITT and CCIR process, their representatives are there; they learn, and they are impressed with those they meet -- not those they don't meet.

Standards setting must necessarily tread a narrow line: a standard must be specific enough so that an industry can develop and technologies can grow, but not so detailed as to thwart innovation or competition. The first problem with this is that other countries more often emphasize specifics and quality of service, rather than customer choice. The second problem is that, at least in the telecommunications realm, other countries' standards-setting processes are almost totally controlled by government ministries of posts and telecommunications -- organizations which have strong biases of their own, and which are not easily swayed by U.S. championing of choice, innovation, and flexibility.

There is of course some industry participation, but for the most part it amounts to the involvement of a "local gorilla." Siemens, Philips, Ericsson, and Compagnie Générale d'Electricité, for example, all cast long shadows over their governments' positions in the CCITT. As a result, the standards-setting process is weighted towards preserving the status quo of a government monopoly or a government-favored manufacturer. And that does not fit in with U.S. competitive goals which emphasize the "discipline of the marketplace."

Another major issue has to do with the U.S. approach in relation to "damage to the network" and how that applies to international telecommunications. Many countries contend that you must have very, very precise standards or else you will damage the network. Lest we be too smug in our enlightenment in the U.S., I harken back to the days when Charles Brown and others from AT&T said that you couldn't possibly have a telephone that wasn't an AT&T telephone, because it would damage the whole network.

Now granted, many of those telephones that we have out there that look like Mickey Mouse, or footballs, or beer cans, or whatever, may not be the best quality telephones, and many of you may have given them to your teenagers or discarded them altogether. But, one, they didn't damage the network; and, two, they were a choice that you could make yourself. Nevertheless, the issue of damage to the network is one that continues to plague us in international standards setting.

Foreign governments also look more towards interoperability rather than just interconnectibility, and they want to be much more detailed in the standards that are put forward. In addition, we also find that some foreign governments are attracted to the idea of using the ITU as a forum to resolve national and regional differences and attempt to force more restrictions into the process.

Another dimension which deserves more attention is the fact that more and more countries are looking at standards setting as part of a broader industrial policy. We in the U.S. have long chuckled at the overly ambitious and rigid five-year plans of certain countries, but these plans for industrial growth are becoming more and more sophisticated, and they increasingly encompass strategies on standards setting as well as research and development.

European Community activities are an especially instructive example. The European Community has been seized with the problems of being a small, balkanized market. Needless to say, many of its industrial policy goals are geared towards creating a unified European market. We applaud a European market based on the concepts of the Treaty of Rome, which opened things up. But if the European market becomes more restrictive, more inward looking, we're going to have real problems.

These difficulties are not made any easier by the fact that in telecommunications the European Community defers, at least at this point, to what they call the CEPT organization -- which is basically the European PTTs. We have two basic problems with the CEPT. First, the CEPT process is PTT controlled. Second, the CEPT makes little room for private-sector input, and industry not based in Europe is totally out in the cold. In contrast, our own CCIR and CCITT process in the United States is open, and there is plenty of participation by foreign governments and foreign corporations.

One of the initiatives that my office has been working on recently is to push for industry involvement in CEPT activities related to standards setting. To a limited extent, there has been industry involvement for quite some time, but what we're going to ask for next is the participation of U.S. industry in the process. But that will only happen if U.S. industry takes an activist approach.

In relation to standards setting overall, I cannot emphasize enough the importance of industry as the best promoters of quality and openness. Both government and industry must continually answer several major policy questions: At what point do you need a standard? At what point do you need a standard based on a treaty? At what point do you let the marketplace decide for itself? How involved should governments be as advocates?

I believe that our approach to high-definition television was a good example of how we should deal with standards internationally. We in the government did not sell the standard; instead, we let the technology speak for itself, engineer to engineer. For that reason, I believe that the high-definition TV standard will ultimately prevail -- perhaps not as a treaty-based standard, but the exposure it got in the ITU has already gone a long way toward making it a commercial reality.

If possible, we must avoid pitting government against government in the standards setting process. If we do, we're all potential losers, because there are plenty out there who look at standards setting as a potent non-tariff barrier. The trend would then shift away from the technical merits to political and economic trade games, adding yet another coal to the flames of shortsighted protectionism.

I do not have time this morning to comment in depth on other dimensions of standards setting, such as type approval, certification, licensing, and industrial property. I do not believe that those issues can be separated from the broader issue of standards setting, and I hope that your symposium will address these matters as well.

In closing, I suppose I'm like most Americans who grew up somewhat complacently believing that America was the country that set standards against which everyone else had to measure

themselves. We also tended to believe that the American standard was automatically something to be proud of and that it was synonymous with superiority, excellence, and innovation. At our peril do we continue to take that for granted. Not only are other countries increasingly sophisticated in their technological advances, they are also increasingly sophisticated in playing the game of international standards setting.

There is a price we pay for our way of government, our robust and increasingly unregulated economy. However, I believe that we can afford the price and can maintain our record of innovation and excellence. Yet this will not be done by government policies; U.S. industry must build on its tradition of activism, of risk taking. International standards setting doesn't show up on third-quarter balance sheets, but I assure you it shows up in long-term trade deficits. Ultimately, it is individuals and companies, not governments, who must prevail.

While the world, including the Government of Japan, moves closer to adoption of OSI/ISDN international standards, what signal is the U.S. Government sending when it has not taken a formal policy position on the issues? (T. Manakas)

Ambassador Dougan:

For those of you who don't like being dazzled by yet another acronym, ISDN stands for Integrated Services Digital Network. This concept basically turns telecommunications into the ultimate faucet: all sorts of electronic services, whether voice, data, or broadcast, can all be sent on one system. There are a number of reasons why we have not come to closure on this, not the least of which is that the United States and much of the rest of the world seem to diverge slightly in defining ISDN. For example, many European countries look at ISDN as an opportunity to reclaim monopoly ground on all communications services where private lines, especially for computer and data-based services, have not necessarily gone on the PTT system. From our perspective, the issues are not just technical, but are also economic and political. I think we must exercise a great deal of caution when we define ISDN. Frankly, we're going in that direction on an incremental basis in the United States, allowing more and more add-on services and modem conversion approaches to expanding services. Furthermore, who's going to pay for this ISDN? It's like deciding you want a washing machine that has not only wash and dry cycles, but also has wash for combination polyester/rayon, combination rayon/cotton, and getting into specifics that the basic service user may not want to, or shouldn't be asked to, pay for. These are some of the questions. I'm not saying that they cannot be resolved, but they are rather extensive in nature. Thank you.

You have discussed the importance of testing/certification/data acceptance. How do your negotiations address self-certification by the manufacturer? (R. Daniels)

Ambassador Dougan:

I can add one part on self-certification. The amount of equipment coming out daily is deluging many countries, certainly including the United Kingdom with which we have been working. Don Abelson, who's sitting very demurely in the front row, is the American master at this. We're continually working on pragmatic arguments. It now costs too much money to go to centralized testing and certification places. When they talk about the amount of delay and the expense, we leap in and say: "Aha! we've got some very good solutions for you." We've been working with both Canada and the United Kingdom to obtain either point-of-manufacture or self-certification and are making some progress. This is an area with problems and a gearing towards a European certification process. We've got to get ourselves into that certification merry-go-round.

Some other governments partially support their representatives at voluntary standards meetings. Should the U.S. Government develop a means to provide similar partial support? (J. Tesk)

Ambassador Smith:

My own view is that's going to be difficult these days, however desirable.

Ambassador Dougan:

I would really like to put in a commercial for the strategic planning parts of your corporations. It is in your own self-interests. For the long term, it's worth the nickels and dimes and thousands of dollars that you spend there. Unfortunately, a return on investment isn't in the third quarter balance sheet.

How does USTR feel about private efforts between certification bodies in various countries to facilitate mutual acceptance of test data? (H. Kontje)

Ambassador Smith:

Generally speaking, we're in favor. For example, we were recently in Europe meeting with the Commission. They had a number of industry reps from their standards organizations dealing in telecommunications, and we had our reps from similar or counterpart organizations. One of our successes was the ability at the Government level to reach the notion that the private sector reps or organizations should get together. Obviously, we're in favor of that to the greatest degree possible. From our point of view, it's efficient and saves us money, which therefore saves you money. By and large, you're more able, more capable, more knowledgeable about the issues at hand than we are, so we obviously encourage it.

Technology is moving faster than standards work. Any plans to streamline the process? (J. Blair)

Ambassador Dougan:

First of all, I'm not sure that's all bad, especially in the international environment. One of the reasons that television, VTRs, and de facto direct broadcast satellite services have come into being is that no regulations or requirements of either standards or laws concerning reception have thwarted this. If things are going well without a standard, I'm not sure that a standard must be set.

Ambassador Smith:

Let me add one thing. As far as the Standards Code, for example in the dispute settlement process that is now prescribed or envisioned in the Code, a general problem is the time involved. This clearly needs streamlining or you're dead by the time you fix the damage and no recovery is possible. In reality, we are in a different age than we were even 10 years ago. It is true that technology is outstripping or outpacing the ability of government organizations to react. We just have to accept that and learn to live with it, unless we want a massive, permanent world bureaucracy to try to address these issues or try to fit the pegs into the holes. I think it's something we just have to live with.

Can we get more rationale (scientific) on technical regulations or standards of other countries? (R. Flink)

Ambler: Can we get more information about the rationalities of technical regulations or standards of other countries? Is that the question?

Flink: What I am interested in is when the GATT sends us regulations, would it be possible for us to get a scientific rationale for that regulation?

Ambassador Smith:

That gets to the transparency issue. To be given the scientific rationale for standards setting has been a fundamental goal, and standards should be set only on the basis of scientific rationale. As a case in point, I referred earlier to the animal hormones case. The standard proposed by the European Community appears to have no scientific basis at all according to information from experts, including the Europeans. Trying to get their rationale from the Community is like pulling teeth from snails. Transparency is obviously an objective not only of the United States Government in its negotiating goals in Geneva, but indeed should be a fundamental underlying tenet of all further work in the Standards Code area or for testing.

Ambassador Dougan:

Again, speaking only in the telecommunications context, it's a little-remembered fact that most of the CCIR and CCITT standards are recommendations, not requirements. Generally speaking, European countries choose to look at these recommendations as requirements. We very jealously preserve our right to view them as recommendations and, quite candidly, we are working with other countries to take more of that approach as well. A number of European countries -- and I would say generally most of the world in the telecommunications realm -- look to the ITU to solve their problems rather than coming up with domestic answers. This is one reason they want standards to be inclusive. For those who deal with the telecommunications world, that is something to put into your back pocket and pull out when you seek more flexibility in getting into a market.

What role do you see for the nation's providers of education, particularly secondary and higher education, in addressing the standards problems inherent in the trade deficit issues? (L. Walser)

Ambassador Smith:

I'm not sure I see a direct linkage with the trade deficit. If we're Johnny-out-of-step and the rest of the people are marching to the band, it's going to hurt us on the trade side, but I think that's pretty indirect. I'm not sure I could make the reach from secondary and university education levels directly to the trade picture. Doubtless, everything ultimately affects everything else, but I would be chary of making any direct linkage.

While U.S. negotiators pursue foreign administrations to convince them to drop technical barriers to trade, what signals are we (United States) sending overseas when the National Bureau of Standards continues to pursue testing in-house, particularly for computer standards? (T. Manakas)

Ernest Ambler:

The person who asked the question is with the Corporation for Open Systems. He therefore knows perfectly well that the Corporation for Open Systems was created for the private sector to deal collectively with the question of protocols for open systems interconnect, an area that the Bureau of Standards had pioneered in and which we were very proud to have pioneered in. Our effort, which we put behind the international standards aspect, is now very small because our budget was reduced and because the private sector is taking over. You may recall that Ambassador Dougan had three points at the end of her talk, one being a plea for more activity from the private sector. We all know that participating in international standards is very expensive. The meetings in the fleshpots of the world go on forever. You send your best people at high costs, and the Bureau of Standards doesn't like to do it either. However, we take full responsibility without flinching for treaty obligations, for example in the International Committee of Weights and Measures. That is the Government's responsibility. This whole question, though, of the private sector participating more strongly is true in many areas, for example, in generic technology and R&D. We wring our hands about Japan Incorporated and what they do over there, but we don't want an industrial policy at all like that. This is an area where the game belongs to the private sector. As Ambassadors Dougan and Smith pointed out, the Government is here to facilitate. The degree of cooperation and general participation is not high in this country, in part because people are brought up to compete in the private sector. We have our own market, and we're trained to compete against, not cooperate with, other companies: they're competitors! I don't think that particular argument holds in a world market. In this particular area, as Ambassador Dougan said, cooperation is vital. To be effective, it requires more of your participation and cooperation.

Ambassador Smith:

I was interested in your comment that delegates meet in the fleshpots of the world: I have never heard Geneva, Switzerland, described as a fleshpot!

Ernest Ambler:

If you are a taxpayer in Little Rock, Arkansas, Geneva is a fleshpot of the world! Personally, I well understand your point of view and I would just as soon never get on another airplane in my life.

BREAK

INTRODUCTION OF DR. PETER M. BELL

WE WILL NOW TURN TO THE INTERNATIONAL STANDARDS CONCERNS OF THE U.S. BUSINESS COMMUNITY.

OUR FIRST SPEAKER FROM THE PRIVATE SECTOR IS DR. PETER M. BELL, VICE PRESIDENT FOR CORPORATE TECHNOLOGY OF THE NORTON COMPANY.

DR. BELL RECEIVED HIS DOCTORATE FROM HARVARD UNIVERSITY IN GEOPHYSICS IN 1963, BUT HE HAS BROAD SCIENTIFIC CREDENTIALS. HE IS ON THE GOVERNING BOARD OF THE AMERICAN INSTITUTE OF PHYSICS; IS A FELLOW OF THE AMERICAN CHEMICAL SOCIETY; IS GENERAL SECRETARY AND TREASURER OF THE AMERICAN GEOPHYSICAL UNION; AND BELONGS TO SEVERAL OTHER PHYSICS, CHEMISTRY, GEOLOGY, AND GEOPHYSICAL SOCIETIES.

DR. BELL HAS BEEN HONORED AS A GUGGENHEIM FELLOW AT THE UNIVERSITY OF UPPSALA; AS A FELLOW OF THE CARNEGIE INSTITUTION; A VISITING SCHOLAR AT CAL TECH; AND VISITING PROFESSOR AT JOHNS HOPKINS AND CUNY (BROOKLYN). HE HAS RECEIVED MANY AWARDS FROM A HALF DOZEN OR MORE PRESTIGIOUS INSTITUTIONS.

DR. BELL WILL RAISE THE QUESTION OF CURRENT RULES CONCERNING TECHNICAL DATA THAT DO NOT PROTECT THE NATIONAL INTEREST WHILE ENCOURAGING DEVELOPMENT OF COMMERCIALLY VIABLE PROSPECTS (AS OPPOSED TO GOVERNMENTAL SALES). HE'LL TALK ABOUT UNCERTAINTIES AND CONFUSION CREATED FOR INDUSTRY BY THE SEVERAL COGNIZANT GOVERNMENT AGENCIES.

Commerce Regulations: A Barrier To U. S. Manufacturing Industry

Peter M. Bell
Vice President
Norton Company

ABSTRACT

Currently, rules for the regulation of technical data do not achieve the goals of protecting the National Interest while encouraging developmental activities for commercially viable prospects (as opposed to governmental sales). Controls on the export of technical data are complex and confusing, often resulting in the cessation of U. S. Commerce development programs. Development of advanced, high-performance materials and products is being pushed offshore by the procedures. In some instances, the DOD must acquire critical components from foreign nations who hold their technology as proprietary. Creation of a single government regulator could help to alleviate the uncertainty and confusion that exists now between industry, the Commerce Department, the Patent Office, and the DOD.

Opening Remarks

- Our Industry is one of a spectrum of material manufacture - ceramics and abrasives, metals, and plastics.
- My discussion is to focus on the high tech end of these materials which we need to develop to advance our core businesses.
- We start by working with the Department of Defense in developing the most advanced and high-performance materials and products for the military - these programs are classified and should be so.
- The problems we are addressing today are related to the eventual process of taking advantage of the technology in the form of spin-offs for nonmilitary business.
- Even if the secrecy orders on a given material are obsolete - as evidenced by its global availability - we cannot disclose publicly the specific technology or even the fact that the product involved has a secrecy order affecting it in attempts to solve the problems.
- Thus today, I have a difficult job in giving this talk.

Introduction

U. S. manufacturing is a highly competitive undertaking in this decade. The markets that are served are global, and thus competitors are, in part, foreign nationals. The efforts of the United States government to protect the National Interest must be made with the consideration that global competitors of U. S. manufacturers have no such restrictions. Steps to control or regulate technology transfer today extend even to imposition of secrecy orders on patents. Filings of foreign patents are prohibited in such cases (except for certain burdensome procedures that involve secret filing processes with NATO Allies). Non-U.S. competitors are free to obtain international patents and thus exclude U. S. manufacturers. The issues of regulations, secrecy orders and technology transfers in terms of the U. S. export position are especially relevant to the development of advanced, high performance materials. The high tech end of materials development is needed for U. S. defense applications. Such development by U. S. industry provides essential spin-offs for advancement and competitiveness in core businesses. There would be less conflict of interest if regulations were applied carefully and judiciously. Proposed regulations should be tightly monitored and should not be imposed without adequate review and demonstration of need. That such care is not being taken currently is evidenced by the Military Critical Technologies List (MCTL). First of all, the list is classified and not available to the public. Technologies placed on the list are included for "national security" without explanation.

In many instances, competitive products are already available outside of the United States. Once a restriction has been placed there is no straightforward route to getting it removed. An apparent need exists to clarify the authority for placing restrictions. Under the present system one may have to deal with the Commerce Department, the Patent Office and the Military to seek responsible action. Usually, the process is frustrating, costly, and not successful. Creation of a single government regulator could help to alleviate the circumstances.

Results Of Current Policy

That the rules now in place are anachronistic, that there are too many regulators involved, that the results of the rules are seriously impeding and damaging to U. S. manufacturing industry should be evident. Unfortunately, most of the best examples have not been publicized because secrecy orders prohibit disclosure. Even the fact that a given product or material has a secrecy order affecting it cannot be disclosed. Nonetheless, the effects of current policy are severe and are being voiced.

A few examples:

1) Boston Globe, December 16, 1964

> ". . . federal officials have disrupted (scientific) meetings by asserting that technical data on the program was subject to export controls . . ."

Scientific communications can thus be interrupted for the wrong reasons.

2) Industry Magazine, March 1986

Article Titled "Export Controls and Foreign High Tech"

"Export controls imposed by the U. S. government often defeat their purpose because . . . they encourage the development of advanced technologies abroad . . . drawn out U. S. government export policies are contributing to the success of our European, Japanese and Soviet competitors . . ."

"The list of so-called critical technologies reflects American naivete having been developed with no meaningful examination of foreign availability in the marketplace.

3) Worcester Evening Gazette, January 12, 1987

"U. S. controls on exports of high technology items to Soviet bloc nations not very effective while costing hundreds of jobs and $9 billion a year."

4) Business Week, January 26, 1987

"The government efforts to block the export of high technology products and information . . . cost the nation $17 billion last year - and did not significantly improve national security."

5) Business Week, February 16, 1987

" . . . export controls cost U. S. businesses $9.3 billion in 1985 . . . we've only succeeded in losing our markets to our allies . . ."

6) The Wall Street Journal, March 13, 1987

Secretary of Commerce, Malcolm Baldridge is quoted as saying "For too long the bickering in Washington has been one more unfair trade barrier interfering with the flow of legitimate trade".

A Syndrome

The effects of the restrictions have followed a pattern or syndrome. First, U. S. industry develops a technology in close competition with developments abroad. Next the U. S. technology is placed on the list (MCTC) and deemed secret. Foreign competitors obtain patents abroad, develop global markets, and become more advanced. U. S. development has slowed because of the restrictions, and foreign competition has advanced.

A well-known example is the one about advanced materials for high-tech bearings. The U. S. had leadership until slowed by restrictions. The syndrome operated as follows. Japanese industry was not restricted and developed markets at home and abroad, thereby gaining leadership in the bearing material market. According to the story, the bearings were used in the U. S. Cruise Missile - that is, the Japanese bearings. Beyond the published international patent information, the U. S. military faced a dilemma. The Japanese refused to tell the U. S. government anything about the bearings. Meanwhile, U. S. industry suffered the loss of technology as the military was in a sense being held "hostage" by a foreign government.

The circumstance today is that U. S. manufacturing often is not far ahead of its foreign competitors. The competition is quite close, in numerous materials and product lines. Thoughtless, unilateral restrictions by the federal government are thus hindering U. S. manufacturing industry greatly.

What the manufacturing industry needs is freedom to compete if it is to survive, which it must if the national interest is to be served. We must not ever be in a position where the DOD has to acquire critical components from foreign nations, whose industries hold their technology as proprietary.

Proposed Government Action

Currently, the U. S. government regulators include the State

Department, the Nuclear Regulatory Commission, the Treasury Department, the Department of Defense and the Commerce Department. It is proposed that before any regulations or restrictions be applied, a given case be brought before a single body - one that can evaluate foreign availability and the threat to national security. Ideally, the body would require stringent demonstration that a given material, product, or technology merits restriction. Regulations would require annual renewal.

In such a system one would have to re-examine the terms "technical data" and "export" in the light of the fact that most U. S. manufacturing industries have been forced to follow their markets offshore. There are many employees today of U. S. manufacturing industries who are not U. S. citizens or legal residents either in the U. S. or outside.

Until a single regulatory body can be formed to facilitate the regulatory process, and deal with the numerous problems faced by U. S. global manufacturing industries, foreign competitors will have a great advantage.

Co-Chairman Ambler

INTRODUCTION OF DR. PETER R. BRIDENBAUGH

OUR NEXT SPEAKER IS A DISTINGUISHED ENGINEER. DR. PETER BRIDENBAUGH, VICE PRESIDENT FOR RESEARCH AND DEVELOPMENT OF THE ALCOA CORPORATION, RECEIVED HIS B.S. IN MECHANICAL ENGINEERING AND M.S. IN METALLURGY FROM LEHIGH UNIVERSITY, THEN A PH.D. IN METALLURGY FROM M.I.T.

IN 1968 HE JOINED ALCOA RESEARCH LABORATORIES AND ROSE THROUGH THE RANKS OF SECTION HEAD AND MANAGER OF FABRICATING METALLURGY, QUALITY ASSURANCE MANAGER FOR TENNESSEE OPERATIONS, AND DIRECTOR OF ALCOA LABORATORIES.

DR. BRIDENBAUGH SERVES ON THE ADVISORY BOARDS OF FIVE UNIVERSITIES AND ON COMMITTEES OF THE NATIONAL SCIENCE FOUNDATION AND THE NATIONAL ACADEMY OF SCIENCES. A MEMBER OF SIGMA XI, THE AMERICAN SOCIETY FOR METALS, AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, AMERICAN SOCIETY FOR ENGINEERING EDUCATION, INDUSTRIAL RESEARCH INSTITUTE, AND DIRECTORS OF INDUSTRIAL RESEARCH.

HE WILL FOCUS TODAY ON TECHNICAL PREEMINENCE AS THE ESSENTIAL INGREDIENT IN INTERNATIONAL INDUSTRIAL COMPETITIVENESS, DISCUSSING ELEMENTS OF TRADE STANDARDS AND - IN PARTICULAR - PROTECTION OF INTELLECTUAL PROPERTY RIGHTS, NECESSARY TO FULLY LEVERAGE THE ADVANTAGES DERIVED FROM SCIENTIFIC AND ENGINEERING LEADERSHIP. HE SEES A VITAL ROLE FOR STRATEGIC ALLIANCES BETWEEN INDUSTRIAL, ACADEMIC, AND GOVERNMENT LABORATORIES.

"STANDARDS FOR TOMORROW'S MATERIALS INDUSTRY"

Remarks by

Dr. Peter R. Bridenbaugh
Vice President, Research & Development
Aluminum Company of America
Conference on Standards & Trade
U.S. Department of Commerce
Washington, DC

1987 May 05

Good morning, ladies and gentlemen. Normally, I begin my speeches by telling the audience what a pleasure it is to share my thoughts with them on the subject at hand. Those are usually ones that I'm fairly familiar with and feel pretty confident about...the aluminum industry, new materials, managing a large research and development organization. But today, I must tell you my comfort level isn't quite that high...a materials scientist up here talking about nontariff barriers to foreign trade in front of an audience whom I'm sure knows a great deal more about the subject than I.

I feel a bit like an old fellow I once heard about whose proudest experience was surviving the famous St. Patrick's Day flood in Pittsburgh. Now, except for his harmless compulsion to tell any listener his tale, he was a good sort and eventually, when he died, found his way to heaven.

On arrival, he had the standard interview with St. Peter. "Your papers are in order, so we welcome you to heaven. I'd like to ask if you have any special request." "Yes," the old fellow replied, "I'd like to tell some of my fellow angels about how I survived the great Pittsburgh flood of 1936." "We'll see," St. Peter replied and left. When he came back, he said "It's all set. You're booked into Conference Room C on cloud 17 today at 3." "That's great," said the old man. "Just one thing," St. Peter added, "you need to know that Noah will be in the audience."

I can't think of a more appropriate time for a conference on standards and trade. The subject has been on the front pages of our nation's newspapers and magazines almost continuously in recent weeks. The topic has been widely discussed and hotly debated.

As I prepared for my talk this morning, it became apparent to me that even the smallest details of this issue cannot be considered without an appreciation for the extremely complex and multidimensional aspects of international cultures...and the subsequent extensions of every nation's mores and folklore that serve to form and focus their governmental policies and perspectives on everything from education to intellectual property rights. Only one thing appears certain to me...the economic war we are engaged in with our military allies is just as real as our political confrontation with the Soviets. A loss on either front would be devastating. A free international marketplace, governed by fair trade practices and policies,is a fundamental, strategic necessity for our nation's industrial survival.

With a clearer perspective around the importance and complexity of this issue, I don't envy those whose job it is to sort through the myriad of threads that must be assembled and woven together to create a strategically and tactically-sound national policy on trade. While I am no expert on this subject, I do have some thoughts and information that I hope will be pertinent to today's discussions. Perhaps the most important contribution I can make is to brief you on the materials industry, its recent...and rather tumultuous...history...and the scientific, engineering and manufacturing forces that are shaping its future.

From a technological point of view, two on-going events are dramatically impacting the materials marketplace today. First, and foremost, is a revolution in the field of materials science that has led to the development of new materials and to the introduction of completely new materials systems. These laminate and composite systems, which combine diverse materials to optimize the inherent properties of each, are extremely complex yet very promising. And they are being developed with a rapidity unprecedented in our industry's technical history.

Stemming from this revolution has been a corresponding, and dramatic, increase in the stringency of the design criteria and product requirements coming from our customers. We are experiencing a pull from the marketplace for a diversity of structural materials systems never before experienced by materials manufacturers.

Today, what we accept as scientific fact in the materials industry, only 10 to 15 years ago might have been regarded as science fiction. Yesterday's empirical methods are being replaced by quantitative, computer-based research methods. We are beginning, not only to understand the structure - property - process - performance continuum, but also to translate this understanding into mathematical equations to create process models. These models are in turn giving us the ability to replace laboratory experiments with computer simulations. The resulting quantity and quality of the experimental work has been truly amazing.

Alcoa's commercial and technical agendas are founded in the heart of this scientific revolution. We have broadened our materials thrusts by establishing an internationally-recognized ceramics research program, building an aggressive, fundamentally-deep research portfolio in polymers, and starting an advanced manufacturing center for composites. At the same time, we have continued to pursue our research in metals, primarily in aluminum, but also in titanium, magnesium and other, more exotic metals.

In ceramics, we have used our fundamental knowledge of ceramic powders to forward integrate into the production of new, value-added products...such as multi-layered ceramic packages and armor systems.

In metals research, we are developing constitutive, tribological and field equations that will permit us to create process models for traditional metal manufacturing techniques, as well as for non-metallics and composites manufacturing.

These and other technological building blocks, such as interface science and microstructure control, are necessary for the successful combination of metals, ceramics and polymers into the laminate and composite material systems I mentioned a moment ago.

These kinds of sophisticated systems are being driven by our customers...whose design specifications and demand for advanced structural materials are increasing geometrically.

Several excellent examples of the rapidly growing demand for advanced materials come from the aerospace industry. The transatmospheric vehicle and manned space stations, for example, will require materials that are--in reality highly-engineered systems.

Tomorrow's materials requirements are not confined to high-end materials and applications. Next-generation food packages, for instance, will be dominated by multi-layer, high-barrier polymer laminates...whether we will be dealing with so-called "yuppie" food or we are trying to solve preservation problems associated with underdeveloped nations.

The traditional role of the materials industry as the producer of semi-fabricated, high-volume, products is being irreversibly altered. To justify the cost of R&D and next-generation capital facilities, we will have to forward integrate into the production of value-added products and systems. We also must develop and implement highly-flexible material and product manufacturing facilities that will allow us to produce a multiplicity of products from one capital base. We simply can no longer afford behemoth facilities dedicated to just one product.

Yesterday's monolithic materials and their companion manufacturing facilities are becoming modern dinosaurs. The rigid mind-sets that have built up around these mass-produced products and their manufacturing mores also must become extinct. Even though I am intrigued by the theory that it was a dust cloud created by the impact of a meteor that did in the dinosaur, I am still basically in the Darwinian camp that stresses adaptability as the ultimate tool for survival. The materials industry must learn to embrace, adopt and implement rapid change if it is going to transcend its own pre-history.

Remember the time when we only had one kind of Coke?...when our key decision on a new car was either a two-door or four-door...and when our next pair of tennis shoes was either going to be white or black? It wasn't that long ago. But that time is gone. And with it have gone new opportunities for the huge volumes of semi-fabricated materials required to make them. Today, a wing designer starts with a final product in mind and tells us what materials are necessary. But instead of one material, six may be required, all integrated into a single materials system. The ability to make them is up to us.

The challenge for those of us who supply these diverse, technically-rich materials...and those of us who will remain successful in the materials industry...will be to discover, design, characterize and manufacture low-volume, highly-diverse product lines. Product performance will dominate materials selection, not the properties of monolithic ingot. Quality and customization are becoming the basis for competition and will rise to join cost as key determinants of profit.

And, because of lower volumes and higher product diversity, flexible manufacturing will be absolutely essential.

Flexible systems view materials synthesis, product manufacturing, materials specification, and product design and testing as layered stages as opposed to separate, serial steps. This kind of logic is vital in the conceptualization and production of advanced materials.
At this juncture, major challenges and opportunities exist for those of you in the standards arena. Destructive and non-destructive techniques for testing, evaluating and characterizing new materials must be developed and implemented.

I've recently become aware of a new, ultrasonic inspection technique that permits the detection of flaws in green ceramic parts still in the mold. This NDE technique, may serve as a major stimulus for the advanced ceramic industry, where product consistency has retarded market acceptance of ceramic components.

A similar need exists for graphite composites. Until a more cost-effective method is discovered for finding subsurface flaws or damage in these parts, they will never realize their commercial potential.

When you combine the pressing need we are experiencing today for a new and extremely sophisticated set of design codes and specifications to support the complex materials systems being developed...with windows of commercial opportunity that are measured in months instead of years...the magnitude of this issue then clearly into focus. The need for close cooperation, communication and mutual understanding of commercial and technical requirements between governmental standards experts and their counterparts in academia and industry is greater today than it has ever been.

Through intense mutual efforts we must develop codes and specifications for emerging materials systems with some degree of confidence before we can expect our trade representatives at the GATT negotiating table to have our technical information and resources included as international standards.

Inclusion of intellectual property rights in the Uruguay Round of GATT is very encouraging. We feel it is very important to expand the scope of patent coverage to accommodate new and developing product and processing technologies in our industry. We also hope that an internationally harmonized intellectual property system can be agreed upon that will prohibit product and process patent infringement at the point of production, not at a nation's borders...and one that will modify or eliminate compulsory licensing.

Harnessing the forces of today's scientific revolution...and combining this technical understanding with some enlightened change in our industrial behavior...are vital, not only for materials people, but for all of our country's basic industries.

All we can...and should...expect from our trade representatives is a level playing field upon which to compete. It runs against the American spirit to seek a head-start or unfair advantage. All we ask is a set of international rules that guarantee both free and fair trade. Given those, we'll sink or swim based on our own ingenuity, innovativeness and willingness to do the work it takes to win.

Sometime, I think I have to agree with the late, and great, Pogo. "I have seen the enemy, and he is us." In recent years, I have begun to see what I perceive at times to be an almost adversarial relationship between some of the vital elements in our nation's basic industrial infrastructure...science, engineering, manufacturing...our government and financial institutions.

For some reason, we've allowed barriers to exist in our organizations between R&D, engineering, sales and marketing. They simply must come down. For most of this century, our government's role has been to prohibit cooperation, collective research and strategic alliances between this nation's business community. This objective was well-intentioned and perhaps necessary for a time. But today, quite frankly, the effects are deleterious. Cooperative, collective, strategic alliances between business, academia and our government are absolutely essential and our legislators must be made to realize these facts...our financial institutions need to dedicate much more of their time, effort and expertise to advancing the interests of our nation's basic industry through long-term investment strategies rather than being driven by short-term financial gain.

Each player in this infrastructure has a complimentary role to play, one that has too often become biased by mistrust and misunderstanding. That has to change.

In conclusion, I would assert my belief in scientific knowledge as the foundation for human progress and my complete confidence in America's ability to continue to lead the world in the development of this most valuable resource. But we must come to grips with the concept of an international economy and do whatever is necessary to assure equal footing on the floor of the economic arena. Our country cannot effectively maintain its standard of living in the absence of a basic manufacturing capability. Somewhere, somehow, someone must make a product and sell it at a profit. That's the only way to create real wealth. And our government...you and I...must do whatever is necessary to maintain America's manufacturing infrastructure. That's truly the bottom line.

Thank you.

Co-Chairman Ambler

INTRODUCTION OF C. SCOTT KULICKE

SCOTT KULICKE BLENDS INDUSTRIAL AND STANDARDS LEADERSHIP. HE IS BOARD CHAIRMAN AND CHIEF EXECUTIVE OFFICER OF KULICKE AND SOFFA INDUSTRIES, THE WORLD'S LEADING SUPPLIER OF CAPITAL EQUIPMENT AND SYSTEMS FOR ASSEMBLING AND PRODUCING SEMICONDUCTOR DEVICES.

MR. KULICKE ATTENDED LAFAYETTE COLLEGE AND THE WHARTON SCHOOL OF BUSINESS, WHERE HE RECEIVED HIS DEGREE IN ECONOMICS. HE JOINED KULICKE AND SOFFA IN 1973 AS MANAGER, FAR EAST OPERATIONS, BASED IN HONG KONG. HE BECAME INTERNATIONAL MARKETING MANAGER, THEN PROJECT MANAGER FOR THE AUTOMATIC WIRE BONDER, MARKING THE TRANSITION FROM MECHANICAL MACHINES TO COMPUTERIZED SYSTEMS. HE IS ALSO A DIRECTOR OF THE SEMICONDUCTOR EQUIPMENT AND MATERIALS INSTITUTE, KNOWN AS SEMI.

MR. KULICKE CONSIDERS STANDARDS A KEY TO OPENING UP MARKETS FOR U.S. COMPANIES AND AN IMPORTANT OBJECTIVE FOR U.S. INDUSTRIES THAT WANT TO COMPETE IN INTERNATIONAL MARKETS. THEY REDUCE COSTS AND ASSURE QUALITY. HE ASSERTS THE NEED FOR USER INPUT, ESPECIALLY FOR TODAY'S COMPUTER-ASSISTED PRODUCTION ENVIRONMENT.

MR. KULICKE BELIEVES THAT WE SHOULD AGGRESSIVELY SEEK ACCESS TO FOREIGN NATIONAL STANDARDS BODIES, WHILE WELCOMING NON-DOMESTIC PARTICIPANTS INTO U.S. STANDARDS ORGANIZATIONS.

Presentation by C. Scott Kulicke
Chairman and CEO, Kulicke and Soffa Industries, Inc.

For several years, I served as Chairman of the Standards Program for the Semiconductor Equipment and Materials Institute, Inc. or (SEMI). SEMI is an international trade organization representing about 1,200 members worldwide, all of whom provide equipment, materials or services used in the production of semiconductor devices. We serve a rapidly changing industry, where product life cycles are at best four or five years long and in many cases as short as one or two. Our approach to standards has been to modify some of the more traditional standards making techniques, particularly those we borrowed from ASTM, but modifying them so that we can respond to the dynamic nature of our business.

In my standards capacity with SEMI, I had an opportunity to look firsthand at how standards were developed and promulgated. My remarks this morning will be drawn from that experience. I will look at standards from three points of view--the benefits of the standards making exercise, the benefits of participating in the process of making standards, and finally some of the public policy implications of standards, especially in international trade.

SEMI got started in the standards business about 12 years ago. When the semiconductor industry was first starting to automate its production equipment, that automation took the form of presenting cassettes of wafers to process machinery, as opposed to the traditional loading of wafers one at a time, by hand. It

turns out that if you took the then current 3 inch wafers from several different wafer manufacturers and tried to put them in the cassette of several different cassette manufacturers, one of three things would occur. In some cases, the wafer would fall straight out the bottom of the cassette. In other cases, the wafers would not fit in at all. And in some cases, the wafer and cassette would actually work together. Low and behold, we had discovered that not everybody could agree on how big 3 inches actually is. Some bright fellow concluded that what the industry needed was some standard on how to specify the size of a wafer and its matching cassette.

From that fairly mundane and predictable start, SEMI's standards making activities today have evolved into an organization staffed by over 2,000 volunteers representing suppliers and users on three continents. The scope of the standards we write today range from wafers and cassettes (only today we are arguing about how big 8 inches really is), to semiconductor grade gases, to semiconductor packaging materials, to machine interface and communication standards so that today's intelligent process stations can pass information among themselves and to host computers.

The benefits to our industry of these standards are many. The economic advantages of standardized products are, I think, fairly obvious. The manager of a standardized product is not faced with having to build a multitude of slightly different products, each conforming to a different customer's whim or fancy. In this respect, inventory management and manufacturing scheduling problems are minimized. The user also benefits in knowing that products from different vendors can be used

interchangeably, without significant engineering evaluation. These kinds of advantages were true 12 years ago when we started with the wafer and cassettes as in the example given above. They are even more true today with our most ambitious standard yet, the Semiconductor Equipment Communications Standard or SECS for short.

Of our 1,200 different members, about one-third supply pieces of manufacturing or process control equipment which are now being integrated together to form automated factories. Imagine if each of these companies, or alternately, if all of our customers, each opted for a different communication protocol between the different machines in their factories. The semiconductor industry would be facing a software writing task that could consume all the programmers in the country. The obvious need was for a standard communication protocol. SEMI stepped up to this challenge and has, over the last few years, generated and published a communication protocol which allows machinery of any manufacturer to communicate with machinery of another manufacturer and/or a host computer. Each company's programming load has been reduced to simply making their equipment perform to the SECS protocol and each users automation goals have been nicely refined to that of bringing their factories up to SECS standards. In short, everybody's programming costs have been slashed, and progress has been made that is much more affordable.

The point to be drawn from all this is that the principle benefit of standards is economic. The use of standards promotes efficiency and progress, allows industries to move forward, and causes companies to create both jobs and profits.

Besides the kinds of benefits described above, there is another benefit to standards making activities, at least in the semiconductor business. It is what I alluded to above when I mentioned the benefits of the process of making standards. In order to develop this thought, let me make the distinction between the product of a standards making activity, and the process of making standards. That is, the distinction between the written standards that we publish in our books, and the process whereby suppliers and users sit around a table and talk about their technical problems and potential solutions. It seems to me, that there is a great benefit to a supplier from participating in standards discussions. In many respects, standards making is marketing, in that you get a better understanding of your customer's problems and you get to shape his thinking about potential solutions to those problems.

I realize that I am, at this point, treading on very thin ice with a lot of standards specialists, who have rightfully fought for years to keep commercials and commercialism out of the standards arena. The compromises hammered out at the standards meetings need to represent the best solutions to industry's problems. To accept the proposals of a dominant supplier runs

the risk of impeding progress and possibly anti-trust action. Accepting least common denominator standards that suit everyone will cause leading edge companies to move beyond the published standards, creating exactly the kind of marketplace chaos that standards are supposed to avoid.

At SEMI, our solution to these problems has been reliance on the user. We believe that a standard that lacks user input is going to be ineffective. SEMI aggressively recruits users, knowing full well that users will keep all us suppliers honest, and in line. That same user will continually challenge us to improve our product and to stretch our capabilities, all of which brings me back to the process benefit of making standards. By having that user in the meeting room, talking about his technical problems, and where his company would like to go, we have created for our membership a tremendous marketing resource.

I continue to be amazed that a lot of our members underestimate the importance of the information conveyed at standards meetings, or the help that a standards meeting can give to a company to position itself. This seems to me to be an American blind spot. Our international trade competitors understand much better than we the use of standards in protecting and penetrating international markets. The best example is the Japanese use of standards as a non-tariff barrier. Which brings us to the international aspect of standards.

SEMI's standards making activity was originally a domestic only affair since the semiconductor industry was an industry dominated by Americans. Times have certainly changed, and many of our members are confronted with strong foreign competition. This confrontation has, in part, been played out through

standards. SEMI has always opened its standards meetings to any interested participant, and very early on established fruitful working relationships with DIN and SITELESC, in Germany and France respectively. By and large, these organizations have adopted some SEMI standards as their own and/or have recommended people to SEMI when problems have arisen in our particular area of expertise. Japan is a different story.

Japan was late in starting standards making activities in the semiconductor equipment and materials area. The Japanese semiconductor industry was dominated by four big electronics companies--NEC, Hitachi, Toshiba, Fujitsu--each of whom evolved their own corporate standards in many areas. Second tier electronics companies tended to come under the umbrellas of one of the big four. Therefore, neither MITI or JEIDA knew exactly how to react when SEMI first approached them, about five years ago, to discuss cooperation in standards. Not only did they not have a model for the kind cooperation we suggested, but it appears in retrospect, that they were at the start of a long term drive for Japanese dominance of the semiconductor equipment and materials industry, in support of their goals in the semiconductor industry. The idea of cooperation on standards was not attractive to them. So after several years of "consensus building" on the part of the Japanese, SEMI finally elevated the issue within the U.S. government to the Trade Representatives office. Only after direct prodding at a fairly high level has there been significant movement on the part of the Japanese. And

let me say on behalf of the Japanese that we believe the movement has been real, not the sham liberalization reported by other industries.

The kinds of progress we are seeing in Japan include the adoption of some of our standards by Japanese standards making organizations, who are publishing them in Japanese along with their own work. Even here though, the Japanese suggested a few "minor revisions," something we rejected.

SEMI has consistently fought for adoption of worldwide standards. Our feeling is that a standard is not really a standard unless its standard, and that unilateral revisions would have a significant deleterious affect on non-Japanese suppliers.

We have also gotten remarkably supportive response from attempts to organize our Japanese members into American style standards making groups. The Japanese traditionally rely on the "panel of experts" approach to generate a standard, at least in this industry. We, of course, adopt a more democratic approach of having all the opinions argued out in a "let the best idea win" fashion. The Japanese seem interested in trying our approach, as well as attending our standards making meetings in other places in the world.

What I have presented here in the public policy part of my talk is a story with a happy ending, at least so far. But it is in contrast to many other international standards stories that don't have a happy ending; where either implicit or explicit standards have been adopted in order to close foreign competition out of a marketplace. In most cases, this is a problem bigger than any one company or trade organization can tackle. Indeed, its truly an issue of public policy which needs to be addressed

by the government.

SEMI has taken a big, and so far, successful step towards the creation of truly international standards. Perhaps our success comes from organizing more on industry than on geographic lines. Unfortunately, I believe our story is unusual. Most trade organizations or standards making groups have a decidedly nationalistic flavor to them, causing standards that are rarely portable across national boundaries, for reasons that range from protectionism to parochialism. There is, of course, no easy fix to this problem. Nonetheless, I would conclude my presentation with a call for an explicit and active policy from the U.S. government to first fight to harmonize incompatible standards between ourselves and our trading partners, and second, and even more important, to actively work towards a goal of having emerging standards be adopted on an international scale, as opposed to nation by nation. It is a lot easier to coordinate new standards, then rewrite existing ones. I would suggest that the first objective be spearheaded by Commerce's International Trade Department and the office of the Trade Representative. And let me add about the problem of harmonizing, that we are our own worst enemy. Too many Americans believe that all those "foreigners" ought to be happy to accept our wisdom about how things ought to be. The size of our domestic market makes us unwilling to compromise. This is our problem, not theirs.

The second objective might best be served by the National Bureau of Standards, coordinating many private standards making bodies in the U.S. with their overseas counterparts. SEMI in particular has a long and very successful history of partnerships with NBS on just this kind of issue.

In both cases, please focus not just on the standard itself. Work to get American companies involved in the dialogue, or, as I have called it above, the process of making international standards. The process is too valuable an experience to leave to government bureaucrats or standards professionals. It's part of repositioning American companies for international trade.

Questions and Answers

Doesn't ANSI already coordinate international standards development?

C. Scott Kulicke:

We have not had particular success in following that traditional methodology for international standards. That's not meant to be critical of ANSI, but simply reflects the time realities of our business. If we go through the normal generation of a standard, then coordination through the ANSI mechanism, at least as we have experienced it, the standard is outdated by the time it becomes accepted. We needed a streamlined approach, and the best way in our case was to bring international suppliers and users in to generate a single industry standard as opposed to a national standard. We shouldn't create an American standard and a Common Market standard and a Japanese standard, then attempt to rationalize them and harmonize them after the fact. We should try to generate the standards in parallel, up front and eliminate that extra leg, which takes market-destroying time.

Do you see standards as leading or restricting innovation? (L. Galowin)

C. Scott Kulicke:

That's a hard question. Inevitably, standards lag behind the state of the art. We have to compromise absolutely best or potentially best solutions for near term best solutions. Standards in this respect are a mixed bag.

Co-Chairman Ambler

INTRODUCTION OF DR. ROBERT BABOIAN

WE TURN NOW TO PRIVATE SECTOR PARTICIPATION IN INTERNATIONAL STANDARDIZATION AND WELCOME THE FIRST OF TWO CHAIRMEN OF THE BOARD OF MAJOR U.S. STANDARDS ORGANIZATIONS.

DR. ROBERT BABOIAN CHAIRS THE ASTM BOARD AND HEADS THE ELECTROCHEMICAL AND CORROSION LABORATORY OF TEXAS INSTRUMENTS (TI). HE RECEIVED HIS B.S. IN CHEMISTRY FROM SUFFOLK UNIV., AND PH.D. FROM RENSSELAER POLYTECHNIC INSTITUTE, THEN A FORD FOUNDATION POST-DOCTORAL FELLOW AT THE UNIV. OF TORONTO AND A SENIOR RESEARCH ASSOCIATE THERE BEFORE JOINING TI IN 1966. HE ESTABLISHED TI'S CORROSION LABORATORY IN 1968 AND IS A TI SENIOR FELLOW.

DR. BABOIAN HAS BEEN ACTIVE ON ASTM AND ISO COMMITTEES ON CORROSION OF METALS AND HAS HELD MANY ORGANIZATIONAL OFFICES IN ASTM, THE NATIONAL ASSOCIATION OF CORROSION ENGINEERS, AND THE SOCIETY OF AUTOMOTIVE ENGINEERS. HE WAS A SPECIAL CONSULTANT TO THE NATIONAL PARK SERVICE ON THE STATUE OF LIBERTY RESTORATION PROJECT AND EDITED AN AMERICAN CHEMICAL SOCIETY BOOK ON ACID RAIN.

DR. BABOIAN WILL SPEAK TODAY ON THE "INTERNATIONALIZATION" OF ASTM, INCLUDING PROMOTION OF WORLD-WIDE USE OF ITS STANDARDS, PARTICIPATION IN INTERNATIONAL STANDARDS DEVELOPMENT, COOPERATIVE EFFORTS WITH THE STANDARDS BODIES OF OTHER COUNTRIES, AND OPENNESS OF ITS MEMBERSHIP TO PARTICIPANTS FROM ALL OVER THE WORLD.

ASTM PARTICIPATION IN INTERNATIONAL STANDARDIZATION

Robert Baboian
Chairman of the Board
ASTM
Philadelphia, PA 19103

I am pleased to be here as a representative of the 30,000 members of ASTM who have a keen interest in international standardization. Today, the ASTM voluntary consensus standardization system has stimulated work in over 2000 technical committees responsible for 8000 standards as well as a wide range of publications including special technical publications on selected areas of importance. Standards have become an essential part of the socio-economic development of all nations. They open channels of communications and commerce, they promote understanding of the products of technology, and they form the basis for achieving a higher quality of life.

It is a pleasure to be a part of this continuing dialogue between the government and private sector with a primary objective of increasing understanding of the complexities of the international marketplace. Standards are important in a global economy where the users needs are rapidly changing. Standardization provides a mechanism for the stabilization of technology and the subsequent introduction of international technology into the marketplace without forfeiting innovation. ASTM is in the business of standardization and my remarks today will be limited to that subject and not the issues outside of that scope.

During this decade, many forces are at work to influence our need to focus on the "real world" of standards used internationally. Expanded public recognition of the significance of these standards, more efficient international communication, the effects of international economics, and the fact that governments can use standards as instruments of economic and commercial policy, requires a new sophistication in developing our international policy structure for the next decade. It is clear from our experiences in ASTM that the products of the standards arena are related to the stimulus of the marketplace. Users of standards throughout the world place a greater importance on the quality and usefulness of those standards rather than on their source. Therefore, national/domestic standards that are truly "de facto" international standards, have gained wide acceptance in international standardization circles.

The United States is the only country in the world where the standardization process is, for the most part, the function of the private sector. Participation of federal agency personnel in the development of U.S. positions on standards wherever such activities are of interest to the agencies, would strengthen the U.S. position as it is perceived by foreign interests. This would make a statement on the importance the United States as a whole attaches to international standards activities. The reality is that standards are an increasingly important influence in the international marketplace.

The importance of ASTM's international involvement was recently reemphasized by its Board of Directors. We continue to stimulate and encourage participantion by nationals of other countries in the work of our committees, we continue to be responsive to the needs of our committees to insure proper representation in the participation of ASTM in appropriate international standardization activities, and we have increased communication with national, regional and international standards bodies throughout the world.

ASTM does not limit access to its system to U.S. citizens, but encourages participation by nationals of other countries. As a result of this position, ASTM today has over 4000 international members, representing 91 countries, who actively participant in the transfer of international technology into standards used internationally.

Consider the term "ASTM standards used internationally" as opposed to the term "international standards". In our discussions of international standards, our thoughts are generally focused on such outstanding organizations as ISO and IEC. In September, 1986, I had the personal pleasure to visit these organizations to exchange views on standardization issues, especially international issues, and to seek ways to harmonize ASTM standards development with our international colleagues. I believe that these types of exchanges provide an exciting opportunity that can only lead to better understandings and improved cooperation between our organizations. Exchanges of this type with international as well as national standardization bodies, were initiated by ASTM in recent years and will continue to play an important role in our international involvement.

Since ASTM's international involvement is driven by the initative of its individual committees, support of those committees plays an important role. Working through ANSI, ASTM serves as the administrator of 63 U.S. Technical Advisary Groups (TAGS) to ISO standards committees and 5 to IEC committees. The degree of international involvement for any ASTM Committee has depended on its ability to raise sufficient funds from industry sources to cover travel and related expenses. For its part, ASTM has committed substantial resources in terms of staff time and administrative support to assist committees in reaching their particular international standardization objectives. ASTM therefore plays a major role in influencing the development of international standards.

ASTM will continue to stimulate the use of its standards throughout the world by recognizing that it is the international marketplace which decides which standards are used internationally. The goals for ASTM standards can only be met by maintaining and upgrading their technical quality, reliability, and responsiveness to the needs of new technology. Standards developers will face these challenges through continued modernization of its data generation, communication, and administrative support procedures. Standards that meet the needs of the users from a content and availability standpoint will form the basis of international trade.

One of my stated objectives as the 1987 Chairman of the Board of ASTM is to promote the internationalization of ASTM. Our standards are, by use in international trade, global, recognized, and accepted worldwide. Our standards are also widely used as a starting point for international standardization. To further enhance the international use of ASTM standards, ASTM will continue to encourage the participation of foreign nationals in the work of our committees and will continue to support our committees in appropriate international standardization activities.

In summary, the United States is currently represented in many international standards forums through the voluntary standards system. The environment and complexity of international standards development continues to change, and will require close coordination between government and private sectors if the United States is to meet its "industrial competitiveness" goals. ASTM through its voluntary consensus system, will continue to support the international standards objectives of its constituency, and will take appropriate steps to guarantee adequate resources for data generation and administrative support. The ASTM system will continue to be responsive to the stimulus received from the marketplace. This will enhance the use of our standards, and the technology they embody, in appropriate organizations worldwide. We recommend that this course of action be adopted by other organizations in the United States involved in standardization.

Thank you for this opportunity to contribute to this conference on Standards and Trade.

Co-Chairman Ambler

INTRODUCTION OF DR. GEORGE S. WHAM

DR. GEORGE WHAM CHAIRS ANSI --THE AMERICAN NATIONAL STANDARDS INSTITUTE AND IS ALSO VICE PRESIDENT OF GOOD HOUSEKEEPING MAGAZINE AND INSTITUTE.

HE RECEIVED A B.S. FROM CLEMSON UNIV., AN M.S. FROM THE UNIV. OF TENNESSEE, AND PH.D. FROM PENNSYLVANIA STATE UNIV. HE DIRECTED RESEARCH AND DEVELOPMENT AT PHILIPS VAN HEUSEN PRIOR TO JOINING GOOD HOUSEKEEPING AFTER BEING A PROFESSOR AT TEXAS WOMEN'S UNIVERSITY AND RESEARCH ASSOCIATE AT PENN STATE.

DR. WHAM CHAIRED THE ASTM COMMITTEE ON CONSUMER PRODUCT STANDARDS AND SERVES ON ADVISORY COMMITTEES OF THE U.S. DEPT. OF AGRICULTURE AND NATIONAL ACADEMY OF SCIENCES. HE'S BEEN A MEMBER OF ANSI FOR 30 YEARS AND ON ITS BOARD FOR TEN, CHAIRING THE ANSI CONSUMER INTEREST COUNCIL AND A STANDARDS BOARD. HE WAS PRESIDENT OF THE AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS AND IS ACTIVE IN MANY ORGANIZATIONS AND SCIENTIFIC AND HONORARY SOCIETIES.

HE WILL DISCUSS TODAY THE IMPACT OF STANDARDIZATION PROGRAMS ON COMPETITIVENESS IN WORLD TRADE, CARRIED OUT IN THE VOLUNTARY STANDARDS SYSTEM. ANSI MEMBERSHIP IN THE MAJOR INTERNATIONAL, NON-GOVERNMENTAL STANDARDS GROUPS ISO AND IEC PROVIDE ACCESS TO THE DEVELOPMENT OF INTERNATIONAL STANDARDS. TO MEET OUR NEEDS, WE SHOULD BE ACTIVE IN ISO AND IEC AND URGE OUR TRADING PARTNERS TO DO LIKEWISE.

PRESENTATION OF DR. GEORGE S. WHAM
CHAIRMAN, AMERICAN NATIONAL STANDARDS INSTITUTE

I WANT FIRST TO COMMEND THE U.S. DEPARTMENT OF COMMERCE FOR SPONSORING THIS IMPORTANT AND TIMELY CONFERENCE ON STANDARDS AND TRADE. THE AMERICAN NATIONAL STANDARDS INSTITUTE, WHICH I SERVE AS CHAIRMAN OF THE BOARD OF DIRECTORS, WAS ESTABLISHED BY THE U.S. DEPARTMENT OF COMMERCE, WAR AND NAVY, AND FIVE LEADING PRIVATE SECTOR TECHNICAL ORGANIZATIONS IN 1918. WE HAVE ENJOYED EXCELLENT RELATIONS WITH THE DEPARTMENT AND ITS NATIONAL BUREAU OF STANDARDS THROUGHOUT OUR HISTORY. NBS INCIDENTALLY CONTRIBUTES EXTENSIVELY TO U.S. PARTICIPATION IN INTERNATIONAL STANDARDS THROUGH TECHNICAL INPUT, COMMITTEE PARTICIPATION AND IN FURNISHING DELEGATES TO BOTH TECHNICAL AND POLICY FORUMS OF INTERNATIONAL ORGANIZATIONS WITH WHICH ANSI IS AFFILIATED.

THE INTRODUCTION TO THIS CONFERENCE CALLED ATTENTION TO THE IMPORTANCE OF INTERNATIONAL TRADE AND TO THE NEGATIVE TRADE BALANCE WHICH THE U.S. HAS SUFFERED. I AM PLEASED TO REPORT THAT IN THE STANDARDS FIELD THE OPPOSITE IS TRUE. UNITED STATES' STANDARDS HAVE A STRONG, POSITIVE TRADE BALANCE IN THE MARKETPLACE. WE KNOW THIS BECAUSE WE MARKET U.S. (AMERICAN NATIONAL) STANDARDS THROUGHOUT THE WORLD AND AT THE SAME TIME WE MARKET THE NATIONAL STANDARDS OF OUR TRADING PARTNERS (FOREIGN STANDARDS) IN THE UNITED STATES. YOU MAY BE SURPRISED TO LEARN THAT FOR 1986 INTERNATIONAL SALE OF AMERICAN NATIONAL STANDARDS TOTALED $1,450,000. FOREIGN STANDARDS SOLD IN THE UNITED STATES CAME TO $116,000. THAT IS A 12.5:1 POSITIVE RATIO. STUDIES CONDUCTED BY MAJOR U.S. STANDARDS DEVELOPERS SHOWED THAT THERE IS OVERWHELMING ACCEPTANCE OF U.S. STANDARDS IN INTERNATIONAL USAGE, INCLUDING TRADE AND COMMERCE.

BEFORE WE BREAK INTO WORKING GROUPS TO DISCUSS POSSIBLE ACTIONS TO IMPROVE U.S. COMPETITIVENESS IN WORLD MARKETS AND THE ROLE OF STANDARDS IT WOULD BE WELL TO TAKE A FEW MINUTES TO REVIEW:

- o WHO WE ARE -- WHERE WE ARE
- o THE BASIS FOR PARTICIPATION IN INTERNATIONAL STANDARDS
- o POSITIVE ASPECTS OF INTERNATIONAL STANDARDS
- o WHAT CAN BE DONE TO IMPROVE INTERNATIONAL STANDARDS AND THEIR USEFULNESS IN TRADE AND COMMERCE

IN THE TIME ALLOTTED WE MUST CONFINE OURSELVES TO AN OVERVIEW OF THE SUBJECT BUT, PERHAPS BY DOING SO, WE CAN LAY THE GROUNDWORK FOR FURTHER DISCUSSION. IN MY REMARKS I WILL TRY TO AVOID THE ALL BUT ESSENTIAL ACRONYMS. SINCE FOUR ORGANIZATIONS WILL BE MENTIONED THROUGHOUT, IT WOULD BE WELL TO IDENTIFY THEM AT THE START:

(ANSI) AMERICAN NATIONAL STANDARDS INSTITUTE

(ISO) INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

(IEC) INTERNATIONAL ELECTROTECHNICAL COMMISSION

(CCITT) INTERNATIONAL TELEGRAPH & TELEPHONE CONSULTATIVE COMMITTEE

THE AMERICAN NATIONAL STANDARDS INSTITUTE IS THE "UNITED STATES" MEMBER OF THE TWO LEADING NONGOVERNMENTAL INTERNATIONAL STANDARDS ORGANIZATIONS -- ISO and IEC. ANSI ALSO TAKES AN ACTIVE ROLE IN CCITT THROUGH THE U.S. GOVERNMENT'S ADVISORY GROUP AND BY VIRTUE OF THE INPUT FROM ISO AND IEC.

IT'S IMPORTANT TO REALIZE AND ACCEPT THE FACT THAT ANSI IS UNIQUE AMONG THE NATIONAL STANDARDS GROUPS THAT MAKE UP ISO AND IEC. IT DOES NOT DEVELOP STANDARDS. IT HAS NO PROPRIETARY POSITION ON STANDARDS. ITS REPRESENTATION IS BY THOSE WHO ARE INTERESTED IN AND AFFECTED BY POTENTIAL INTERNATIONAL STANDARDS. IT IS FREE FROM COERCION OR CONTROL BY ANY COMMERCIAL, POLITICAL OR PAROCHIAL GROUP. ANSI OPERATES ON THE BASIC PRINCIPLE OF CONSENSUS WITH A STRONG COMPETITIVE MARKET ORIENTATION.

ANSI IS THE VOLUNTARY NATIONAL STANDARDS COORDINATOR. IT IS A FEDERATION OF STANDARDS COMPETENCE COMPOSED OF INDUSTRIAL AND COMMERCIAL COMPANIES, TRADE, SCIENTIFIC, TECHNICAL, PROFESSIONAL, LABOR, CONSUMER AND GOVERNMENTAL MEMBERS.

WE HAVE OVER 1000 COMPANY MEMBERS AND 250 ORGANIZATIONAL MEMBERS. MORE THAN 200 ORGANIZATIONS--TECHNICAL AND PROFESSIONAL SOCIETIES, TRADE ASSOCIATIONS, AND OTHER GROUPS SEND THEIR STANDARDS TO ANSI FOR CONSENSUS VERIFICATION AND APPROVAL.

THE ROLE(S) OF ANSI ARE:

- o NEW PROGRAM DEVELOPMENT
- o COORDINATION OF NATIONAL STANDARDS SYSTEM
- o APPROVAL OF STANDARDS AS AMERICAN NATIONAL STANDARDS
- o INTERNATIONAL REPRESENTATION
- o GOVERNMENT INTERFACE
- o INFORMATION CLEARINGHOUSE

YOU MIGHT ASK WHY ANSI IS THE MEMBER OF ISO AND IEC. THIS DERIVES FIRST FROM THE FACT THAT ANSI'S PREDECESSOR ORGANIZATIONS WERE AMONG THE FOUNDERS OF BOTH ISO AND IEC. U.S. ELECTROTECHNICAL INTERESTS (BEFORE NATIONAL STANDARDIZATION) AGREED TO DEVELOPMENT OF AN INTERNATIONAL ELECTROTECHNICAL COMMISSION IN 1906. TWENTY YEARS LATER (1926) THE AMERICAN STANDARDS ASSOCIATION (ASA) JOINED WITH OTHER NATIONAL ORGANIZATIONS IN FORMING A FEDERATION OF NATIONAL STANDARDS BODIES KNOWN AS THE INTERNATIONAL FEDERATION OF NATIONAL STANDARDIZING ASSOCIATIONS OR ISA. ISA WENT OUT OF BUSINESS DURING WORLD WAR II. IN 1946 ASA MET WITH THE NATIONAL STANDARDS ORGANIZATIONS OF ALLIED NATIONS, AMONG THEM CHINA, UNITED KINGDOM, FRANCE AND RUSSIA, AND BEGAN A SERIES OF MEETINGS WHICH RESULTED IN THE FORMATION OF ISO IN 1946.

AS A CHARTER MEMBER, ANSI IS THE ONLY U.S. MEMBER OF ISO. THROUGH ITS U.S. NATIONAL COMMITTEE TO IEC, ANSI ENJOYS SIMILAR MEMBERSHIP RESPONSIBILITY IN IEC. IN ADDITION TO ISO AND IEC, ANSI HOLDS MEMBERSHIP IN AN IMPORTANT FORUM OF PACIFIC RIM COUNTRIES KNOWN AS THE PACIFIC AREA STANDARDS CONGRESS (PASC). PASC DOES NOT DEVELOP STANDARDS BUT HAS PROVED USEFUL IN COORDINATING THE VIEWS OF, FOR EXAMPLE, U.S., JAPAN, CANADA, CHINA AND OTHER PACIFIC COUNTRIES.

IN ISO, IEC AND PASC, ANSI DOES THE FOLLOWING:

- o COORDINATES U.S. VIEWPOINTS
- o PROVIDES MANAGEMENT LEADERSHIP AND TECHNICAL SUPPORT
- o PAYS TOTAL U.S. DUES (IN EXCESS OF $1 MILLION IN 1987)
- o SERVES ON GOVERNING BODIES

THERE IS REMARKABLE SIMILARITY IN THE OPERATING MODES OF ANSI AND ISO. WHERE IN THE UNITED STATES ANSI DEPENDS UPON THE STANDARDS DEVELOPING ORGANIZATIONS SUCH AS SAE, CBEMA, ASME, ASTM, NEMA, NFPA, IEEE AND UL (TO NAME SOME OF THE LARGER) TO COME UP WITH STANDARDS ISO IS DEPENDENT UPON NATIONAL STANDARDS ORGANIZATIONS SUCH AS ANSI, BSI, AFNOR, DIN, JISC AND GOST (RUSSIA) FOR ADMINISTRATION OF TECHNICAL COMMITTEES WHICH SUBMIT DOCUMENTS FOR APPROVAL. THE END RESULT OF ISO'S WORK IS INTERNATIONAL STANDARDS.

THERE IS AN INTERGOVERNMENTAL ORGANIZATION, THE INTERNATIONAL TELEGRAPH AND TELEPHONE CONSULTATIVE COMMITTEE OR CCITT WHICH IS VITAL TO DEVELOPMENT AND IMPLEMENTATION OF TELECOMMUNICATION STANDARDS. ANSI HAS ACCESS TO CCITT THROUGH THE U.S. STATE DEPARTMENT'S ADVISORY GROUPS. HOWEVER, BOTH ISO AND IEC ALSO FEED INTO CCITT. CONVERSELY MANY CCITT RECOMMENDATIONS BECOME THE BASIS FOR ISO AND IEC INTERNATIONAL STANDARDS.

THE KEY QUESTION BEFORE US IS -

WHAT CAN INTERNATIONAL STANDARDS DO FOR COMPETITIVENESS? JOHN RANKINE, FORMER ANSI CHAIRMAN OF THE BOARD, ANSWERED THIS QUESTION IN A RECENT SPEECH. SIMPLY, THEY CAN UNIFY DEFINITIONS OF USER NEEDS FOR WHICH A WIDE SPECTRUM OF MANUFACTURERS CAN COMPETE TO FULFILL. BUT, IN ORDER TO DO SO, THE INTERNATIONAL STANDARDS MUST MEET THE FOLLOWING CRITERIA.

FIRST, THEY MUST BE TRULY CONSENSUS STANDARDS DEVELOPED ON A VOLUNTARY BASIS BY ALL AFFECTED INTERESTS - GOVERNMENT, USERS, PRODUCERS AND OTHERS.

SECOND, THEY MUST BE RELEVANT AND MEET USER NEEDS.

THIRD, THE INTERNATIONAL STANDARDS MUST BE TIMELY. THIS IS PARTICULARLY TRUE IN THE AREA OF FAST MOVING TECHNOLOGY. IF THEY ARE NOT, THEY DO NOT MEET USER NEEDS AND THEY DO NOTHING TO FOSTER COMPETITIVENESS. TO THE CONTRARY, THEY BOG IT DOWN.

FOURTH, THE STANDARDS MUST BE NONDISCRIMINATORY. THEY SHOULD NOT PRECLUDE ANYONE WHO HAS A VALID ANSWER TO A USER'S NEED FROM COMING FORWARD AND FILLING THAT NEED.

FIFTH, THEY SHOULD PERMIT INNOVATION AND CREATIVITY BECAUSE IT IS IN THESE QUALITIES - INNOVATION AND CREATIVITY - THAT TRUE COMPETITIVENESS AND THE GREATEST SERVICE TO USERS LIE.

NOW WHAT IS THE BEST WAY TO PRODUCE SUCH STANDARDS?

THAT WAY HAS EXISTED FOR A LONG TIME, AND IT CONTINUES TO EXIST TODAY. IT IS THE VOLUNTARY CONSENSUS STANDARDS SYSTEM AT THE NATIONAL AND INTERNATIONAL LEVELS. AFNOR, ANSI, BSI, DIN, ETC - THE NATIONAL BODIES ENSURING CONSENSUS AT THEIR NATIONAL LEVELS AND INTERACTING WITH ISO AND IEC TO PRODUCE THE NEEDED INTERNATIONAL STANDARDS. IT HAS WORKED WELL IN THE PAST. IT MUST NOT ONLY WORK WELL IN THE FUTURE BUT EVEN BETTER THAN IT EVER HAS IN THE PAST. AND LET ME EMPHASIZE HERE THAT WE HAVE THE MOST PRODUCTIVE VOLUNTARY STANDARDS SYSTEM IN THE WORLD AND IT PROVIDES THE UNITED STATES WITH OUTSTANDING OPPORTUNITIES FOR EFFECTIVE LEADERSHIP IN INTERNATIONAL STANDARDIZATION.

THIS TRIED AND PROVEN SYSTEM OF BRINGING TOGETHER ALL INTERESTS - GOVERNMENTS, USERS, PRODUCERS AND OTHERS - SO ALL CAN PARTICIPATE BUT NONE CAN DOMINATE IS STILL THE BEST WAY, WHEN IT IS DEVOID OF POLITICS IN DEVELOPING, ADOPTING AND IMPLEMENTING WORLD STANDARDS THAT SET THE STAGE FOR COMPETITIVENESS.

SOME CONTEND THAT THE SYSTEM IS NOT WORKING SO WELL. LET ME MENTION SOME OF THE REASONS. FIRST, THOSE THAT ARISE WITHIN THE SYSTEM. FUNDING IS A KEY PROBLEM ON SEVERAL COUNTS. MANY INDUSTRIAL SUPPORTERS OF THE VOLUNTARY STANDARDS SYSTEM ARE CURRENTLY CUTTING EXPENSES TO STAY COMPETITIVE. ALSO, FROM A U.S. POINT OF VIEW, IS THE DEVALUATION OF THE U.S. DOLLAR VERSUS THE SWISS FRANC, FOR IT IS IN SWISS FRANCS THAT WE, ANSI, MUST PAY OUR DUES TO ISO AND IEC. THE ANSI 1987 BUDGET FOR ISO/IEC DUES AND ADMINISTRATION IS $2,108,000.

SLOWNESS OF THE SYSTEM IS A FREQUENT CRITICISM EASILY MADE. A CONSENSUS SYSTEM, WHERE EVERYONE HAS TO BE HEARD, BY ITS NATURE CANNOT PRODUCE INSTANTANEOUS RESULTS. SO MUCH OF THAT CRITICISM MAY BE UNFAIR, BUT NOT ALL OF IT. FOR EXAMPLE, CAN ANYONE AFFORD TO WAIT AN AVERAGE OF 3 YEARS TO REACH TECHNICAL AGREEMENT ON A STANDARD? OR 4 TO 5 YEARS TO SEE IT PUBLISHED AND AVAILABLE FOR USE?

NOW LET ME TURN TO THE EXTERNAL INFLUENCES AFFECTING ISO AND IEC. PROBABLY THE MOST SIGNIFICANT ONE IS THE INCREASE IN POLITICAL PRESSURES THAT ARE BEING BROUGHT TO BEAR ON THESE TRADITIONALLY NONGOVERNMENTAL AND APOLITICAL INTERNATIONAL BODIES.

FOR EXAMPLE, THE PROGRAM OF THE EUROPEAN ECONOMIC COMMUNITY WILL STRENGTHEN THE INFLUENCE OF THE EEC IN THE FINAL STANDARDS ADOPTED BY ISO AND IEC. THIS WILL RESULT FROM THE ACTIVITIES OF EUROPEAN REGIONAL STANDARDS BODIES IN RESPONSE TO EEC REQUIREMENTS AND DEADLINES. WE SEE THE EMERGENCE OF STRONG REGIONAL INFLUENCES IN WHAT HAS BEEN AN ARENA OF NATIONAL STANDARDS BODIES INTERACTING WITH THEIR INTERNATIONAL ORGANIZATIONS. IF THESE REGIONAL INPUTS ARE ARRIVED AT ON A TRULY CONSENSUS BASIS FOR ADVANCING INTERNATIONAL

STANDARDS, THEY CAN BE USEFUL. HOWEVER, IF THEY ARE DISCRIMINATORY OR EXCLUDE OUTSIDE INTERESTS FROM BEING HEARD, THEN THEY WILL UNDERMINE THE INTEGRITY AND UTILITY OF BOTH ISO AND IEC. BOTH ORGANIZATIONS AND THEIR MEMBER BODIES MUST RESIST SUCH INFLUENCES AND SCRUPULOUSLY ADHERE TO THEIR PROCEDURES FOR OPENNESS AND DUE PROCESS IN THE DEVELOPMENT OF STANDARDS NATIONALLY, REGIONALLY AND INTERNATIONALLY.

ANOTHER RELATIVELY NEW FACTOR ON THE SCENE IS THAT CERTAIN LARGE STANDARDS USER AND IMPLEMENTER GROUPS ARE STARTING COLLECTIVELY TO DEVELOP LIMITED SELECTIONS OF OPTIONS FROM IEC AND ISO STANDARDS THAT WILL THEMSELVES PROBABLY BECOME INTERNATIONAL STANDARDS. THESE ACTIVITIES ARE ALSO COMPETING FOR RESOURCES AND TO A CERTAIN DEGREE CHALLENGING THE POSITION OF ISO AND IEC. THIS IS NOT TO ARGUE AGAINST THE NEED FOR SUCH ACTIVITIES BUT TO RECOGNIZE THAT THEY DO SPREAD AVAILABLE AND OFTEN SCARCE RESOURCES EVER MORE THINLY. IT WOULD BE PREFERABLE TO HAVE THESE GROUPS WORKING IN THE JOINT ISO-IEC SYSTEM TO ACHIEVE OPTIMUM COORDINATION AND AVOID WASTE AND DUPLICATION.

IN SUMMARY, IF THE INTERNATIONAL STANDARDS BODIES ARE GOING TO CONTINUE TO BE THE SOURCE OF INTERNATIONAL STANDARDS THAT WILL DEFINE TRUE USER NEEDS AND PROMOTE COMPETITIVENESS, THEY ARE GOING TO HAVE TO DO IT IN AN ENVIRONMENT OF GREATER COMPETITION FOR RESOURCES AND INCREASING POLITICAL PRESSURES. THIS MEANS THAT ISO AND IEC HAVE TO WORK EFFICIENTLY BETWEEN THEMSELVES AND WITH OTHERS SUCH AS THE CCITT. THEY HAVE TO FOCUS THEIR RESOURCES ON THE EFFICIENT AND TIMELY PRODUCTION OF NEEDED STANDARDS, AND THEY HAVE TO RESIST THE POLITICAL AND PROTECTIONIST PRESSURES THAT THREATEN THEIR RAISON D'ETRE.

THE FUTURE

WHAT IS THE OUTLOOK FOR INTERNATIONAL STANDARDS DEVELOPMENT BY ISO-IEC? WILL THEY MEET FUTURE NEEDS? IN THE TIME THAT I HAVE BEEN ASSOCIATED WITH IT I HAVE SEEN SOME REMARKABLE PROGRESS.

TWO YEARS AGO FEW THOUGHT THERE WAS ANY REAL HOPE OF MERGING ISO/IEC ACTIVITY. WE NOW HAVE IN PLACE A JOINT ISO/IEC TECHNICAL COMMITTEE ON INFORMATION TECHNOLOGY (JTC 1). EVERYONE CONCERNED IS WORKING OVERTIME TO BRING ABOUT AN ORDERLY MIGRATION FROM TECHNICAL COMMITTEES OF TWO ORGANIZATIONS TO A JOINT EFFORT OPERATING UNDER HARMONIZED PROCEDURES AND HOPEFULLY CAPABLE OF BRINGING INTO THE FOLD LIAISON ORGANIZATIONS OUTSIDE ISO/IEC TO PRODUCE NEEDED STANDARDS ON A TIMELY BASIS.

WE HAVE AN IMPROVED MANAGEMENT TEAM IN THE ISO AND I UNDERSTAND CHANGES ARE IN THE OFFING IN IEC. THE PRESIDENTS OF ISO AND IEC ARE COMMITTED TO STRENGTHENING THE ABILITY OF THE JOINT VENTURE TO MEET INTERNATIONAL DEMANDS AND EXPECTATIONS.

AT THE MOMENT THERE IS STILL REGIONALIZATION OF STANDARDS AND CERTIFICATION REQUIREMENTS. THESE APPEAR TO BE UNDER CONSIDERATION BY THREE SEPARATE, UNCOORDINATED GROUPS, EACH WITH A FEELING THAT SOMEHOW THEY CAN GAIN A COMPETITIVE EDGE. THIS IS FOOLHARDY IN INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS. THESE ARE MULTINATIONAL INDUSTRIES. THEIR SERVICES KNOW FEW NATIONAL BOUNDARIES. THE NEED FOR THEIR SERVICES IS UNIVERSAL, NOT REGIONAL. IT IS DIFFICULT IF NOT IMPOSSIBLE TO PUT BARRIERS AROUND KNOWLEDGE. IN TIME ALL WILL KNOW -- AND ALL <u>COULD</u> BENEFIT FROM COORDINATED INTERNATIONAL DEVELOPMENT OF STANDARDS, TESTING PROTOCOLS, AND, WHERE NECESSARY, REGULATIONS.

AS HAS BEEN STATED EARLIER, THE BEST FORUM FOR INTERNATIONAL STANDARDS IS ISO/IEC/CCITT. THE WAY TO SEE THAT THE SYSTEM DOES PRODUCE IS FOR ALL OF US, ESPECIALLY IN THE UNITED STATES, TO PARTICIPATE IN AND SUPPORT ISO/IEC. THIS WILL MOTIVATE OUR TRADING PARTNERS TO DO LIKEWISE. WE CAN SUCCEED, PROVIDED WE ALL USE THE SYSTEM PROPERLY AND DO NOT ABUSE IT.

IN THE UNITED STATES, INDUSTRY, BUSINESS, GOVERNMENT, AND OTHER INTERESTS HAVE INCREASED THEIR INVOLVEMENT IN INTERNATIONAL STANDARDIZATION IN RECENT YEARS. ONE MOTIVE HAS BEEN ECONOMIC--A RESPONSE TO CHANGING WORLD CONDITIONS. THE PRESSING NEED TO FIND INTERNATIONALLY ACCEPTABLE SOLUTIONS TO STANDARDS PROBLEMS INVOLVED IN THE WORLDWIDE APPLICATION OF ADVANCED SCIENCE AND TECHNOLOGY IS ANOTHER REASON FOR THE INCREASE.

THE MESSAGE IS CLEAR. U.S. INDUSTRY, BUSINESS, AND GOVERNMENT ARE AS PRAGMATIC AS ANY IN THE WORLD. WITH ANSI LEADERSHIP AND COORDINATION THEY HAVE INCREASED PARTICIPATION IN INTERNATIONAL STANDARDS ACTIVITIES TO INFLUENCE THE CONTENT OF STANDARDS THAT AFFECT TRADE; AND ALSO TO CONTRIBUTE TO SOLUTION OF PROBLEMS THAT CANNOT BE SOLVED AT THE NATIONAL LEVEL.

EFFECTIVE U.S INVOLVEMENT IN INTERNATIONAL STANDARDIZATION MUST BE MAINTAINED AND EXPANDED. THE LEADERSHIP AND RESPONSIBILITY THAT ARE THE BASIS OF U.S. CONTRIBUTIONS TO GLOBAL STANDARDIZATION MUST BE SUSTAINED. THE U.S. MUST CONTINUE TO SELECT THE BEST TECHNICAL TALENT TO INTERFACE WITH INTERNATIONAL STANDARDS ORGANIZATIONS. CONTINUITY, RESPONSIBILITY, AND LEADERSHIP ARE

ESSENTIAL TO THE CREDIBILITY THAT MAKES IT POSSIBLE FOR U.S. INTERESTS TO ACHIEVE ACCEPTANCE OF THEIR VIEWS IN THE TECHNICAL WORK OF THE INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO), THE INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC), AND OTHER INTERNATIONAL GROUPS. THESE QUALITIES ARE ALSO ESSENTIAL TO ENABLE ANSI, THE U.S. MEMBER OF ISO AND IEC, TO COORDINATE AND MANAGE U.S. PARTICIPATION AND INFLUENCE THE POLICIES, PROGRAMS, FINANCING, AND FUTURE PLANNING OF THESE ORGANIZATIONS.

THE OFFICERS AND DIRECTORS OF ANSI SUPPORT INTERNATIONAL PARTICIPATION. A SUBSTANTIAL PORTION OF THE INSTITUTE'S RESOURCES ARE COMMITTED. WE WELCOME YOUR INTEREST. WE WELCOME YOUR INVOLVEMENT.

BIBLIOGRAPHY

Peyton, Donald L. Meeting user demands for high technology standards. Presented at 1986 General Assembly of Association Francaise de Normalisation (AFNOR); 1986, April 24; Paris, France. ANSI Reporter. 20(11): 1986 May.

Peyton, Donald L. X3 and ANSI--Partners in progress. Presented at 25th Anniversary Celebration of Accredited Standards Committee X3; 1986, February 12; Dallas, TX.

Rankine, L. John. International standards and competitiveness. Presented at Public Conference of the American National Standards Institute; 1986, March 18; Alexandria, VA.

Rankine, L. John. Leadership and responsibility in international standardization. ASTM Standardization News. 12(12): 21-24; 1984 December.

Travaglini, Vincent D. ANSI's role in international standardization. Proceedings of Conference on International Standards; 1985, April 2; Gaithersburg, MD. Gaithersburg: U.S. Department of Commerce, National Bureau of Standards; 1985, 41-47.

With foreign nationals on your U.S. committees, how do you develop U.S. positions on draft international standards?

Robert Baboian:

The participation of foreign nationals injects international technology into ASTM standards. These standards become more attractive in the international marketplace, and are more likely be used as the basis for international standards, such as ISO or IEC standards, or as de facto standards.

It seems that the ANSI system, more or less, acts as a barrier to the United States adopting IEC or ISO standards. Is the international standards effort a one-way street?

George Wham:

I don't believe so. I have participated in TAG groups and have found that many European nations can't make a decision on the spot, but go back to their governments to get a position because they are quasi-governmental bodies. Americans can often make decisions on the spot. I don't believe that the ISO system or the ANSI system is a deterrent to promoting and promulgating international standards. On the contrary, since we operate on the democratic principle of consensus, we can rarely avoid this perhaps long route in order to achieve standards universally acceptable to all parties in this country.

A criticism often raised internationally is the inability of ASTM to police manufacturers for compliance to ASTM standards. Are there any plans to take a more active policing role to strengthen your international position?

Robert Baboian:

Our international position is strengthened by the fact that industry, academia, and government work together in our standardization process. The resulting product is a mix of the best technology, and this is injected into the international marketplace.

Don't foreign sales of U.S. standards precede U.S. imports of foreign goods? Doesn't a positive trade balance in standards mean a negative trade balance in goods? (D. Hack)

George Wham:

The answer is no. It is very difficult for us to hide our lights, our standards, under the bushel and not trade information with our trading partners. Information is very difficult to conceal, I can't see any way to prevent the sale of U.S. standards abroad. The point is well taken, but I

don't believe that selling our standards necessarily influences in any overwhelming sense the trade balance in this country.

Please comment on the role of academia in the ASTM process.

Robert Baboian:

The participation of academia in the ASTM standardization process is very important because they bring in the latest technology. We encourage that and have an academic affairs subcommittee, a successful Board committee, that has to maximize increased participation by academia in our standardization process.

The European Economic Community will adopt voluntary ISO standards as regulatory, while they (the standards) remain voluntary to the United States. They have several votes vs. the one for the United States (one vote per country). Hence, there is a one-way level of control regarding trade. What should or can we do about this? What is the answer? (J. Tesk)

George Wham:

We've always had the problem of standards being adopted as regulations in foreign countries, whereas in this country the voluntary standards system has been predominant. I hope we continue to maintain that position. I don't know the answer to that question beyond that, Dr. Ambler.

Stanley I. Warshaw
Director, Office of Product Standards Policy
National Bureau of Standards

Working Group Announcements

We are distributing an announcement sheet for three Working Groups which will deal with major issues raised by today's presentations, namely, participation in international standardization activities, acceptance of test and certification data, and adoption of U.S. standards. Room locations are shown on the back of this sheet. The Working Groups will convene promptly at 2:00 o'clock, so I suggest that you peruse this during the lunch hour, select the topic that most appeals to you, then go to the appropriate room. We will reconvene at 3:30 this afternoon and the Working Group Chairpersons will summarize the findings of their Working Groups. These reports will be incorporated in the proceedings, along with the presentations that you heard this morning. They are indeed important since these deliberations will help set the agenda for the future both within the Department of Commerce and in some private sector organizations. I urge you to voice your thoughts in the working group sessions and have them reported.

We will now adjourn for lunch. Let me again thank all those who participated this morning, as well as our co-chairman, Dr. Ambler, who happens to be my boss, too.

Dr. Warshaw

Introduction of Work Group 1 Chair

The first Working Group, on participation in international standardization activities, was chaired by Cathy Kachurik. Cathy is on the staff of the Computer and Business Equipment Manufacturers Association (C.B.E.M.A.) and has had considerable international standards experience as director of the X-3 Secretariat.

CONFERENCE ON STANDARDS AND TRADE

Minutes of Working Group 1
Participation in International Standardization

Chairperson: Catherine Kachurik
C.B.E.M.A.

Twenty-two individuals from industry, Government, and standards developing organizations participated in Working Group 1. The experience levels of the participants covered a wide range, most having been in the standards community for several years or more.

After introductions and general comments, issues were selected for further discussion:

Dollar factors
Manpower issues
Changing of the guard
Education of the U.S. participants and preparation of delegations
Reduction in industry participation

The discussions resulted in the following brief definitions of problem areas and possible solutions:

DOLLAR FACTORS

The dollar factors included the funding necessary to support capable delegates and establish continuity, whether those dollars were contributed by the standards developing organization or the volunteer delegates themselves. Most participants felt that serious problems with exchange rates are creating an ongoing impact greatly affecting U.S. representation.

Possible solutions are:

- Funds could be collected to support delegates, although most participants stated that few delegates are currently supported by the parent body. Some do, however, support officer-level volunteers.

- Other felt that, unless funding for international standards activities were built into an equitable system and budgeted on an annual basis, the only other way to provide such funding would be by special assessment.

- In addressing the problems related to exchange rates, it was proposed that U.S. participants host more meetings, creating savings for their sponsoring organizations and offering their international counterparts the "bargain" of coming to the United States.

CHANGING OF THE GUARD

Most participants felt that the days of individuals devoted solely to standards activities and allowed the "luxury" of becoming well-versed generalists had long passed. Most participants face the turn-over of their "elder statesmen," with little hope to replacing these people, or of bringing others up to speed to replace the losses with wide experience.

Possible solutions are:

- As a short-term fix, hire consultants. However, many participants pointed out that, in most technologies, the participants' ability to keep up with the dynamics of their particular industry would soon diminish, and that consultants could not solve the long-term problem.

- Others suggested the need for a media program to influence Chief Executive Officers and ensure that the United States does not lose its leadership capabilities. Perhaps a coherent package on the impact of the current trend should be placed in leading trade magazines.

- Mr. William Rockwell, ANSI Vice President, reported that ANSI has hired a media consultant to develop projects such as these. ANSI will support such efforts and is forming a communications council so that members may assist with the particular expertise necessary.

EDUCATION OF U.S. PARTICIPANTS AND PREPARATION OF DELEGATIONS
REDUCTION IN INDUSTRY PARTICIPATION

The basic problem is that CEOs do not recognize the importance of standards efforts; management must be taught on a case-by-case basis. As a result, when organizations start running "lean and mean," the most likely impacts come in the standards arena first.

Possible solutions are:

- Some members felt that the education problem can best be handled on a fundamental basis, i.e., development of standards awareness levels of CEOs and marketing personnel during their college level education.

- As part of their basic business management curriculum, both groups should be taught the importance of standards and the business impacts which standards create. Several participants indicated that they sit on academic advisory boards and assist in the creation of course material dealing with standards at the college level.

- Other members suggested that the standards community use the advertising media to the fullest to create those messages and better articulate the value of standards in order to convince corporate America. Others felt that the onus is on the standards developing bodies to better identify the bottom line impacts that standards can make.

The participants were unable, in the short time available, to further explore solutions. However, the group's consensus was that the role for Government should be to:

seek the opinion of industry;
remain responsive and reactive to standards needs; and
support such positions during the GATT talks.

Dr. Warshaw

Introduction of WG 2 Chair

I now call upon Gerry Ritterbusch of Caterpillar, Inc. Gerry is Caterpillar's manager of product safety and environmental testing. More important is the fact that he is responsible for all of Caterpillar's standards activities, both domestically and internationally, and all product-related litigation in that regard. Gerry will report on Working Group 2, dealing with test data acceptance.

CONFERENCE ON STANDARDS AND TRADE

Minutes of Working Group 2
Test Data Acceptance

Chairperson: Gerald Ritterbusch
Caterpillar, Inc.

U.S. industry often faces the problem of making a product for export to a foreign country available for test and evaluation by the approved authority in that country to obtain certification under their rules and regulations. Some foreign countries allow their personnel to make such inspections or evaluations in the United States but considerable scheduling and travel costs are entailed (and assessed to U.S. industry). When the tests must be conducted within the foreign country, the costs are considerably higher than testing in the United States due to the shipping cost of the test product. When the tests are destructive, the costs end up being quite significant. In the event of initial failure to meet the requirements, retests must be scheduled and much time is lost.

To enhance the ability to export products, industry needs a less burdensome method at low cost to obtain certification to the importing country's requirements. Testing in the United States could result in certification with the least disruption to the manufacturer's operation under a system that assures the importing country that the product meets its requirements. Various means can be used to assure that test data is properly obtained and is valid.

U.S. manufacturers prefer self-certification as the least burdensome method. Product liability consequences provide adequate incentive for self-certification even if customer acceptance isn't the determining factor for the manufacturer.

The next most appropriate approach to certification is based on the witnessed test, where an impartial observer reviews the test, the measurement method and instrumentation and audits the recorded information. A third approach but more costly is the method where the product is removed to a specific third party laboratory where the staff conducts and reports on the test. If this latter method is used in the United States, it is still less costly than if such testing is required in the foreign country.

The choice between the witnessed test and test in a specific third party laboratory is really a question of cost. With some types of machinery, it is much more practical to test at the manufacturer's laboratory or development facility than to relocate the product to an independent laboratory for the test. Some specialized products require test setups which have to be built only for the certification test instead of using existing setups at the manufacturer's site. Also, disposal of spent test components is much better handled at the manufacturer's site.

By agreeing to a consensus test procedure which includes adequate allowance for test variability, a witnessed test should be acceptable in terms of producing valid and accurate data. A key aspect is that the requirement utilize a consensus standard, such as an ISO standard. ISO also has procedures which

cover the aspects of certification to be followed to provide adequate assurance that the test method meets acceptable engineering standards of performance.

The working group came to the following conclusions:

- Initiatives to further adoption of measures that provide for acceptance of valid test data by importing countries should be initiated or continued at all levels including:
  - GATT Multilateral Trade Negotiations (The Uruguay Round)
  - Bilateral negotiations
  - Standards Code Committee deliberations

- Testing in the United States is significantly more advantageous to U.S. producers than shipping products overseas for certification testing. Self-certification, witnessed tests and utilizing third-party test agencies are reasonable methods to accomplish certification in the United States. All three approaches have merit depending on the specific industry and customer base. As a general rule, costs and complexity increase as the method of certification moves from self-certification to witnessed tests to third-party testing and certification.

- A recognized and competent laboratory accreditation program should be considered as a component of the three methods recommended for attaining certification. A voluntary approach to laboratory accreditation was favored over any mandatory program.

- Certain manufacturers perceive certification as an additional cost item with no added value to the product.

- An agreement that facilitates acceptance of U.S. generated test data may further facilitate access by foreign producers to U.S. markets. Some current U.S. regulations on acceptance of foreign test data may require modification.

- Industry should undertake a program to better inform the general public about certification programs on a broad basis so the consumer has a better understanding about them, what they mean, and what they may cost.

- Different types of products and their markets should be treated differently (e.g., the inherent differences ascribed to "capital goods" as contrasted to "consumer goods").

Dr. Warshaw

Introduction of WG 3 Chair

Next we'll hear from Barbara Boykin, manager of the standards of the Aerospace Industries Association, one of the larger standards-developing bodies in the United States. Their standards are appreciated and used in many nations and, in fact, are de facto international standards. Barbara, who is also Vice Chair of the Industry Functional Advisory Committee on Standards, will report on Working Group 3 on adoption of U.S. standards.

CONFERENCE ON STANDARDS AND TRADE

Minutes of Working Group 3

Adoption of U.S. Standards

Chairperson: Barbara Boykin

Aerospace Industries Association

The working group's objective was to explore how the United States can better promote international acceptance of U.S. standards as a means to improved trade performance.

The chairperson opened the meeting with a statement that many of our key trading partners, particularly the European nations, seem to do a better job of promoting international acceptance of standards developed by their domestic industries as a tool for trade promotion. She highlighted the many standards-related programs which national standards organizations in France, Germany, and the United Kingdom operate -- such as centralized databases, translation of standards, training programs and technical exchanges, technical help for exporters, certification programs, etc. -- and their active involvement in international standards activities. In these and most other industrialized countries, government plays a strong role in national and international standardization through participation and funding. This contrasts with the U.S. approach, which depends on private sector participation, funding, and leadership.

Members of the working group emphasized the importance of strong U.S. participation in international standardization efforts and in negotiations to harmonize testing and certification requirements and procedures. As U.S. industry seeks to serve a growing number of markets internationally, progress in these areas becomes essential.

Working group members discussed their companies' experience in international standardization activities. Several participants noted that U.S. success in the International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), and other international standards fora depends on the active participation of a relatively small number of multinational companies. Such firms are most able to commit the necessary resources and to make use of international industry contacts. Broader participation, however, would be beneficial.

The work group discussed the reasons for past successes in ISO/IEC and agreed that results achieved generally were proportional to the quality of U.S. input. In cases where U.S. industry fielded a knowledgeable team and could draw upon a strong U.S. standard, ISO/IEC frequently accepted this standard as the basis for its own. The group concluded that the United States could improve its performance in international standards fora by preparing more effectively for meetings and maintaining the quality of U.S. standards.

The chairperson raised the issue of whether ISO recognition was necessary to promote international adoption of U.S. standards. Some industries -- such as aerospace and construction equipment -- work directly with their European counterparts to achieve standards harmonization. Working group participants held differing opinions on this subject, but most agreed that a harmonized ISO standard often provided the best long-term response. Several stressed the importance of allowing the market to determine which, if any, standards should be adopted internationally in a given case. The best available standard - whatever its origin - will receive marketplace recognition. Many U.S. national standards fall into this category. To be successful in international standardization activities, the United States must be prepared to support the "best" standard available, whether of U.S. origin or not.

The working group also considered the question of how widely ISO/IEC standards are used. Governments may draw upon ISO/IEC standards as a basis for mandatory regulations. The U.S. needs to do more to implement international standards, and to encourage its trading partners to do so as well, to promote harmonization. Harmonization of testing, certification and laboratory accreditation is even more essential.

There was a consensus that more could be done to promote better awareness of U.S. standards internationally. Although some leading standards developers are addressing this matter through various channels, such as providing standards to U.S. embassies, greater sustained effort and follow up are necessary to achieve desire results. Efforts to provide information and education to potential users of U.S. standards are complicated by the large number of U.S. standards and the decentralized U.S. system. NBS, which has a computerized data base of over 28,000 U.S. standards, is in a good position to help expand recognition and use of these standards at home and abroad. The greatest opportunities for promoting U.S. standards appear to be in developing countries, where information on foreign standards frequently is inadequate.

The U.S. Government may be able to play an increasing role in assisting U.S. industry achieve these goals. NBS representatives outlined several standards outreach programs in which they are now involved, including an effort to help Saudi Arabia and other developing countries establish or modernize their national standards programs. The U.S. Agency for International Development has provided (and may still provide) funding for similar purposes. A few years ago, NBS established a training program on standards for U.S. State Department, Foreign Commercial Service, and U.S. AID officials assigned to overseas duty stations. Such efforts contribute to long-term recognition and acceptance of U.S. standards.

Members of the working group noted that governments in other industrialized nations work more closely with private industry in the standards area. In contrast to the U.S. Government, which often imposes regulatory roadblocks, these governments have one primary mission: to help their industry compete internationally. Standards are recognized and utilized as a tool to promote exports.

Nevertheless, there was consensus in the working group that the U.S. voluntary system should be retained, because it produces the best quality standards. It was recognized that such activities as funding, promotion and education are the joint responsibilities of private sector and government. The issue of standardization needs to gain greater visibility and momentum in the United States through linkage with the trade and competitiveness debate. The private sector must raise the issue of standardization to get it onto government's agenda.

In conclusion, the group agreed that U.S. industry needs to "think internationally" in both the standards and trade arenas, abandoning nationalistic approaches and adapting to international market needs. Based on its discussion, the working group developed the following recommendations, which were reported to the full conference:

- Strengthen U.S. representation in ISO and IEC to increase recognition and adoption of U.S. standards;

- Foster international adoption of "best" standards available, based on test of market competition;

- Pursue harmonization efforts with the European Community, and encourage implementation of with international standards by U.S. and its trading partners;

- Increase awareness and availability of U.S. standards to potential users abroad through outreach programs;

- Expand efforts to educate U.S. Government officials assigned overseas on standards-related issues and their effect on trade; provide information and copies of standards to embassies;

- Target developing countries as potential new markets for U.S. standards and develop appropriate government and private sector outreach approaches;

- Increase awareness and access of U.S. and foreign firms to centralized sources of information on U.S. standards, such as NBS;

- Continue to negotiate with other governments regarding acceptance of foreign-generated test data and simplification of certification requirements, encouraging movement toward third-party and reciprocal acceptance arrangements;

- Expand current U.S. laboratory accreditation programs;

- Preserve U.S. voluntary standards system under private sector leadership;

- Enhance U.S. industry-government cooperation on standards issues;

- Increase private and/or government funding of programs to expand international awareness and adoption of U.S. standards;

- Encourage private sector to take greater initiative in raising the visibility of standards issues with U.S. Government officials; and

- Encourage U.S. business community to adapt to changing world rather than just domestic market needs, using appropriate international standards.

Dr. Warshaw

Closing Remarks

In my opinion, our Working Group Chairpersons and everybody who participated in the sessions they summarized deserve a round of applause for their excellent contributions.

I hope that today's conference will have proved to be useful to you.

It would be remiss of me to neglect to mention those who contributed to putting this conference together, especially Walter Leight of the National Bureau of Standards and Chris Bates of the International Trade Administration. They worked diligently with the speakers, and will continue those efforts to publish proceedings within the next two months. I want to thank a number of Bureau staff, in particular, Sara Torrence, Judy Baker, Wanda Capino. There were others who helped, and we are very much appreciative.

It's our hope, at least in the Department of Commerce, that this day's conference and the subsequent proceedings will provoke further thought amongst us all, both in the Government and in the private sector, as to what we can do to improve the trade situation for the United States through standards and standards-related activities, such as certification and testing. We hope that some of the seeds sown at this conference will mature into something productive. I assure you that the Department, including the Bureau of Standards and the International Trade Administration, will work with the private sector to achieve the needed results.

I thank you for being here. We look forward to sending you a copy of the proceedings in the next two months and to your further comments and suggestions. We stand adjourned. Thank you.

List of Registrants and Participants
Conference on Standards and Trade
May 5, 1987

Donald Ableson
Office of the U.S. Trade Representative

Wendy Allen
American Gear Manufacturing Association

Rita Allen
National Bureau of Standards

Ernest Ambler
Director
National Bureau of Standards

Kenneth C. Appell
Colgate-Palmolive Company

William Atkinson, Jr.
National Machine Tool Builders' Association

Robert Baboian
Chairman, ASTM

Judith Baker
National Bureau of Standards

Karen Barkley
National Bureau of Standards

Christopher M. Bates
International Trade Administration

Peter Bell
Vice President
Norton Company

Harvey Berger
National Bureau of Standards

Robert Bowles
PPG Industries

Barbara Boykin
Aerospace Industries Association

Edward Brady
National Bureau of Standards

Les Breden
Department of Housing and Urban Development

Maureen Breitenberg
National Bureau of Standards

James Briar
NEC America, Inc.

Carroll Brickenkamp
National Bureau of Standards

Peter Bridenbaugh
Vice President
Alcoa

Clarence Brown
Deputy Secretary of Commerce

Crawford Brubaker
Deputy Assistant Secretary for Aerospace, ITA

John F. Bruce
Howrey & Simon

Steven Butcher
Rubber Manufacturers Association

Donald C. Calvert
Aerospace Industries Association

Wanda Capino
National Bureau of Standards

Carl Cargill
Digital Equipment Corporation

Thomas J. Carr
Motor Vehicle Manufacturers Association

Alan Chapple
Engineering Times

Patrick Cooke
National Bureau of Standards

Lisa Cooper
National Bureau of Standards

Donald Corrigan
National Bureau of Standards

Tony Costanzo
International Trade Administration

A. R. Daniels
NCR Corporation

Helen Davis
ASTM

Eugene DeMichele
Water Pollution Control Federation

Jill Derderian
International Trade Administration

Carvin DiGiovanni
National Machine Tool Builders' Association

John L. Donaldson
American Society for Engineering Education

Marge Donnely
International Trade Administration

Ambassador Diana Lady Dougan
Department of State

Dale Dunlop
International Brotherhood of Electrical Workers

Dan Duvall
International Trade Administration

Jewell Duvall
Office of Consumer Affairs, DOC

C. Edward Eckert
VME Americas Inc.

Rainer U. Faust
AT&T International

Andrew Fee
Wilson Instrument Division

Thomas Feindel
Digital Equipment Corporation

Henry Fernandez
Department of Education

Timothy Finton
Department of State

Sidney Fischler
National Bureau of Standards

Donald C. Fleckenstein
General Electric Company

Robert C. Flink
Medtronic, Inc.

Mark E. Foster
Lindsay, Hart, Neil & Weigler

Tom Gallogley
International Trade Administration

Lawrence Galowin
National Bureau of Standards

Patricia Garfinkel
Staff, U.S. House of Representatives

Carol Gassaway
National Bureau of Standards

Robert Gladhill
National Bureau of Standards

Scott Goddin
International Trade Administration

Lars Granholm
National Marine Manufacturers Association

Terry Grimes
National Bureau of Standards

Daniel Gross
National Bureau of Standards

Bruce Guile
National Academy of Engineering

David Hack
Library of Congress

Wiley Hall
National Bureau of Standards

Brian Hannon
International Trade Administration

William F. Hanrahan
CBEMA

Bennett Harman
International Trade Administration

Stephen Hasko
National Bureau of Standards

Marie Haugen
International Trade Administration

Ann Heffernan
National Bureau of Standards

John Henry
International Trade Administration

Bill Holroyd
International Trade Administration

Jeffrey Horlick
National Bureau of Standards

Gregory Hovendon
Department of Justice

George C. Hsu
Reynolds Metals Company

Laurie Hurtado
International Trade Administration

Dominick Iacova
Department of State

Richard Jackson
International Trade Administration

Michael Jezbera
International Trade Administration

J. E. Jones
Internatinal Data Corporation

Catherine A. Kachurik
CBEMA

Vicky Kader
International Trade Administration

Linda Keyes
National Bureau of Standards

Frank K. Kitzantides
National Electrical Manufacturers Association

Joan Koenig
National Bureau of Standards

Howard Kontje
Underwriters Laboratories Inc.

Paul Krupenie
National Bureau of Standards

C. Scott Kulicke
Chairman and CEO
Kulicke and Soffa Industries, Inc.

Jean-Pierre Laclau
Norex, U.S.A.

John J. Lainson
Dutton-Lainson Company

Debbie Lamb
International Trade Administration

Louis F. Laun
Asst. Secretary for International Economic Policy, ITA

Walter G. Leight
National Bureau of Standards

Ethelene Lewis
National Bureau of Standards

Donald R. Mackay
National Bureau of Standards

Ted Manakas
Corporation for Open Systems

Paul Marrangoni
Federal Communications Commission

Edward Marsh
Ameritech

Dorothy Mazaka
Department of the Treasury

Edward J. McCarthy
Rubber Manufacturers Association

Barbara Meigs
National Bureau of Standards

John Meserve
International Trade Administration

John Mooney
Federal Trade Commission

Beverly Murray
National Medical Care, Inc.

William S. Murray
National Electrical Manufacturers Association

Reinhold Nelissen
John Deere & Co.

Karl Newell
National Bureau of Standards

George Nichols
Consumer Product Safety Commission

Jean Nichols
National Bureau of Standards

Nancy Niero
C. W. Communications

Joseph G. O'Grady
President, ASTM

JoAnne Overman
National Bureau of Standards

Joan Pauley
National Medical Care, Inc.

John C. Peirce
Howrey & Simon

Ellen Perlman
Design Graphics World

Herbert Phillips
Air-Conditioning and Refrigeration Institute

Charles Pitcher
International Trade Administration

Ronald Powell
National Bureau of Standards

Raymond Pratt
International Trade Administration

Anthony Radspieler
Bureau of the Census

John Rasmussen
International Trade Administration

Karl Reiner
International Trade Administration

Brian S. Reiser
Bureau of the Census

Gerald H. Ritterbusch
Caterpillar Inc.

William Rockwell
American National Standards Institute

Frank Rose
Federal Communications Commission

Andrew G. Salem
Society of Automotive Engineers

Karen Sasahara
International Trade Administration

Gary T. Saterfield
Anti-Friction Bearing Manufacturers Association

Jane Schweiker
ASTM

Lyle Schwartz
National Bureau of Standards

Thomas D. Searles
American Lumber Standards Committee

R. E. Segabache
Wilson Instrument Division

Deborah Semb
International Trade Administration

Edwin Shykind
International Trade Administration

Keith Sidwell
Canadian Standards Association

Linda Simon
Automation News

Marcia Slarskey
Digital Equipment Corporation

Christine Sloop
International Trade Administration

Bruce Smart
Under Secretary for International Trade

Daniel W. Smith
American National Standards Institute

Michael Smith
Deputy U.S. Trade Representative

H. Brooke Stauffer
National Electrical Manufacturers Association

Ron Stone
National Marine Manufacturers Association

M. Leroy Stoner
American Institute of Aero and Astronautics

Sheryl Swed
Small Business Administration

John Tascher
Department of Defense

Gregory Tassey
National Bureau of Standards

Nan Taylor
International Data Corporation

John Tesk
National Bureau of Standards

Diane Thompson
Standards Council of Canada

Sara Torrence
National Bureau of Standards

Suzanne Troje
International Trade Administration

Terrance Troy
National Bureau of Standards

James W. Tucker
ETL Testing Laboratories, Inc.

Joan Tyler
National Bureau of Standards

Brenda Umberger
National Bureau of Standards

Gerald Underwood
Office of Metric Programs, DOC

George Uriano
National Bureau of Standards

Eric Vadelund
National Bureau of Standards

Liliane Volcy
Federal Communications Commission

Josephine Walkowicz
National Bureau of Standards

William Walmsley
International Trade Administration

LeRoy Walser
Department of Education

J. K. Walters
American Petroleum Institute

Otto Warnlof
National Bureau of Standards

Stanley I. Warshaw
National Bureau of Standards

Monica Welch
Electronic Data Systems
Corporation

George S. Wham
Chairman, American National
Standards Institute

Alan Whelihan
Office of Metric Programs, DOC

Mitch White
Intergraph Inc.

Richard White
Richard White Wood Products, Inc.

Karen Wilde
International Trade Administration

Eric A. Williams
Digital Equipment Corporation

Merrill A. Yohe, Jr.
AMP Incorporated

NBS-114A (REV. 2-8C)

U.S. DEPT. OF COMM. BIBLIOGRAPHIC DATA SHEET (See instructions)	1. PUBLICATION OR REPORT NO. NBSIR 87-3573	2. Performing Organ. Report No.	3. Publication Date JUNE 1987

4. TITLE AND SUBTITLE

Proceedings of
Conference on Standards and Trade

5. AUTHOR(S)

Walter G. Leight, Editor

6. PERFORMING ORGANIZATION (If joint or other than NBS, see instructions)

NATIONAL BUREAU OF STANDARDS
U.S. DEPARTMENT OF COMMERCE
GAITHERSBURG, MD 20899

7. Contract/Grant No.

8. Type of Report & Period Covered

9. SPONSORING ORGANIZATION NAME AND COMPLETE ADDRESS (Street, City, State, ZIP)

10. SUPPLEMENTARY NOTES

☐ Document describes a computer program; SF-185, FIPS Software Summary, is attached.

11. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here)

The International Trade Administration and the National Bureau of Standards sponsored a one-day Conference on Standards and Trade on May 5, 1987. These Proceedings contain the texts of speeches by Government officials and representatives of the business and standards communities; summaries of question-and-answer periods; and reports of Working Groups that addressed Participation in International Standardization Activities, Test Data Acceptance, and Adoption of U.S. Standards.

12. KEY WORDS (Six to twelve entries; alphabetical order; capitalize only proper names; and separate key words by semicolons)

Standards; trade.

13. AVAILABILITY

☒ Unlimited

☐ For Official Distribution. Do Not Release to NTIS

☐ Order From Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

☒ Order From National Technical Information Service (NTIS), Springfield, VA. 22161

14. NO. OF PRINTED PAGES

109

15. Price

$18.95

USCOMM-DC 6043-P80