昭和62年度

帰国研修員フォローアップチーム報告書

―認証制度分野―

昭和63年3月

国際協力事業団
研修事業部

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はじめに

この報告書は、我が国が実施する「認証検査制度コース」「工業標準化コース」及び「工業標準化・品質管理シニアセミナー」の３つの集団研修コースに参加した帰国研修員に対するアフターケア業務の一環として、昭和６２年７月１７日から８月２日までの１７日間、サウディ・アラビア及びガーナの２ケ国に派遣したフォローアップチームの業務報告である。

本書が、帰国研修員の活動状況、彼らが抱えている諸問題、要望等について関係各位の一層深いご理解をいただくための一助となり、今後の研修コース、また研修員受入事業の改善に資することができれば幸いである。

なお、本件の実施のためにご協力を賜わった外務省、通商産業省、財団法人日本規格協会、及び現地において数々のご指導とご協力を賜わった在外公館並びに関係機関の皆様に深甚の謝意を表したい。

昭和６３年３月

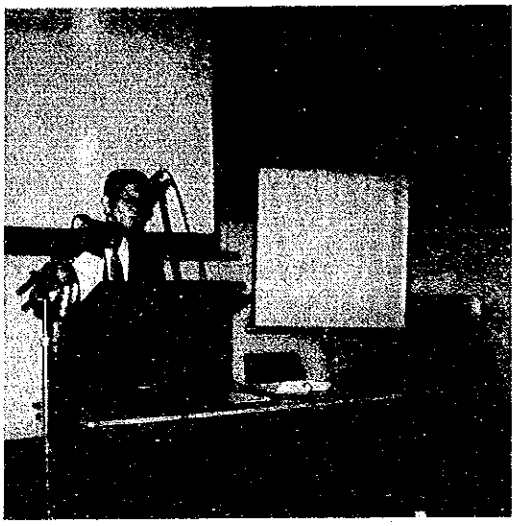
研修事業部

部長　岡　部　和　夫

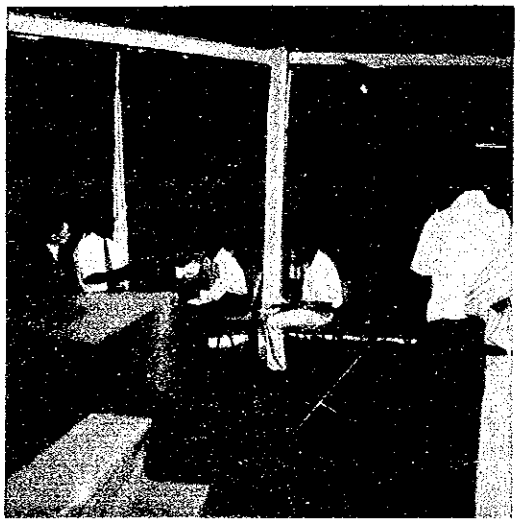
62年7月20日
サウディ・アラビア標準化
公団（SASO）にて
(右)帰国研修員　Mr. Salamah
General Director of
Quality Control
General Dept
(右)吉永団長

62年7月21日
サウディ・アラビア工業・
電力省訪問
(右)Mr. Al-Refaie,
Director of Organization
Dept

62年7月22日
SASOでの技術セミナーにて
講演を行なう
関口団員



62年7月29日
ガーナのブリティシュカウンシル内講堂での技術セミナーにて講演を行なう
吉永団長



62年7月29日
上記の技術セミナー後ＴＶ局の取材を受ける吉永団長（右）と、Dr. Danso, Director, ガーナ規格委員会（左から2番目）

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Ⅱ　調査概要（団員構成、目的、日程等）

対象分野	派遣国	派遣期間	人数
（和文）認証制度	サウディ・アラビアおよびガーナ	昭和６２年７月１７日～８月２日	3
（英文）CERTIFICATION SYSTEMS			

関係省庁（関係部署）	受入機関（関係部署）
通商産業省工業技術院標準部	財団法人日本規格協会

団員構成	氏名	担当業務	所属先
	吉永正則	総括	財団法人日本規格協会参与
	関口克	技術	古河電気工業株式会社中央品質委員会担当部長
	上島篤志	業務調整	国際協力事業団研修事業部研修第三課

目的
本巡回指導班は認証検査制度コース、工業標準化コース、工業標準化・品質管理シニアセミナーの各コースに参加した帰国研修員の所属機関および関係機関を訪問し、1. 現地での技術指導を行なう、2. 我が国で実施した研修の成果を測定する、3. 当該研修分野に係る当該国の技術的問題点およびニーズを把握する、の３つを行なうことにより、今後の研修員受入事業並びにフォローアップ事業の向上、改善に資することを目的として派遣する。

調査・指導内容
(1) セミナーを通じての当該分野に関する我が国の最新技術情報の提供および当該国における技術水準向上のための技術指導
(2) 研修員が我が国で習得した技術の現地における適用度の測定評価
(3) 当該分野に関する当該国の一般事情、技術水準および今後の我が国の研修に対するニーズの把握
(4) 対象機関の概要調査および帰国研修員の動向調査
(5) 今後の我が国のフォローアップ事業に対するニーズの把握
(6) 当該分野に関する所見（助言、勧告等）の提出
(7) 当該研修コースおよびフォローアップ事業に対する助言、勧告
(8) 巡回指導に係る報告書の作成

派遣国選定理由	1. 過去派遣済の地域との重複を出来るだけ避け、中近東、アフリカ地域とする。
	2. 中近東、アフリカ地域において研修員受入実績が多く、かつ６２年度研修員受入枠割当のある国とする。

実績	実施回数及び帰国研修員総数	３コース合計　２８回　396名
	巡回指導実績	５１年度　フィリピン、パキスタン、エジプト ５８年度　チリ、ペルー
	派遣国研修員受入実績	サウディ・アラビア　１２名　　ガーナ　７名

日	程
昭和62年７月17日（金）	東京発
18日（土）	バハレーン経由、リヤド着
19日（日）	日本大使館表敬、ＪＩＣＡ事務所訪問
20日（月）	サウディ・アラビア標準化公団（ＳＡＳＯ）訪問 （研修員の上司に面接、研究所訪問）
21日（火）	商業省、工業・電力省訪問（共に研修員の上司に面接） ＳＡＳＯ総裁主催昼食会
22日（水）	セミナー実施（ＳＡＳＯ会議室にて）、ＳＡＳＯ研修員に面接、チーム主催昼食会
23日（木）	日本大使館及びＪＩＣＡ事務所報告
24日（金）	資料整理
25日（土）	リヤド発、ジェッダ及びアディス・アベバ経由、アクラ着
26日（日）	調査準備
27日（月）	日本大使館表敬、ＪＩＣＡ事務所訪問
28日（火）	国営産業公社（ＮＩＣ）、経営開発・生産性研究所（ＭＤＰＩ）、及びガーナ規格委員会（ＧＳＢ）訪問
29日（水）	セミナー実施（ブリティッシュカウンシル講堂にて）、 チーム主催昼食会
30日（木）	日本大使館及びＪＩＣＡ事務所報告
31日（金）	アクラ発
８月　１日（土）	アムステルダム経由
２日（日）	東京着

Ⅲ　フォローアップ調査内容

項　目	調査事項	調査対象	調査方法	調査結果		
				サウディ・アラビア	ガーナ	総合
1. サウディ・アラビアおよびガーナにおける認証制度、工業標準化、品質管理分野の現状と問題点	(1) 当該分野の現状	帰国研修員、所属機関	視察、意見交換	Saudi Arabian Standasds Organization(SASO)が中心となり、標準化を推進している。SASOは職員数約300名の政府機関である。400種以上の規格が制定されており、その実施は強制。また各種分野（繊維、機械等）にて日本人専門家が派遣されている。	標準化等の推進は政府機関であるGhana Standards Board(GSB)が中心となって行っている。GSBは職員数約200名。約300種の規格が制定されその実施は強制。また Management Development and Productivity Institute（MDPI）という政府機関（研究者数約60名）では品質管理関係の研修コースを毎年開催し普及に努めている。	
	(2) 問題点	帰国研修員、所属機関	視察、意見交換	各種規格のアラビア語によるコンピューター情報管理が行われる等、日本以上に進んだ面がSASOにはある。又試験所の設備も比較的良く整っており、各種の工業製品に対する品質、信頼性の評価が十分に行われている様子が推察できる。外国人技術者（エジプト人、インド人等）の姿がSASO本部、試験所共散見され外国の技術力の導入が活発に行われている様子が伺われる。	ガーナ国内では中小企業における品質管理技術者不足、企業に品質管理のインセンティブが働かない売手市場、外貨不足により設備更新が困難、などの状況により標準化が進んでいない。GSBでは帰国研修員が夫々要職に着き活躍しているものの、近代的な設備、技術には程遠い状況の中で懸命に努力している。分野的には計量器の管理、医薬品、食品の検査に特に力を入れていると聞いた。	発展途上国と一口にいっても夫夫の国の工業力、技術力の水準に大きな差があることが痛感される。これは夫々の国の技術者の層の厚さと経済力の違いに依るところが極めて大きい、特にガーナについてはハード面（研究施設）での充実を図らないと技術協力において片手落ちとなろう。
2. 日本で実施した研修の成果	(1) 対象者	帰国研修員本人	質問表、面接	全帰国研修員12名に質問表を送付。内7名より回収。他は巡礼休暇入り等の理由で回収できず。又7名中4名に面接を行った。（氏名等はⅤ. 4. (1)参照）	全帰国研修員7名に質問表を送付。全員より回収した。また全員に面接。（氏名はⅤ. 4. (2)参照）	
	(イ) 帰国後現在までの業務	帰国研修員本人	質問表、面接	7名（SASO 6名、商業省1名）とも勤務先の変更なし。夫々相当な知識経験をもって業務に従事。	7名中6名は変更なし。1名のみ国営産業公社からランプ会社へ転職。	研修員の転職は少く、研修時の機関にて勤務を続けている。
	(ロ) 日本での研修における最も有用な科目	帰国研修員本人	質問表、面接	日本の経営システム、サンプリング手法、工場審査、標準化概論、大学教授による品質管理に関する講義、等が	TQC（全社的品質管理）及びQCサークル等の日本的経営システム、統計的手法の応用、認証制度、農産物製品に	各国とも各研修員ごとに多種多様な科目を挙げている。それだけに個々の研修員の要望に完全に応じるのは難しいと思われ

項　目	調査事項	調査対象	調査方法	調査結果		
				サウディ・アラビア	ガーナ	総合
				挙げられた。傾向としては工場審査を行う立場のSASO職員を中心として工場審査に関するニーズが高い。	対する適切なラベリング、標準化概論、等が上げられた。傾向としては農産物製品に関する認証についてニーズが目立つ。	るが、その中でも出来る限りの改善努力を行うべきであろう。
	(ハ) 研修成果を自国へ移転する方法	帰国研修員、所属機関	視察、意見交換	・JICA研修コースの教材を組織内で回覧。 （・ペルシャ湾岸諸国にて構成する地域内標準化機構である、ASMO主催のセミナー講師に帰国研修員がなり、他国へも移転を図っている。 なお、同セミナーのテキスト、B5判、118ページを入手したがアラビア語で書かれているため、本報告書への掲載は行なわなかった。）	・GSBあるいはMDPI開催のセミナーにて使用するテキストをより詳細なものに改善し、カリキュラムをより充実させている。（カリキュラムの充実例としてMDPIが毎年主催するQCセミナーにつき1982年と85年で対比させたものをV.5に掲載） ・企業に出向いての技術指導 ・国営産業公社にいた研修員は同社にてTQC概念を工場で品質管理に導入。	両国とも活発な技術移転を行っているが特にガーナではGSB職員が民間企業を指導・育成しようとする姿勢が顕著である。これに対しサウディ・アラビアではSASO職員に上記の傾向は見られず、SASOから民間への技術移転は顕著ではないと見受ける。
	(ニ) 技術移転の際の問題点	帰国研修員、所属機関	視察、意見交換	特に出ず。	ガーナの経済状況が近年良くなく、産業界がQC等、新たな変化を導入する意欲に乏しい。	
	(ホ) 今後の研修コースへの要望 ・期間	帰国研修員本人	質問表、面接	現状で良しが多数。	現状より更に長期間（6カ月程度）を望むものが多い。	各国、各研修員により差はあるものの期間延長の要望は高い。
	・プログラム内容			・実務的な工場見学（通産省の審査官が同行する見学、現場見学と質疑応答に時間を更にかける）。 ・我が国の種々の制度そのものの紹介についてよりも、個々の技術について深く、しかも説明とその実証を組み合わせたものを実施し、これに多くの時間をかける。	・研修員間での討議に更に時間をかける。 ・研修員の大学での専攻等を考慮して研修員をグループ分けする。その上で別々の工場見学を行う。 ・ガーナの現状により近い小企業を見学する。（日本の大企業はおろか中小企業でもガーナと比して洗練されすぎている） ・品質管理を含め会社、工場における日本的経営に関心あり。とくに小企業においてどの様にQCを進めたら良いかについて。	・認証等専門分野に絞り込まず、一般的な見学コースをたどるだけの工場見学は避けなければならない。 ・実務的な研修を望む声が非常に強い。「日本の制度は一般的にこうなっている」式の紹介は意義が低いのではないか。というのはISOには日本の紹介資料があり、情報に接することが出来る。研修員が関心を持つのは、更に一歩つっこんで、これだけ発展した日本だが、過去には様々な問題があった筈であり、それ

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				サウディ・アラビア	ガ　ー　ナ	総　合
						を日本はどう解決したのかというところかと思われる。 ・ガーナの様なQCの導入段階の国については、いきなりQC手法に取組むのではなく、まず工場の整理整頓から始める必要がある。というのは、まず何が奇麗で何が汚いのかをはっきりさせないと現場中心のQCが出来ず、管理者中心のQCとなってしまい、効果を挙げ得ないからである。
	・研修手法			現状で良し。	現状で良し。	OHP、スライド等を取り入れた点は評価されていると思われる。
	・研修員の参加資格	帰国研修員本人	質問表、面接	・標準化コースは必要とされる実務経験を3年から1年に。（初心者に向いたレベルである為） ・出来るだけコース参加者のレベルを揃える。	特になし。	・3コースとも一律3年間の実務経験を要求しているのを再検討する必要がある。 ・コースの内容に適した参加者が選定されることが必要。この為には、研修候補者がGeneral Information（G.I）によって更に具体的にコースのレベルを把握できるようにする必要がある。また受入れ選考会の際に研修員のレベル等適切な情報が得られるようにする。 SASOには実際に工場でQCに携わる人はいない。サウディ・アラビアでQCを更に普及させる為にはQCの実際を指導する者を募集する必要がある。
	(ハ) フォローアップ事業への要望	帰国研修員本人	質問表、面接	特になし。	特になし。	・今回の様な技術水準の違う2国を調査するのは有意義である。というのは比較がしやすく、かつ他の中間的な発展段階にある国も推量しやすいと思われるから。 ・1カ国1週間の調査期間は長すぎず、短かすぎず適切と思われる。 ・次回、認証制度分野で派遣するとすればアジアNICSの1カ国、パプア・ニューギニア、

項　目	調査事項	調査対象	調査方法	調　査　結　果		
				サウディ・アラビア	ガ　ー　ナ	総　合
						及び両国の中間的段階にあると思われる国の3カ国程度を一案として考えてはどうか。公開セミナータイプの数を拡充して、一般タイプは研修コースのニーズを探るコンタクトミッション的性格を強めることが今後必要と考える。例えば調査対象国の当該分野における関係機関を研修員の所属先に限らず幅広く回りニーズを探る等。
	(2) 帰国研修員所属先宛	帰国研修員所属機関	面接			
	(イ) 帰国研修員への評価と定着度			特に否定的評価無し。	特に否定的評価無し。	
	(ロ) JICA研修事業への要望			・正直なところ研修コースは期待していた程ではない(SASO)。 ・86年度1名採られたのみである。要請書は出しているのだからもっと採ってほしい(商業省)。	特になし。	サウディ・アラビアに関しては、86年SASOと商業省より要請書が上がってきており、日本から専門家が派遣されていることに鑑みて、SASOからの候補者を選考した経緯あり。
3. 英文所見	上記1.及び2.に係る調査結果と所見	提出先は各研修員の所属先	提出方法は各JICA事務所を通じて	SASO、商業省、工業・電力省に提出。(V. 3. (1) 参照)	GSB、MDPI、NIC、UNITED LAMP LTDに提出。(V. 3. (2) 参照)	
4. 公開セミナー		セミナー対象者は帰国研修員、その他の関係者。	セミナー実施方法は半日。OHP、16㎜等を活用した講義及び質疑応答	・昭和62年7月22日(水) 9:30～11:30 ・リヤド市内のSASO会議室 ・30名参加(全てSASO職員) ・日本における工業標準化と品質管理(吉永団長)60分 ・日本における TQC の現状(関口団員) 60分 ・質疑応答0分	・昭和62年7月29日(水) 9:15～12:15 ・アクラ市内のブリティシュカウンシル内講堂 ・35名参加(帰国研修員所属先の他、ガーナ大学等各種機関より) ・JIS FOR YOU (16㎜)30分 ・日本における工業標準化と品質管理(吉永団長)60分 ・日本における TQC の現状(関口団員) 60分 ・質疑応答30分	今後のフォローアップは通常タイプも公開セミナーに重点を置く(半日ではなく2日間位)方向で検討してはどうか。というのは遠路日本より来訪したのに半日のセミナーでは短かすぎて残念との声がガーナではあり。

Ⅳ　技術セミナー実施内容

1. 技術セミナー実施計画書

表Ⅳ－1、2の通りの計画にてセミナーを実施した。なお、調査団が離日前に作成した技術セミナーの実施計画においては、「ＪＩＣＡの技術協力」についての講演及びスライド「ＧＵＩＤＥ　ＴＯ　ＪＩＣＡ」の上映も計画していた。しかしサウディ・アラビアに関しては、SASOは専門家派遣を近年継続して受けておりＪＩＣＡはかなり認識されているとＪＩＣＡ現地事務所では判断しており、又、ＪＩＣＡの一般的な活動振りよりも、技術情報の提供により時間を割いて欲しい旨希望がＳＡＳＯよりあった為、「ＪＩＣＡの技術協力」と「ＧＵＩＤＥ　ＴＯ　ＪＩＣＡ」は省略した。又ガーナに関しても技術情報の提供により時間を割いて欲しい旨ＧＳＢより希望があり、又、ＪＩＣＡ現地事務所にて所有するスライド上映機が「ＧＵＩＤＥ　ＴＯ　ＪＩＣＡ」のスライドと装普方式が異なる為、上映出来ないことが判明したので、サウディ・アラビアに同じく省略することとした。

2. 実　施　状　況

概要はⅢ、フォローアップ調査内容に記された通りであった。

若干説明を加えれば、サウディ・アラビアにおいては、ＳＡＳＯ以外の帰国研修員、及びその関係者が集まらなかった為、「ＳＡＳＯ身内の集い」の感はあったものの、ＳＡＳＯ内部では、本セミナーを実施する旨、内部回覧を廻す等の取りはからいがあった。又、質疑応答については、午前11時30分頃から開始し、ＳＡＳＯ側司会者が聴衆に質問を求めたものの、質問は出なかった。この理由としては２つ考えられる。１つはセミナー参加者の多くが、ＳＡＳＯの研究所に勤務する検査担当官であり、当日の講義内容は直接業務に関係するものというよりは、関連分野についての情報を聴いてみる、という立場であった為。もう１つは、イスラム教の祈りの時間が昼前にあり、ちょうど、それに近づいていた為である。因みにサウディ・アラビア人の参加者はセミナー終了後全員直ちに会場を去ってしまい、セミナー終了後講師と懇談したのは、ＳＡＳＯで働くインド人スタッフ２人であったことが象徴的である。

次にガーナでは、ＧＳＢの月報にて本フォローアップ調査団が事前に紹介され（Ｖ．６参照）、ガーナ側の期待の大きさを感じさせる。又、セミナーはアクラ市内の中心地にある、ブリティッシュカウンシル内の講堂で実施したが、同会場の借上については、ＧＳＢ側より申し出があり、ＧＳＢ側が借上料を全額負担する便宜を取りはかって貰えた。更に、参加者もＧＳＢからの15名の他、ＭＤＰＩ、ＮＩＣ、United Lamp Ltd.の各帰国研修員所属先、その他の民間企業、研究機関より若干名づつ見られた。これら多彩な参加者から活発な質疑応答が行われ、盛り上がりを見せた。

両国において吉永団長及び関口団員は英語で直接講義を行い、その際には、ＯＨＰ、16㎜フィ

ルムを効果的に使用した為、参加者の興味を誘ったセミナーとなった。なお、両講師の準備したOHPシートについては、ガーナで使用した後、MDPIの帰国研修員より、ガーナ国内にて自らが講義をする際の貴重な参考資料になるとして、供与の希望があった。これについて団内で検討した結果、MDPIよりも、更に各種国内関係機関等への複写等の配慮があると思われるGSBに7月31日供与した。手交した資料名についてはV. 7の通り。

表Ⅳ－1　技術セミナー実施計画書（サウディ・アラビア）

講義内容	概　　要	認証検査制度、工業標準化等の状況	（配布）資料	時間配分	担当者	使用機器
1. 日本における工業標準化と品質管理	1.1. 工業化標準化活動 1.2. 品質管理活動 1.3. その他	サウディ・アラビア（帰国研修員カントリーレポート及びISO資料による）：Ministry of Commerceの監督のもとで、Saudi Arabian Standards Organization（SASO）が中心となり標準化を推進している。SASO職員は約300名。政府予算100%で運営される。400種以上の規格が制定され、その実施は強制されている。 問題点としては、職員に対する教育、訓練を強化する必要がある。尚、現在SASO以外の試験設備を活用する為、認定制度を準備中である。	・テキスト「INDUSTRIAL STANDARDIZATION IN JAPAN」（配布） ・テキスト「Japan's experience in standardization and quality control」（配布）	1時間	(財)日本規格協会 吉永	OHP
2. 日本におけるTQCの現状	2.1. TQCコンセプト 2.2. 方針管理 2.3. トップマネジメントによる評価 2.4. 品質機能展開		テキスト「OUTLINE OF TOTAL QUALITY CONTROL IN JAPAN」（配布）	1時間	古河電気工業㈱ 関口	OHP
3. 質疑応答	質問は出なかった。		なし	0分 計 2時間	—	—

表Ⅳ－2　技術セミナー実施計画書（ガーナ）

講義内容	概　　要	認証検査制度、工業標準化等の状況	（配布）資料	時間配分	担当者	使用機器
1. JIS FOR YOU	Audio Visual によるJISの紹介	ガーナ（帰国研修員カントリーレポート及び ISO 資料による）：政府機関であるGhana Standards Board（GSB）が中心となって標準化を推進している。GSBの職員数は約200名。政府予算が95%以上となっている。約300種の規格が制定され、その実施は強制されている。 問題点としては、中小企業における標準化等の分野における技術者不足、企業側に品質改善のインセンティブが働かない売手市場、外貨不足の為の設備更新困難等の理由により、標準化、品質管理の普及が困難であることが挙げられる。	16㎜フィルム「JIS FOR YOU」（非配布）	30分	(財)日本規格協会 吉永	16㎜映写機
2. 日本における工業標準化と品質管理	2.1. 工業標準化活動 2.2. 品質管理活動 2.3. その他		・テキスト「INDUSTRIAL STANDARDIZATION IN JAPAN」（配布） ・テキスト「Japan's experience in standardization and quality control」（配布）	1時間	〃	OHP
3. 日本におけるTQCの現状	3.1. TQCコンセプト 3.2. 方針管理 3.3. トップマネジメントによる評価 3.4. 品質機能展開		・テキスト「Outline of Total Quality Control in Japan」（配布）	1時間	古河電気工業㈱ 関口	〃
4. 質疑応答			－	30分 計 3時間	吉永、関口、JICA	－

3. 実　施・成　果

(1) サウディ・アラビア

当国については、帰国研修員並びにその関係者に、日常の通常業務を離れて大局的な面から標準化を考える、又異質の文化圏である日本で広く行なわれ、世界的に注目されている全社的品質管理というユニークなQCを認知する良い機会となったと思われる。参加者の専門知識に厚みを加える点で効果があったと思われる。

(2) ガ　ー　ナ

当国については、帰国研修者とその広範な関係者に対し、彼らが日常、問題意識を持っている、標準化と民間企業におけるQCにつき、日本の最新情報を得る貴重な機会となったと思われる。更に、TV、ラジオ、新聞の取材が加わり、日本の協力の広報効果。例えばTVについては、Ghana Broadcasting Corporation(GSB)が取材を行ない、吉永団長と、GSBのDirectorであるDr. Danso(昭和61年度工業標準化・品質管理シニアセミナー参加者)が標準化活動の重要性を訴えた。これが、7月29日セミナー当日の夜9時から5分間程度国営放送にて紹介される等国民への普及効果、GSBのプレゼンスを高める効果ももたらしたと思われる。又、ラジオに関しては、TVと同じくGSBが7月30日朝8時30分より約25分間、国営短波放送にて、吉永団長と上島団員が今回セミナーの経緯、意義等を話す形で報道された。更に新聞については、ガーナの「Peoples Daily Graphic」が取材を行なった。その記事はV. 8に示す。

この新聞記事においては、JICA主催のセミナーにて各界からの参加者があったこと、吉永団長と関口団員の講義概要、及びGSB Directorの Dr. Dansoの啓蒙的発言が記されている。(記事全訳はV. 8参照)

V 参 考 資 料

1. Questionnaire

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
P. O. BOX 216 MITSUI BLDG
2-1, NISHI-SHINJUKU, SHINJUKU-KU TOKYO
160 JAPAN

Date: June 17th, 1987

Dear Sir,

I am writing you with the hope that you are actively engaged in your work in excellent health and in high spirits since you returned to your country after participating in Japan International Cooperation Agency(JICA)'s training course/seminar.

It is a pleasure for me to inform you that JICA is doing utmost efforts to expand and improve its technical training programs year after year. We have accepted a total of some 60,000 participants from developing countries during the period of 1954-1986. In Japanese fiscal year 1987(April 1987-March 1988), we plan to accept about 4,600 participants and conduct 230 group training courses/seminars.

In programing training courses/seminars, we endeavour to place emphasis not only on increasing the number of participants to meet the augmenting requests from developing countries but also on improving the quality of training programs/seminars.

For this purpose we would like to know how and to what extent the ex-participants in our traing courses/seminars are making use of knowledge and technology they have acquired in Japan and to hear what suggestion and recommendation they have for the improvement of our courses/seminars.

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
P.O.BOX 216 MITSUI BLDG
2-1, NISHI-SHINJUKU, SHINJUKU-KU TOKYO
160 JAPAN

It is also important to brush-up and up-grade what you have learnt in Japan. Therefore, JICA dispatches a technical follow-up team to participating countries every year to provide you with information on latest developments in your field.

This year JICA decided to sent to your country a follow-up team in the field of your expertise. Details of the team, its schedule and the questionnaire are enclosed herewith (Appendix 1-5).

We would be grateful if you could extend your kind cooperation to our visiting team during its stay in your country.

We are looking forward to seeing you.

Yours faithfully,

for Kazuo Okabe
Director
Training Affairs Department
Japan International Cooperation Agency

Appendix 1

FOLLOW-UP TEAM FOR EX-PARTICIPANTS OF GROUP TRAINING COURSE IN CERTIFICATION SYSTEMS AND GROUP TRAINING COURSE IN INDUSTRIAL STANDARDIZATION AND QUALITY CONTROL AND SENIOR SEMINAR IN INDUSTRIAL STANDARDIZATION AND QUALITY CONTROL

1.Objective

The Follow-up Team is to visit ex-participants' organizations and related organs for the purpose of:

1) offering guidance through consultation
2) evaluating the results of training/seminar in Japan
3) grasping status-quo and needs in participants' countries.

By doing these,our team is expected to contribute for the improvement of JICA courses/seminars.

2.Members

1)Mr.Masanori YOSHINAGA	Senior Technical Consultant, Japanese Standards Association (JSA)
2)Mr.Masaru SEKIGUCHI	Manager, Central Quality Committee, Furukawa Electric Co.,Ltd.
3)Mr.Atsushi KAMISHIMA	Staff, Third Training Div., Training Affairs Dept., Japan International Cooperation Agency (JICA)

3.Period

1) Saudi Arabia July 18th to July 25th,1987

2) Ghana July 25th to July 31th,1987

4.Cooperation Requested to You

4.1.Visit to your organization

We would like to visit your organization as shown in appendix 2. We would appreciate it very much if you arrange our visit.And if you were other organization's ex-participants except Saudi Arabian Standards Organization (SASO) or Ghana Standards Board (GSB),we would like to see you at SASO on July 20th or GSB on July 28th. Because we would like to grasp common problem among different organization's participants effectively.

4.2.Questionnaire

We would like to request you to fill the questionnaire which is enclosed (Appendix 5) and also send it back to the following place so that your answer may reach the follow-up team before its arrival.

1) Saudi Arabia

JICA Saudi Arabia Office

c/o Embassy of Japan, P.O. Box 4095, Riyadh,11491

Tel:(01) 488-2212

2) Ghana

JICA Ghana Office

P.O. Box 6402,Accra-North

Tel:775265

4.3.Technical Seminar on Industrial Standardization and Quality Control

A technical seminar will be held as follows;

1) Saudi Arabia

Date: July 22nd,1987

Place: in Riyadh (The detailed information will be announced by JICA office shortly)

2) Ghana

Date: July 29th,1987

Place: in Accra (The detailed information will be announced by JICA office shortly)

Program of the seminar is as follows;

1) Greetings
2) Explanation on JICA's technical cooperation
3) Slide "Guide to JICA"
4) Mr.YOSHINAGA's Lecture "Outline of Industrial Standardization and Quality Control in Japan"
5) Video(or 16mm film) "JIS (Japanese Industrial Standards) for You"
6) Mr.SEKIGUCHI's Lecture "Outline of Total Quality Control in Japan
7) Questions and Answers
8) Closing Address
9) Cocktail

The lecturers,Messrs.YOSHINAGA and SEKIGUCHI's curriculum vitae are attached in Appendix 3 and 4.

We would like to invite you to the seminar. And others who are interested are also welcome.So please inform your colleagues.

Appendix 2 TENTATIVE SCHEDULE

July 18 (Sat) Arrival at Riyadh (SV 201)

19 (Sun) Visit to Japanese Embassy and JICA Office

20 (Mon) Visit to Saudi Arabia Standards Organization

A.M.: Discussion with SASO's and other organizations' ex-participants,

P.M.: Discussion with SASO's superiors

21 (Tue) A.M.: Visit to Ministry of Commerce (Discussion with the superiors)

P.M.: Visit to Ministry of Industry (Discussion with the superiors)

22 (Wed) Technical Seminar on Industrial Standardization and Quality Control

23 (Thu) Report to Japanese Embassy and JICA Office

24 (Fri) Data Analysis

25 (Sat) Departure from Riyadh (SV 447), Arrival at Accra (ET 961)

26 (Sun) Preparatory Work

27 (Mon) Visit to Japanese Embassy and JICA Office

28 (Tue) A.M.: Visit to Ghana Standardization Board (Discussion with GSB's and other organizations' ex-participants and GSB's superiors)

P.M.: Visit to Management Development and Productivity Institute and Visit to National Industrial Company Ltd (Discussion with the superiors)

29 (Wed) Technical Seminar on Industrial Standardization and Quality Control

30 (Thu) Report to Japanese Embassy and JICA Office

31 (Fri) Departure from Accra (KL 590)

Appendix 3

RESUME

MASANORI YOSHINAGA

Address: C/O Japanese Standards Association
1-24, Akasaka 4-chome, Minato-ku, Tokyo,
107 Japan

Education:

1945 - Bachelor of Engineering (Mechanical Engineering), Tokyo Institute of Technology

1947 - Completed advanced course on precision machinery, Tokyo Institute of Technology

Experience:

1947-1967 - Ministry of International Trade and Industry
(Last position; Director of Machinery Standards division, Standards department, Agency of Industrial Science and Technology)

1967-1984 - Japanese Standards Association
(Last position; Director)

1984- - Japanese Standards Asociation
Senior technical consultant

Books:

Company Standards, coauthorship, Japanese Standards Association

Guide to Quality Control and Company Standardization, coauthorship, Japanese Standards Association

Qualifications:

1969 - Registered as an official technical consultant in production control by Science and Technology Agency, Prime Minister's Office

Appendix 4

PERSONAL HISTORY

June 1987

1. Name: MASARU SEKIGUCHI

2. Date of birth: December 4, 1928

3. Place of employment: Eiko Development Co. and
The Furukawa Electric Co.

4. Where to contact: 6-1, Marunouchi 2-chome, Chiyoda-ku,
Tokyo 100, Japan
(Tel: 03-286-3554)

5. University completed and year of graduation:
Kyoto University, Post graduate course,
Technology Department, Master's Course.
Graduated March 1958.

6. Majors & Degrees: Majored in fuel chemistry,
Master of Technology

7. Professional career:

Apr. 1, 1954	Entered The Furukawa Electric Co.
Mar. - Sept. 1973	Dispatched to Supreme Cable Manufacturing Corp., P.T. Indonesia Cable Factory Manager
Sept. 20, 1973	Assistant to General Manager of Insulated Wires & Cables Division Manager, Quality Control
Feb. 1, 1976	Concurrently Manager in charge of Central Quality Committee

Apr. 1, 1980	Assistant to General Manager of Patents and Licensing Division
	Manager, Quality Control
	Manager in charge of Central Quality Committee
Mr. 16, 1986 to present	Eiko Development Co., General Manager of QC Service Department
	Concurrently Manager, Quality Control, Patents and Licensing Division, and Manager in charge of Central Quality Committee, The Furukawa Electric Co.

8. Experience of providing guidance on standardization and quality control:

(1) Quality control education for newly employed university graduates (every year)

(2) Guidance for acquisition of JIS marking approval at six factories of Furukawa Electric and two factories of related companies (approved)

(3) Guidance for award of the factory excellently practising industrial standardization (awarded one factory)

(4) Guidance on intra-company cross QC audit

(5) Guidance on quality control at related companies (six cases at five companies)

(6) QC education at related companies (total six times at two companies)

(7) Education on quality control and standardization for foreign study mission and seminar

(i) Pertaining to Total Quality Control

(a) Wayerhauser Paper Co. (U.S.) Study Mission

"An Introduction to TQC (Total Quality Control)," November 1986

(b) Korean Industrial Standards Association, "QC Seminar - Course for Top Management and Course for Department and Section Managers" (in Seoul)

"Cases of TQC promotion," December 1986

(c) Same as above, March 1987

(d) Furukawa Industrial S.A. Produtos Elétricos (Brazil) Study Mission

"An Introduction to TQC," January 1987

(e) Japan Cooperation Center for Petroleum Industry Development CCCP-PEMEX Seminer, Joint Study; Phase II

"An Introduction to TQC," April 1987

(f) Wayerhouser Paper Co. (U.S.) Study Mission

"An Introduction to TQC," June 1987

(ii) Pertaining to Company Standardization and Quality Control

(a) Chinese National Standards Bureau (China) Study Mission, October 1984

(b) The 18th Group Training Course in "Industrial Standardization," May 1985

(c) The 19th Group Training Course in "Industrial Standardization," August 1986

(d) The Department of Economy (Taiwan, the Republic of China) Study Mission, September 1986

(e) The 1st Group Training Senior Seminar in "Industrial Standardization and Quality Control," December 1986

(f) The 8th Group Training Course in "Certification System," January 1987

Appendix 5

QUESTIONNAIRE

(Please type or fill in block letters)

1.Generals

1.1.Full name(Please underline family name):

Mr. Mrs. Miss _____

1.2.Date of birth: Month Date Year 19 Age: _____

1.3.Course name you participated in (Please circle the number) :

1. Group Training Course in Certification Systems
2. Groupe Training Course in Industrial Standardization and Quality Control
3. Senior Seminar in Industrial Standardization and Quality Control

1.4.Year of participation: 19 _____

1.5.Office and position:

(1) At present

Office : _____

Position: _____

_____

_____

Addess: _____

_____

_____

Telephon: _____

(2) At the time of your participation in the course/seminar:

Office: _____

Position: _____

_____

_____

1.6.Please draw an organizational chart illustrating the relation between the ministry concerned and your organization.

1.7.Did you change your job after going back to your country?

-Yes.

-No.

If yes, how many times? _____times

Please fill out the following.

	Name of organization	Position
1)	_____	_____
	_____	_____
2)	_____	_____
	_____	_____
3)	_____	_____
	_____	_____

2.Your experience in relation to your training/seminar in Japan

Please answer the applicable questions.

2.1.Which subject of the training/seminar is the most useful at present?

2.2.What recommendations did you make to your superiors or colleagues as a result of your experience in Japan?

2.3.Please state how you have tried to apply what you have learnt to your job.

2.4.Was your application of what you learnt in Japan successful or not?

- Yes.
- No.
- Reason of answer.

3.Proposals for the improvement of the course/seminar

3.1.Duration

3.2.Program

3.3.Methodology

3.4.Qualification of participants

3.5.Others

4.Follow-up activities for ex-participants

4.1.Do you have any special requests concerning the exchange of technical information?

4.2.Do you have any hope to participate in other course?

2. 技術セミナーテキスト

(1) 吉 永 団 長 分

(a)

Japan's experience in standardization and quality control

Foreword

I would like to speak about some points of standardization and quality control which have been developed in the course of Japan's industrialization.

As you know, the activities in the field of standardization and quality control have various aspects, and I am going to refer to the following three particular points:

First : unification of measuring standards at national level

Second : development and implementation of product standards at national level as an effective measure for rationalization of industry

Last : quality control activity promoted under the conformity certification system.

1. Unification of national measurement standards

(1) At the early stage of industrialization in Japan, various kinds of manufacturing equipment and technical knowledge were introduced from foreign countries. Together with those things, Japan was forced to accept foreign measurement standards, that is, the metric system from such countries as Germany, Switzerland and France, and foot-pound system from the UK and USA.

At that time, Japanese traditional units of measurement were still commonly used.

As a result, the three measurement systems were being used at the same time for a long time, not only in the industry sector but also in people's daily life, and the situation was such that considerable disorder and inconvenience were brought about in the Japanese economy and industry.

(2) Roughly speaking, we can say that standardization is an activity to change a disorderly situation into an orderly one by developing and implementing standards.

(3) The Japanese government tried to improve such a disordered situation by adopting the metric system as the unified and compulsory standards to be used for measurement.
Its unification, however, was not easy to realize; because the unification of measurement systems was closely connected with various fields of the people's life.

(4) During the War, the movement of the unification was inactive.

(5) After the World War II, discussion on unifying the three systems again arose strongly and, in 1951, the measurement law was newly established and it was prescribed that after a certain period of transition, units of measurement other than metric one should not be used.

(6) In 1958, the unification of measurement systems realized with the exception of some special cases in which rewriting of the registration lists of land and buildings was concerned, whose procedures all completed in 1966 as planned.

2. Industrial standardization

(1) In the first and second decades of the 20th century, industrialized countries such as the United Kingdom, France, Germany and the United States of America organized standardization bodies and launched the development of industrial standards.

(2) After receiving such information and studying the necessity of industrial standardization, the Japanese government set up a standardization committee in order to unify the purchasing specifications which were individually issued by departments of the national or local government offices, and the development of the Japanese Engineering Standards was started at national level.
The main objective of standardization was to resolve the

inconvenience which was brought about in many manufacturing enterprises who were supplying their goods to the government offices.

(3) In Western countries, the standardization was conducted under the leadership of the private sector such as industry association and engineering society, on the basis of their understanding of the necessity to standardize terminology, product rating, test methods and so forth. On the other hand, in Japan, the activity was conducted under the leadership of the government, and its main objective was to unify the purchasing specifications issued by the government offices.

(4) With regard to the implementation of the established standards, the Japanese Engineering Standards, it was recommended that the governmental and public offices should, as far as possible, adopt the standards concerned with their work in their purchasing specification when they procured necessary goods from industries.

(5) In accordance with the recommendation mentioned above, the Japanese Engineering Standards were well known, in particular, among the engineers who were concerned with government procurement and those who were members of the national standards committee, but the benefits of industrial standardization was not widely popularized among the public.

(6) As was mentioned above, the three kinds of measurement systems were used in Japan and the situation was a serious factor to impede the promotion of standardization of products. The Japanese Engineering Standards, however, were not governmental regulations and their implementation was promoted on the voluntary basis. Because of its voluntary nature, adoption of the metric system as the unique measurement system to be used in the Japanese Engineering Standards met with less resistance and found its way easily, and the policy was very much effective for the purpose of promoting adoption of Metric units in industrial sector.

(7) When the Japanese exportation reopened after the World War II, the Japanese government should develop export standards immediately so as not to be given again the bad reputation of the quality being low and

price cheap, and the standardization was conducted mainly for the purpose of upgrading export goods quality. The export standards were established by the government, and export inspection was conducted according to these standards, in which case, the product-quality specified in export standards was set at a higher level than that of the domestic use.

(8) The discussion on importance of industrial standardization arose again at the time when reconstruction of devastated industry was about to begin, and the Industrial Standardization Law was established in 1949. In this law, in order to promote the implementation of the Japanese Industrial Standards on a nation-wide scale and to enhance the level of product-quality, a conformity certification system, that is, the JIS Marking System was provided.

(9) This system has played an important role of introducing quality control into Japanese industry, because the factories wanting to obtain the government approval of JIS Marking are required to execute an adequate quality control programme and maintain the quality of products that conform to the requirements of Japanese Industrial Standards.

3. Quality Control

(1) After the World War II, statistical methods of quality control were introduced to Japanese engineers mainly through the U.S., USA forces which occupied the country and by some American experts on quality control, including Dr. W.E. Deming. Books on quality control, including ASA standards on Quality Control Charts were also introduced to the industry from the U.S.A.

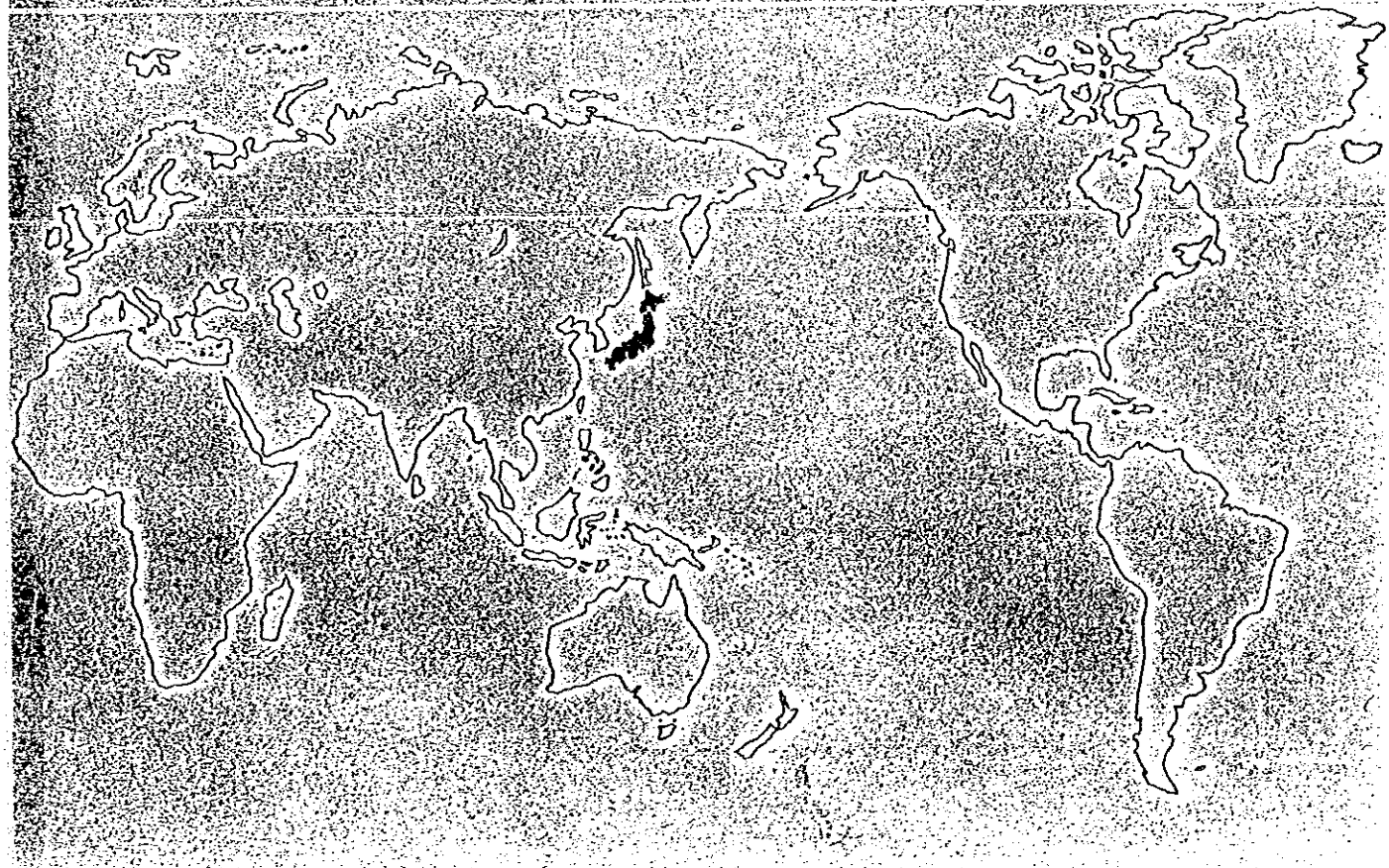
(2) The implementation of quality control within factories was provided in the Industrial Standardization Law as an important item of factory assessment conducted by government inspectors, together with other items, such as company standards, production and inspection facilities, and other production conditions, which are mainly

concerned with the maintenance of product quality.
With respect to the activity of quality control, there has been some change as mentioned below.
At the first stage : It was understood that the activity of quality control was to apply some statistical methods such as quality control charts and sampling inspection tables to the production and inspection work, and such application was tried by production engineering staff and/or engineering staff of inspection departments.
At the second stage : Dr. J.M. Juran gave a series of lectures to Japanese engineers and factory managers; he emphasized that quality control was an integral part of management and its activity must be concerned with every phase of management. Such concept of quality control was popularized as total quality control. During the application process of the new concept of quality control, the concept was modified so as to fit into the Japanese management way which had been built on the basis of Japanese circumstances, and the Japanese concept of total quality control yielded the activity of Quality Control Circles. In the Japanese TQC, it is emphasized that, all people ranging from the top management to floor and clerical workers, and from R & D department to sales department and general business department - and, if necessary, to subcontractors and suppliers of materials and equipment - must participate in achieving the objectives of the total quality control activity of the company.

July, 1987
Masanori Yoshinaga
Senior Technical Consultant
Japanese Standards
Association.

(b)

INDUSTRIAL STANDARDIZATION IN JAPAN 1987



Japanese Industrial Standards Committee

CONTENTS

1. Outlook of industrial standardization in Japan

1.1 JIS as national voluntary standards

In Japan, industrial standardization is promoted at national, industrial association (group), and company levels. JIS (Japanese Industrial Standards) are national voluntary standards for industrial and mineral products. Various industrial associations also establish voluntary association standards for their specific needs. Many companies have a set of company standards (operation manuals, etc.), some of them adopted from JIS and/or industrial association standards. Roughly speaking, necessity of common practice in the companies of the same industrial sector will lead to industrial association standards, and the same kind of necessity with wider application will prompt establishment of JIS.

As one of the means to promote industrial standardization, JIS marking system is in operation. JIS marking system is a voluntary certification system. Some 1,050 products with JIS are designated for JIS marking. Factories producing JIS satisfying products will be permitted to affix JIS mark on their products if their company standards and practices of quality control are judged by the relevant Minister to guarantee continuous production of JIS satisfying products.

The aims of JIS and JIS marking system are to improve quality of products, rationalize production, ensure fair and simplified trade etc. through the establishment and popularization of appropriate and rational standards. Some 8,100 JIS are established for these purposes, and some 16,000 factories are permitted (or approved in the case of foreign factories) to affix JIS mark on their products.

1.2 Internationalization of JIS

Standards and certification systems may have important adverse effects on external trade when they are different between countries. These concern has become one of the central issues of international trade especially since 1970's. First concrete international result is the GATT Standards Code (Agreement on Technical Barriers to Trade). Japan ratified this Code in 1980, and has been promoting harmonization of domestic standards with international standards. Also, JISC (Japanese Industrial Standards Committee---JIS deliberation organ) is participating in ISO (International Organization for Standardization) and IEC (International Electrotechnical Commission), two major organs for international standardization, since 1952 and 1953 respectively.

By ratifying GATT Standards Code, JIS marking system is modified to make it possible for foreign factories to get approval on equal basis with domestic factories, and the efforts to harmonize JIS with corresponding international standards are further promoted.

In 1985, the Government decided to internationalize Japan's economy and society (Action Program for Improved Market Access) to maintain free trade system. One of the important area of the Action Program is related to standards and certification. The Action Program includes to secure transparency of standards making process, and to utilize foreign generated test

data as much as possible under certification systems. To further facilitate exports to Japan, and also following the Long Range Plan of Standardization, JIS marking system is decided to use foreign test data for its approval of foreign factories.

1.3 Future Activities of JIS

In 1985, the 6th Long Range Plan of Industrial Standardization was established. The Plan stresses the importance of internationalization of JIS and JIS marking system, and appropriate standardization in newly developing technologies and information technology among other things. The Plan also stresses the roles of standards both for industrial and technological infrastructure, and for improvement of the quality of life, and importance of international standardization.

Coinciding with these efforts for internationalization, the 13th General Assembly of ISO held in Tokyo unanimously elected Mr. Isamu Yamashita for the 14th President. It is for the first time for a Japanese to be elected President of ISO.

1.4 History of JIS

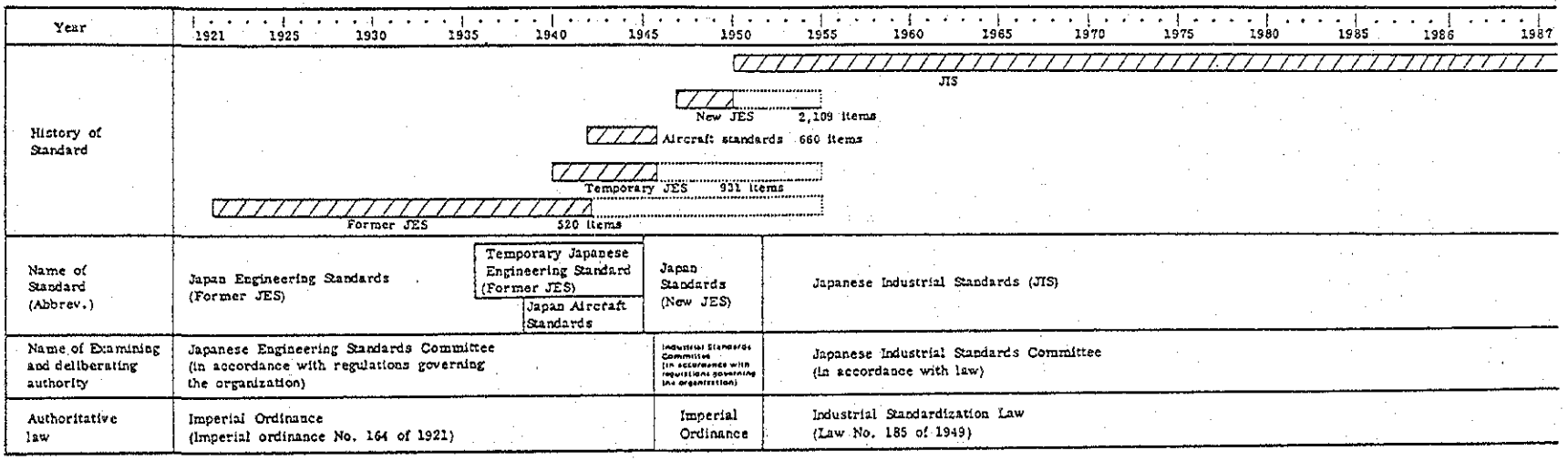
In Japan, industrial standardization started rather late compared with European countries. It started from procurement specifications of Government owned factories in Meiji era. Examples are standards for the procurement of commodities by the army and navy during the Meiji Era (1868 - 1912), and standards specification for steel water pipes at the beginning of the Taisho era (1912 - 1926). In 1921, the Japanese Engineering Standards Committee (predecessor of JISC) was founded and this committee established 520 JES (Japanese Engineering Standards) by April, 1941. During the World War II (1939 - 1945) the Committee established 931 T-JES (Temporary JES) with simplified contents and procedures. Also, during the War, 660 Japanese Aircraft Standards were established under the Aircraft Manufacturing Service Law.

After the WW II, the Industrial Standards Committee was formulated to study and revise JES and T-JES, and to establish new standards. This committee established some 2,100 New-JES between 1946 and 1949. In 1949, the Industrial Standardization Law was promulgated and the JISC (Japanese Industrial Standards Committee) was established as an organ to deliberate JIS. Since 1949, JISC has deliberated on JIS, and with JISC opinions, the relevant Ministers of the Government have established, revised, and annuled JIS. As a result, the total number of JIS in force is 8,110 at the end of March, 1987.

1.5 JIS and technical regulations

Although JIS occupies the major part in national standards on industrial and mineral products, some 30 or so Laws establish technical regulations for protecting human life, health, environment, etc. Most of them are mandatory regulations such as technical regulations for electronic appliances under the Electronic Appliance Law. Under the Industrial Standardization Law, these technical regulations must esteem JIS when they are established.

Figure 1. History of Japanese Industrial Standards



Secretariat

1922-1925: Engineering Bureau of Agriculture and Commerce Ministry

1925-1930: Engineering Bureau of Commerce and Industry Ministry

1930-1937: Temporary Industry Rationalization Bureau of Commerce and Industry Ministry

1937-1939: Control Bureau of Commerce and Industry Ministry

1939-1942: General Affairs Bureau of Commerce and Industry Ministry

1942-1945: Agency of Technology

1945-1948: Patent and Standards Bureau

1948-1952: Industrial Technology Board

1952-Present: Agency of Industrial Science and Technology

Period during which standards were being established

Period during which standards were being maintained

2. J I S

2.1 Coverage and Items for standardization

JIS covers industrial and mineral products with the exception of (1) medicines, (2) agricultural chemicals, (3) chemical fertilizers, (4) silk yarn, and (5) foodstuffs and agricultural and forest products designated under the Law concerning standardization and proper labelling of agricultural and forestry products.

The items for standardization are

(1) Category, type, form, dimension, structure, equipment, quality, grade, component, performance, durability, or safety of industrial and mineral products

(2) Methods of manufacturing, methods of designing, methods of drawing, methods of using, or per unit material requirement of industrial and mineral products, or methods of operation of safety condition of production

(3) Category, form, dimension, structure, performance or grade, or method of packaging of industrial and mineral products

(4) Methods of testing, analyzing, appraising, inspecting, vertifying, or measuring of industrial and mineral products

(5) Terms, abbreviations, symbols, marks, preferred numbers, or units related to industrial and mineral technologies

(6) Designs, methods of execution, or safety conditions of buildings and other structures

Those JIS established have the following symbols.

For example: JIS .C 7501

The alphabet shows the technology area (JIS Division), and the 4 digit number is added to put the JIS in appropriate place in the JIS Division (Please see the explanation of the LIST of JIS).

Letter symbols and JIS Division are shown below.

Letter Symbol	Division	Letter Symbol	Division
A	Civil Engineering and Architecture	H	Mining
B	Mechanical Engineering	P	Pulp and Paper
C	Electrical Engineering	R	Ceramics
D	Automotive Engineering	S	Domestic Wares
E	Railway Engineering	T	Medical Equipment and Safety Appliances
F	Shipbuilding	W	Aircraft and Aviation
G	Ferrous Materials and Metallurgy	X	Information
H	Non-ferrous Metals and Metallurgy	Z	Basic Items and Miscellaneous (incl. Packaging Welding and Radioactivity)
L	Textile Engineering		

Table 1. Japanese Industrial Standards Committee

Japanese Industrial Standards Committee (JISC)

General Meeting

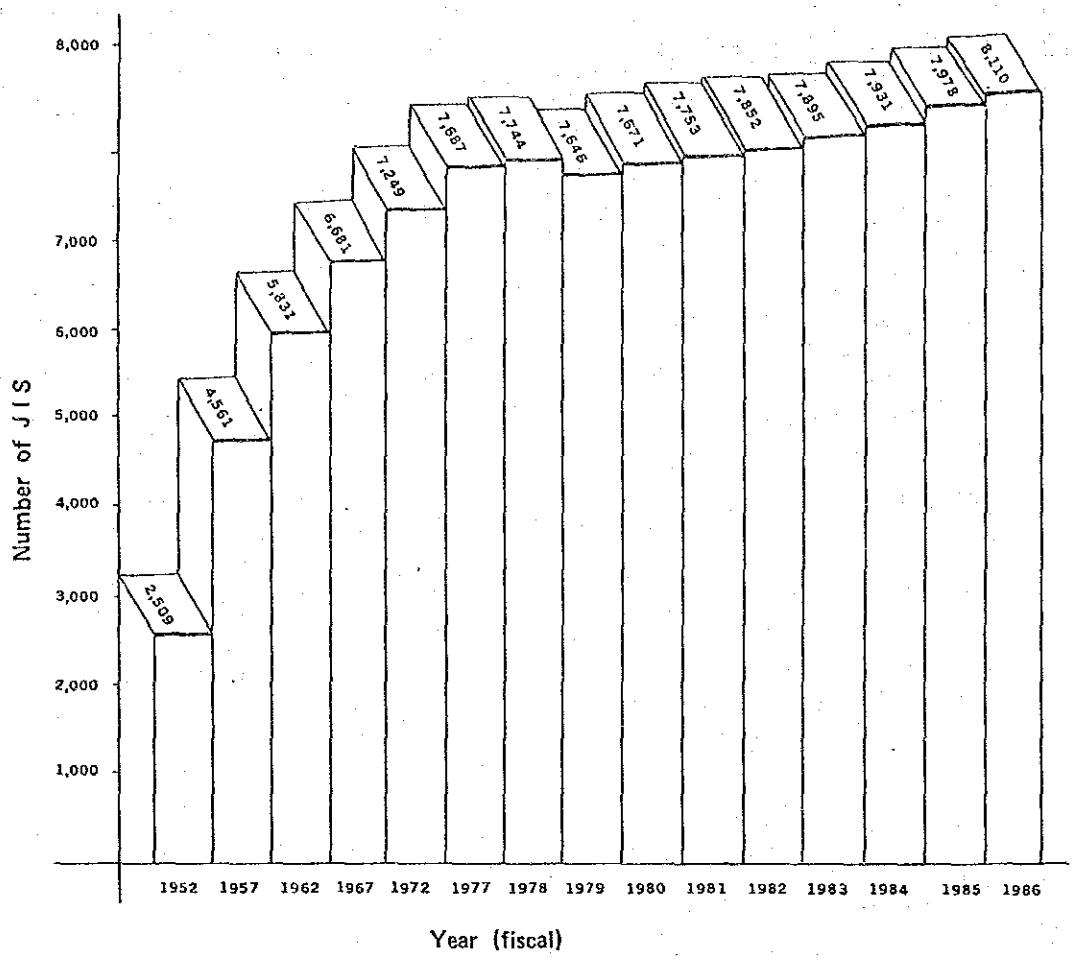
Standards Council

(Jan., 1987)

Divisional Councils on:	Numbers of Technical Committee
ISO	5
IEC	0
Architecture	28
Civil Engineering	18
Iron and Steel	27
Non-ferrous Metals	18
Welding	26
Natural Resources and Energy	26
Basic Items	28
Chemical Analysis	14
Chemical Products	25
High Moleculars	49
Textiles	44
Ceramics	26
Daily Necessities	59
Machine Elements	85
Precision Machinery	35
General Machinery	57
Machine Tools	22
Aircrafts and Automobiles	33
Railway and Rolling Stocks	18
Shipbuilding	41
Distribution of Goods	23
Electricity	122
Household Electrical Appliances	46
Electronics	56
Information Processing	25
Medical and Safety Facilities	36
Atomic Energy	15
(29)	(1007)

JIS may be classified by their nature into three categories; products standards, working methods standards, and basic standards. Roughly speaking some 5,000 products standards, 2,000 working methods standards, and 1,000 basic standards.

Figure 2. Growth of JIS Standards



2.2 Development of JIS

As JIS are voluntary standards, it is essential to get consensus of those interested parties, manufacturers, users or consumers, and academic people as much as possible for their effective application. At the same time, resources available for the activities are limited, and standards establishment needs time. So, every five year, JISC formulates Long Range Plan on the Direction of Industrial Standardization. Every year, requests for the establishment of JIS from various parties are selected and their draftings are is usually entrusted to the most relevant industrial associations or academic societies. When lots of studies and researches are needed before actual drafting, studies and researches are entrusted to relevant private research institutes or affiliated institutes of the Agency of Industrial Science and Technology (Please see the items of research and study in Table 3). After the drafting is completed, the draft is submitted by the relevant Minister to the JISC. JISC modifies the draft JIS, if necessary, and returns the draft to the Minister for the establishment as JIS. The Minister announces in the Government Gazette, when he thinks the draft reflects the opinions of all the parties with substantial interests and is not unduely discriminative, in their application, to any person under the same condition. So, safety measures to get the widest possible consnsus on the JIS are taken. The text itself is published by JSA (Japanese Standards Association---nonprofit foundation established for the popularization of industrial standardization). During this process, foreign participation is encouraged to secure transparency. Besides GATT notification, the schedule from the stage of entrustment of drafting to private industrial associations is notified to overseas by News from MITI, and Tsusho Koho for possible participation of interested foreign people.

Figure 3. Flow Chart of Establishment and Revision of JIS

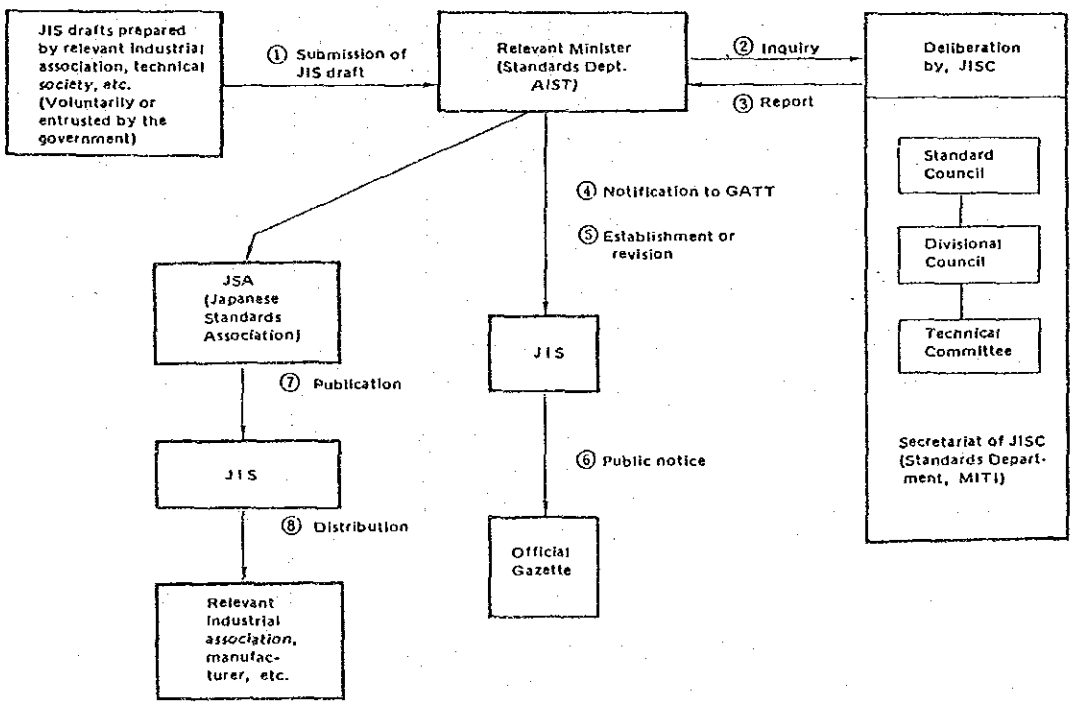


Table 2. Japanese Industrial Standards established, revised and abolished during the Fiscal Year 1986

JIS Divisions	Number of JIS newly established	Number of JIS revised	Number of JIS abolished	JIS in force as of Mar. 31 1987
A Civil Engineering and Architecture	9	23	2	528
B Mechanical Engineering	30	67	19	1,190
C Electrical Engineering	25	41	6	752
D Automotive Engineering	15	15	3	353
E Railway Engineering	2	4	0	223
F Shipbuilding	25	34	0	541
G Ferrous Materials and Metallurgy	3	22	3	312
H Non-Ferrous Metals and Metallurgy	5	6	1	351
K Chemical Engineering	25	41	0	1,616
L Textile Engineering	5	5	8	296
M Mining	1	4	2	235
P Pulp and Paper	0	0	0	102
R Ceramics	3	13	1	231
S Domestic Wares	2	8	3	268
T Medical Equipment and Safety Appliances	18	18	0	238
W Aircraft and Aviation	6	2	0	97
X Information	5	0	0	102
Z Fundamental and General Packaging Welding Radioactivity	14	41	13	675
Total:	193	344	61	8,110

Table 3. Studies and Researches for Industrial Standardization

Special reseaches for standardization by the affiliated organs of the Agency of Industrial Science & Technology.
The following 3 subjects are being researched

Subject to Research	Term
Research on performance evaluation and calibration technic for rotational viscometer	1985 - 1987
Research on fuel consumption test method for automobiles	1984 - 1987
Research on testing method of optical transmission elements	1983 - 1987

Entrusted studies and researches on industrial standardization for drafting standards to non-governmental organizations

Field	Subject to Research	Term
Material Standards	Study for standardization on preventive technology of clacking on concrete	1983 - 1988
	Study for standardization on durability for building materials, etc.	1984 - 1989
	Study for standardization on New Materials	1986 - 1990
	Study for standardization on energy conservation factors of materials and equipments for buildings	1983 - 1988
	Study on standardization of Testing and Evaluation for New Materials used for Electric Generator (Alternating Petroleum)	1986 - 1990

Table 3 (Continued)

Field	Subject to Research	Term
Textile and Chemical Standards	Study for standardization on Fine Ceramics	1983 - 1988
	Study for standardization of Reference Materials	1981 - 1987
	Study on standardization for advanced materials of organic composites and high-performance plastics	1985 - 1991
	Study for standardization on Bio-Engineering (New Project)	1986 - 1990
	Study for standardization on Bio Process (New Project)	1987 - 1992
Machinery Standards Division	Study for standardization on Factory Automation (FA)	1984 - 1990
	Study on standardization for hydraulic apparatus of high-performance which respond to mechatronics	1984 - 1987
	Study on standardization for Computer Aided Design Systems	1985 - 1989
	Study on standardization for Industrial Robots	1986 - 1990
Electrical, Electronic and Information Standards	Study on standardization of optoelectronics products	1981 - 1988
	Study on standardization for medical imaging processing system and medical electric equipments	1985 - 1989
	Study on highly reliable technologies for systems	1982 - 1989
	Study on standardization for interface between different media	1985 - 1989

Field	Subject to Research	Term
Electrical, Electronic and Information Stadards	Study on standardization for system software	1985 - 1989
	Study on standardization for storage media (flexible disk cartridges, optical digital data disks, etc.)	1985 -
	Study on standardization for open system interconnection	1985 -
	Study on standardization for combustion performance of energy-saving type gas domestic appliances	1985 - 1989
	Study on standardization for new generation system (solar photo-voltaic energy, fuel sell, etc.)	1986 - 1990
	Study on reliability for electronic components	1981 - 1989
	Study on standardization for office automation apparatuses	1984 - 1988
	Study on reliability of real time control computer systems in electric power industry (New Project)	1986 - 1990

2.3 Long Range Plan

The Long Range Plan of Industrial Standardization decided at JISC in July, 1985 stipulates the three important tasks of industrial standardization as follows. First, standards to arrange industrial and technological infrastructure. For this purpose, it is important to maintain JIS so far established for matured technologies at apropriate technological level and to establish JIS for new technologies. The role of standards as technology infrastructure of new technologies is to establish JIS for securing interoperability of information equipment, for intercomparison of testing and evaluation of new materials, for interoperability, safety, and reliability of Factory Automation, Robotics, and Mechatronics, for terms, methods of labelling, and test methods of biotechnology.

Second, standards to improve the quality of life. This has been one of the important tasks for industrial standardization, and will continue to be so. With the improvement of the standard of living, demands will become more diversified and sophisticated. Accordingly, it will become more necessary to grasp people's needs accurately. Energy and resource saving and recycling of resources will continue to be important point when we deliberate JIS. Standards duely reflecting the above situation will be needed.

Third, internationalization of standardization activities. That is, to participate actively in the international standardization activities, to secure transparency in the process of the formulation of JIS, and to promote transfer of technology on quality control and standardization to developing countries.

On the promotion of standardization, the following 6 points should be duely taken account of.

(1) As to standardization for new technologies, (i) "pioneering" and flexible standardization, (ii) higher priority on common and basic standards, (iii) appropriate intra-industry deliberation of standards, and (iv) standardization of software are 4 major factors to be taken account of. Sometimes it will be needed to establish standards before the technology is matured, and to revise them quickly. Especially, terminology, symbols, and methods of testing and measurement should be clarified for the evaluation of technologies, and comparability of data, which will be an important infrastructure of efficient research and development and competition. Also, new technologies tend to develop combining various technologies, and the deliberation of standards require various experts not limited to one industrial sector. Standardization of software means standards on softwares of computers, CAD (Computer Aided Design), and CAM (Computer Aided Manufacturing), and of those contributing to efficient trade and transaction such as bar code symbol, and business protocol.

(2) To strength research for standardization. Systematic approach to the needs of users, and international trends is needed to set priorities of standardization and to have a systematic set of standards.

(3) To strengthen the organization for standardization. In national standardization activities private sectors play an important role and most of the work is entrusted to private sectors. Therefore, further encouragement of private sectors for active standardization activities are needed.

(4) To secure consistency and compatibility in the set of all JIS. JIS as a set should have consistency, and should be developed systematically.

(5) To update standards and to popularize standards. More efforts to popularize standards, for example, consulting service, are needed.

(6) To improve JIS marking system. JIS marking system should be more accessible for foreign factories especially because it will help small and medium size companies with no corporate identity to sell in the Japanese market.

2.4 Research on Standardization

One of the recent characteristics of standardization activities is that more and more research is needed before actual drafting to get sufficient data for standards, etc. So, the subjects for research tend to increase. The research is entrusted to private research institutes or to affiliated institutes of AIST. They are listed in Table 3.

2.5 Preparation of Draft JIS

Although any interested people can ask the deliberation of draft JIS at JISC, recent practice is to prepare a draft JIS by the most relevant industrial association or academic society. The association entrusted usually forms a committee consisting of representatives of manufacturers, consumers, and neutral people. On average, it takes about one year to finalize the draft. These drafting committees in private organizations are open to foreigners under certain conditions. Every year, the work plan of drafting is announced in News from MITI. Information about the drafting is also available during the process of drafting.

2.6 Deliberation of Draft JIS

The draft prepared by private associations will be submitted to JISC by the relevant Minister. JISC asks one of its Divisional Council to study it. The Divisional Council, if necessary, further asks the deliberation to one of its Technical Committees. When JISC considers the draft is appropriate and rational, JISC reports so to the relevant Minister. When Minister thinks the draft does not unduely discriminate any interested parties, he decides JIS formally and announces it in the Government Gazette. Before formal announcement, and the Government notifies the intention to GATT observing the GATT Code.

. JISC (President Renzo Taguchi) is an organization attached to the Agency of Industrial Science and Technology, MITI with secretariate service by Standards Department of AIST, and its members are about 8,600 from manufacturers, consumers, and knowledged people.

Organization structure of JISC is the General Assembly (240 members), the Standards Council, 29 Divisional Councils, and 1,007 Technical Committees attached to one of the Divisional Councils. Establishment, Revision, and rescindment of JIS are essentially under the same procedures.

In JISC, like other similar organs, representatives of foreign interests are allowed to join or participate to state their opinions. So, deliberation schedule is also announced in Tsusho Koho. In addition to this, foreign representatives with Japanese nationality are participating in various Divisional Councils and Technical Committees as members.

Table 4. Outline of JISC Works (as of 31 March, 1987)

(General)	Annual budget	Annual budget for 1987:	¥707,523,000
		of which, Due to ISO	¥ 91,680,000
		Due to IEC	¥ 77,188,000
	Staff	Member of JISC:	8,604 persons
		Secretariat:	Standards Dept. 92 persons

(National Standardization)			
	JIS	*8,110 standards (see also Table 2)*	
		established	193 standards
		revised	344 standards
		confirmed	766 standards
		withdrawn	61 standards
			in 1986
	JIS marking system	Designated JIS for marking:	1,047
	Committees	Divisional Councils:	29
		Technical Committees:	1,007
		Committee meetings held in 1986/1987	
		Divisional Council:	91 times (accumulated)
		Technical Committee:	337 times (accumulated)
	Draft assignment	*In 1986:*	225 standards
	Studies & researches	(see Table 3)	

3. JIS Marking System

3.1 Outline

Like many other national voluntary standards systems, JIS system has its accompanying certification system to promote and popularize standardization. Products which are covered by corresponding JIS are designated as JIS marking products when such designation deemed to promote standardization. In concrete terms, to affix JIS mark on the products will be for mutual benefits for manufacturers and consumers/users when it is difficult to know the quality of products especially in such cases as there exists many producers and many users, etc. This marking system is opened to foreign factories since 1980.

Table 5. Designated JIS in each Division (related to MITI) (as of 31 March, 1987)

JIS Divisions		Designated JIS for Marking	
A	(Civil engineering and architecture)	139	
B	(Mechanical engineering)	165	(4)
C	(Electrical engineering)	131	
D	(Automotive engineering)	47	
E	(Railway engineering)	13	
F	(Shipbuilding)	1	
G	(Ferrous material and metallurgy)	55	
H	(Non-ferrous metal and metallurgy)	42	(5)
K	(Chemical engineering)	165	(1)
L	(Textile engineering)	19	
M	(Mining)	16	
P	(Pulp and paper)	13	
R	(Ceramics)	46	
S	(Domestic wares)	128	
T	(Medical equipment and safety appliances)	17	
W	(Aircraft and aviation)	1	
X	(Information)	1	
Z	(Packaging) - Radioactivity - Welding - Fundamental	48	
	Total:	1,047	(10)

Note: Number of designated processing technique is indicated in the parenthesis.

Table 6. Number of Permission or Approval for JIS Marking (as of 31 March, 1987)

Division		Number	
Domestic	Ministry of International Trade and Industry	15,947	16,336
	Ministry of Transport	253	
	Ministry of Health and Welfare	136	
Overseas		69	
Total:		16,405	

3.2 Certification method

The certification system is based on factory assessment of quality control with company standards. The items of assessment are the following.

(1) Production or Processing Facilities
Whether the applying factory has specified equipment for production or processing.

(2) Testing Facilities
Whether the applying factory has specified testing equipments.

(3) Test Methods
Whether the test is performed according to the corresponding JIS and specified measures.

(4) Methods of Quality Control
The quality control is performed by the following methods.

(4-1) Company standards are concretely and systematically established satisfying the specification of the corresponding JIS and individual examination items on (1) quality, test and storage of the product, (2) quality, test and storage of materials for production, (3) control items and control methods of production process, quality characteristics and their testing methods, and working procedures, (4) control of production and testing facilities, (5) control of subcontracts, and (6) user complaints. Also, these company standards are appropriately revised and understood by the employees.

(4-2) *Control of final products*
Whether test and storage of products are appropriately performed based on the company standards.

(4-3) Control of materials
Whether test and storage of materials are appropriately performed based on the company standards.

(4-4) Control of production process

(1) Whether each process of production and testing are properly conducted following the company standards and controlled by the necessary methods.

(2) Whether appropriate counteraction is taken for defection and irregularities.

(3) Whether conditions of working are properly maintained

(4-5) Control of equipment
Whether checking, testing, calibration, maintenance, etc. of the equipment are properly performed according to the company standards, and their accuracy and performance are appropriately maintained.

(4-6) Control subcontract
Whether subcontract is appropriately managed according to the company standards.

(4-7) Complaints
Whether complaints are properly handled according to the company standards, and necessary improvements are taken.

(4-8) Maintenance and utilization of the records
Whether the records on the above mentioned items (4.2 to 4.7) are maintained for and used for promotion of quality control.

(5) Other technical production conditions necessary for quality control

(5.1) Whether standardization and quality control are systematically performed.

(5.2) Whether the factory designates a qualified "quality control promoter".

3.3 Commodities applicable for JIS Marking System

At present, 1,047 products are designated for JIS marking by MITI, 54 by MT, and 16 by MHW, and the number of JIS corresponding to these designation is about 2,000, 162, and 20 respectively. The figures include designated technologies.

3.4 Permission and Approval

As of March, 1987, permissions and approvals has been granted to over 16,000 factories including over 60 foreign factories in more than 10 countries. (see Table 6)

3.5 Supervision of JIS marked products

The relevant Minister reserves the right to inspect JIS permitted or approved) factories when he thinks it necessary.

Systematic measures are (1) examination of the annual report on the state of technical conditions of production by the JIS factories, (2) report of monitoring system, (3) purchase test, and (4) Notification inspection.

The monitoring system (supervisor's system on the improvement of consumer living standards) is established to oversee the quality and marking aspects of consumer goods including JIS marked products. Some 700 housewives are monitors who report to MITI when JIS marked products are deemed to be not in conformity with JIS. If reported, the Minister take necessary action including eventual rescindment of the permission after on-site inspection of the factory.

In addition to the monitoring, market purchase product testing is conducted for certain products.

For illegal marking such as affixing JIS mark on the product without permission, penal servitude not exceeding one year or a fine not exceeding 500,000 yen will be levied.

3.6 Notification Inspection

Since 1980, following the revision of the Industrial Standardization Law, it became possible to utilize private institutes for a kind of follow-up inspection. When the relevant Minister consider it necessary to check the state of quality control, etc. judging from the extent of the revision of the corresponding JIS or state of quality control and other technical condition of production, the Minister can ask JIS approved factories to undergo Notification Inspection. Notification inspection is a check by a designated inspection institute on conformity of products with relevant JIS, maintenance of testing equipments, methods of testing and records preservation of test. JIS approved factories are also obliged to report once a year on the state of their productions and quality control to the relevant Minister.

For your reference, two kinds of JIS mark are illustrated in the below.

Fig. A

Fig. A: The mark to be affixed by the manufacturer of the designated commodities provided in Article 19. of the Industrial Standardization Law, to the designated commodities, their packages, containers or invoices when the manufacturer has obtained permission or approval.

Fig. B

Item of designated processing technique

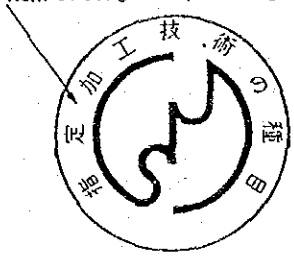


Fig. B: The mark to the affixed by the manufacturer using the designated processing techniques provided in Articles 25. of the Industrial Standardization Law, to the processed commodities, their packages, containers or invoices when the manufacturer has obtained permission or approval.

4. Approval of JIS Marking for Foreign Factories

4.1 Outline of New Scheme

In substance, there exists no difference between foreign factories and domestic factories. However, to make the acquisition of JIS mark easier for foreign factories, it has become possible to use the test data on on-site examination of the applying factory generated by appropriate foreign institutes.

A company which wishes to have an on-site factory examination by inspectors of the Japanese government can of course have such examination as before. In this case, what the company should do, at first, is to submit an application and to pay JPY 160,000 + air fare and accomodation allowance for two inspectors (5 days). Then, the inspectors will be dispatched and conduct on-site factory examination.

Figure 4. Flow Chart on Application through Approval for JIS Marking

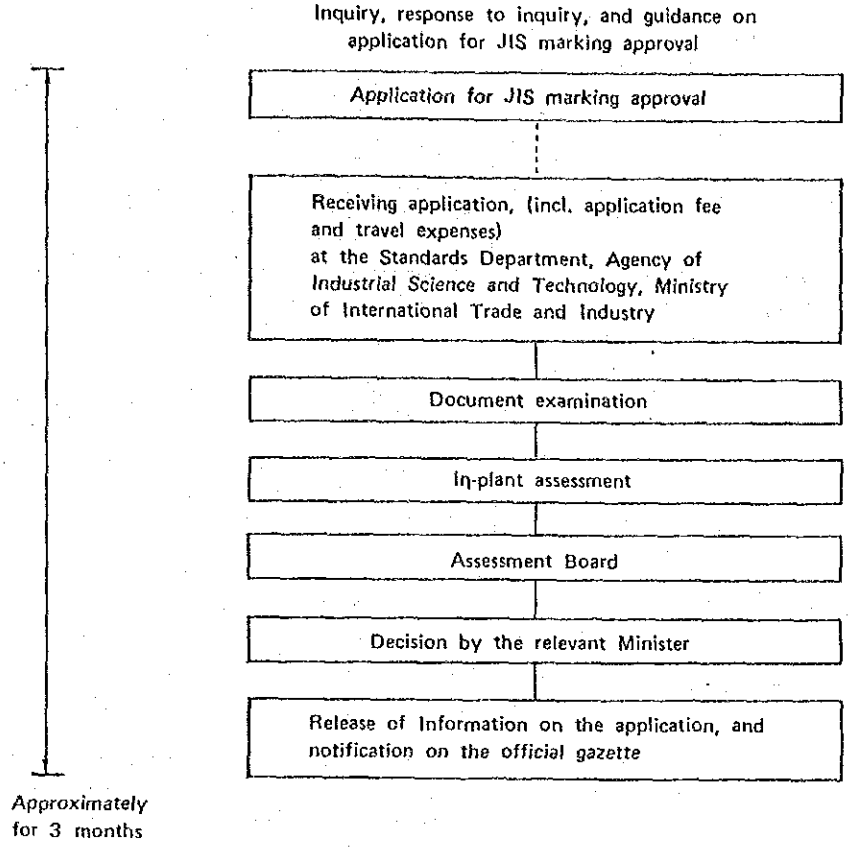


Figure 5. JIS Marking System for Foreign Products

(Note)

A foreign factory seeking JIS marking approval can take either scheme A or B, according to its wish.

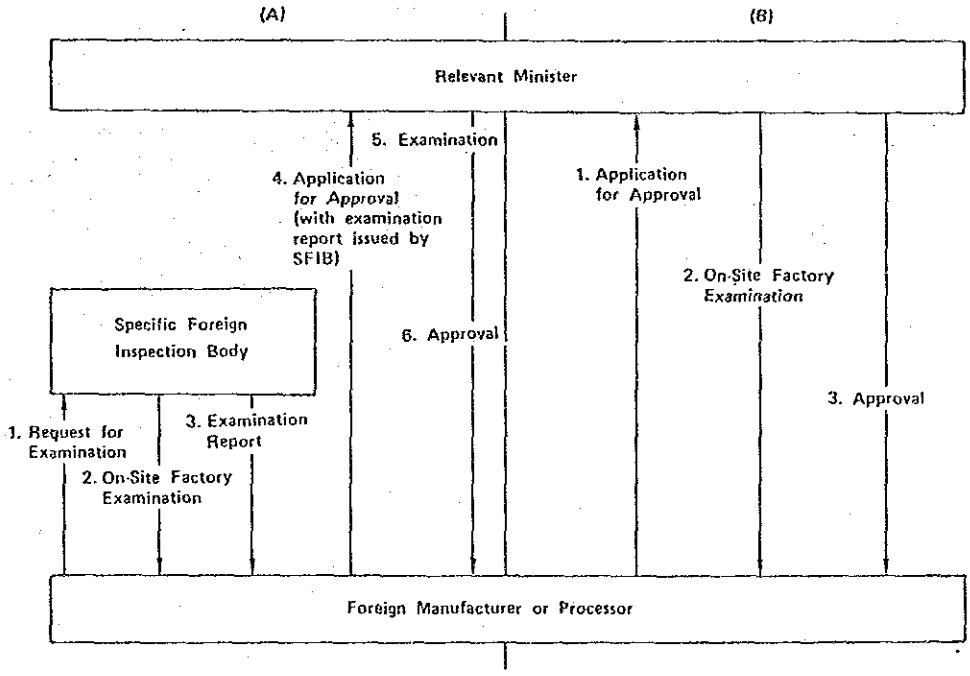


Table 7. Number of JIS Mark Approvals

As of April 1, 1987

JIS Letter Symbol *	A	B	C	F	G	H	K	R	S	T	Z	Total
Singapore			2									2(1)
Republic of Korea		3	2		25		2		1		8	41(22)
Taiwan	4	3	3	1			3			1		15(13)
Malaysia			1					1				2(2)
U.S.A.						2				1		3(3)
Indonesia			1									1(1)
Philippines				1								1(1)
Switzerland										1		1(1)
Australia	1											1(1)
Germany F.R.										2		2(1)
Total	5	6	9	2	25	2	5	1	1	5	8	69(46)

(1) *: Please see page 4 for the Letter Symbol.

(2) Number of Approved Factories is indicated in the parenthesis.

4.2 Specific Foreign Inspection Body

The role of a "Specific Foreign Inspection Body (SFIB)" is to prepare a report as to situation of manufacturing facilities (or processing facilities), testing facilities, methods of testing, methods of quality control and other technical manufacturing conditions (or processing conditions) of an applicant's factory by conducting factory on-site examination, in response to request from a company which seeks to get approval for affixing JIS mark on its products.

To become a SFIB, an inspection body shall submit an application to a relevant Minister according to the attached "Working Guidelines for Acceptance of Foreign Test Data for Application for Marking Approval under the Industrial Standardization Law." The criteria for the designation of an inspection body as a SFIB are shown in the Article 2 of the guideline. In essense, the followings are the requirements:

(1) Technical competence, (2) Sound financial basis, and financial stability (3) Neutrality, impartiality and fairness of inspection service.

An expected role of a SFIB in the JIS marking approval shceme is as follows:

1) When a SFIB is asked to carry out on-site factory examination and to prepare a report on its result by a company which seeks to get JIS marking approval, the SFIB will make a contract with the company as to execution of such examination and issurance of a report.

2) After making a necessary preparation for the on-site factory examination, the SFIB will conduct such examination, and issue an inspection report. One of the inspection reports shall be enclosed and securely sealed for submission to a relevant Minister.

3) The applicant shall make an application to the Minister together with the enclosed and sealed inspection report and shall pay JPY 28,000/item as examination fee.

4) If the Minister thinks the contents of the report is appropriate, and situation and practices of quality control of applicant's factory satisfies the "Matters Investigated and Their Criteria for Permission or Approval Marking Showing Conformation to Japanese Industrial Standards", See 3.2 Certification method for items of assessment, the Minister will issue an approval to the applicant.

Table 8. Approved Manufacturers or Processors

Notation: (According to ISO 3166)
SG: Singapore
KR: Republic of Korea
TW: Taiwan
MY: Malaysia

Approved No. (Approved on)	Name of Approved Factory	Designated Commodity	JIS Number and Title	Grade or Class
SG 8101 (April 1, 1981)	Yokogawa Electric Singapore Pte. Ltd.	Electrical Indicating Instruments	JIS C 1102 Electrical Indicating Instruments	DC Voltmeter ... 0.5 DC Ammeter 0.5, 1.0
KR 8101 (April 22, 1981)	Jin Heung Co., Ltd.	Plugs and Socket-Outlets	JIS C 8303 Plugs and Receptacles for Domestic and Similar General Use	Plugs, Socket-Outlets, Portable Socket-Outlets, Multiple Portable Socket-Outlet
KR 8102 (April 22, 1981)	Jin Heung Co., Ltd.	Small Switches for Indoor Use	JIS C 8304 Small Switches for Indoor Use	Tumbler Switch Push-Button Switch
TW 8101 (April 30, 1981)	Lin-ko 3rd Plant, Plastics Division Nan-ya Plastics Cooperation	Plastic Floor Parts	JIS A 5721 Plastic Floor Parts	—
KR 8103 (June 2, 1981)	Shin Hung Rubber Co., Ltd.	Rubber Pneumatic Tires and Inner Tubes for Bicycles and Motorcycles	JIS K 6302 Rubber Pneumatic Tires for Bicycles JIS K 6304 Rubber Inner Tubes for Bicycles JIS K 6366 Rubber Pneumatic Tires for Motorcycles JIS K 6367 Rubber Inner Tubes for Motorcycles	Rubber Tires for Bicycles Rubber Tires for Hand Carts Rubber Tubes for Bicycles Rubber Tires for Motorcycles Rubber Tubes for Motorcycles
KR 8104 (June 2, 1981)	Hung-a Industrial Co., Ltd.	Rubber Pneumatic Tires and Inner Tubes for Bicycles and Motorcycles	JIS K 6302 Rubber Pneumatic for Bicycles JIS K 6304 Rubber Inner Tubes for Bicycles	Rubber Tires for Bicycles Rubber Tubes for Bicycles
KR 8105 (August 1, 1981)	Hansan Screw Co., Ltd.	Hexagon Socket Screws	JIS B 1177 Hexagon Socket Set Screws	—
KR 8106 (Sept. 30, 1981)	Korea Iron & Steel Works Ltd., Usan Factory	Wire Rope	JIS G 3525 Wire Rope	Type 1, Type 2, Type 3, Type 4, Type 6, Type 10
TW 8203 (Feb. 13, 1982)	Matsushita Electric (Taiwan) Co., Ltd. Electronic Components Production Division	Cone Type Loud Speaker	JIS C 5501 Cone Type Loud Speaker	—
TW 8202 (Feb. 13, 1982)	Matsushita Electric (Taiwan) Co., Ltd. Electronic Components Production Division	Electrolytic Capacitors, Liquid Electrolyte, Aluminum Foil	JIS C 5141 Electrolytic Capacitors, Liquid Electrolytic, Aluminum Foil, for Electronic Equipment	—
MOT 82-1 (*) (May 24, 1982)	Kokosha Rames Corporation	Marine Watertight Cable Glands Electric Appliance	JIS F 8801 Marine Watertight Cable Glands for Electric Appliances	—
TW 8204 (Sept. 27, 1982)	Nan Ya Plastics Corporation	Rigid PVC Corrugated Sheet	JIS A 5702 Rigid PVC Corrugated Sheets	—
TW 8205 (Sept. 27, 1982)	Nan Ya Plastics Corporation	PVC Floor Tiles	JIS A 5705 PVC Floor Tiles	—

Table 8. (Continued)

Approved No. (Approved on)	Name of Approved Factory	Designated Commodity	JIS Number and Title	Grade or Class
TW 8206 (Dec. 16, 1982)	Taiwan Tajima Industrial Co., Ltd.	Textile Measuring Tapes	JIS B 7522 Textile Measuring Tapes	10, 20, 30, 50, 100 m
KR 8207 (Dec. 22, 1982)	Korea Welding Electrode Co., Ltd. Busan Factory	Covered Electrodes for Mild Steel	JIS Z 3211 Covered Electrodes for Mild Steel	D 4301, D 4303, D 4311, D 4313, D 4316, D 4324, D 4327
KR 8208 (Dec. 22, 1982)	Korea Welding Electrode Co., Ltd. Busan Factory	Covered Electrodes for High Tension Strength Steel	JIS Z 3212 Covered Electrodes for High Tension Strength Steel	D 5016, D 5026, D 5816
SG 8302 (March 9, 1983)	Yokogawa Electric Singapore Pte. Ltd.	Insulation Resistance Testers	JIS C 1302 Insulation Resistance Testers (Battery Operated)	Accuracy Class
MY 8301 (April 19, 1983)	*Matsushita Industrial Corp. Sdn. Bhd.*	*Room Air Conditioners*	*JIS C 9612* Room Air Conditioners	*Single Unit* Air-Cooled Condenser 900-3550 kcal/h 4000-9000 kcal/h
KR 8311 (June 13, 1983)	Pusan Steel Pipe Industrial Co., Ltd. Pohang Plant	General Carbon Steel Pipes	JIS G 3452 Carbon Steel Pipes for Ordinary Piping JIS G 3454 Carbon Steel Pipes for Pressure Service	Black Pipe, Galvanized Pipe Class 2, Class 3
KR 8312 (June 13, 1983)	Pusan Steel Pipe Industrial Co., Ltd. Pohang Plant	Carbon Steel Boiler and Heat Exchanger Tubes	JIS G 3461 Carbon Steel Boiler and Heat Exchanger Tubes	Class 3, Class 4
US 8301 (June 16, 1983)	Nibco Inc. Elkhart Plant	Pipe Fittings of Copper and Copper Alloy	JIS H 3401 Pipe Fittings of Copper and Copper Alloy	—
US 8302 (June 16, 1983)	Nibco Inc. La Junta Plant	Pipe Fittings of Copper and Copper Alloy	JIS H 3401 Pipe Fittings of Copper and Copper Alloy	—
KR 8309 (June 17, 1983)	*Samchully Machine Industrial Co., Ltd.*	*Drill Chucks for Machine Tools*	*JIS B 6001* Drill Chuck for Machine Tools	*Ordinary Grade*
KR 8310 (June 17, 1983)	Samchully Machine Industrial Co., Ltd.	Scroll Chucks	JIS B 6151 Scroll Chucks	—
HOT 83-1 (*) (Sept. 19, 1983)	China Electric MFG. Corporation	Ballasts for Fluorescent Lamp for Marine Use	JIS F 8431 Ballasts for Fluorescent Lamp for Machine Use	—
ID 8301 (Oct. 11, 1983)	P.T. Dwindo	Polyester Enameled Copper Wires	JIS C 3210 Polyster Enameled Copper Wires	Class 0 Class 1 Class 2
KR 8413 (April 12, 1984)	Korea Iron & Steel Work, Ltd. Usan Factory	Galvanized Steel Wire Strand	JIS G 3537 Galvanized Steel Wire Strand	No. 1 A No. 2 (a) Extra A, A No. 3 (a) A
TW 8407 (April 23, 1984)	Cheng Shin Rubber Industry Co., Ltd. Main Plant	Tires and Tubes for Bicycles and Motorcycles	*JIS K 6366* Pneumatic Tire for Motorcycles and Scooters JIS K 6367 Rubber Inner Tubes for Motorcycles	—
TW 8408 (April 23, 1984)	Cheng Shin Rubber Industry Co., Ltd. 2nd Plant	Tires and Tubes for Bicycles and Motorcycles	JIS K 6302 Rubber Pneumatic Tires for Bicycles	Rubber Tires for Bicycles and Vehicles

Table 8. (Continued)

Approved No. (Approved on)	Name of Approved Factory	Designated Commodity	JIS Number and Title	Grade or Class
TW 8409 (April 23, 1984)	Cheng Shin Rubber Industry Co., Ltd. 3rd Plant	Tires and Tubes for Bicycles and Motorcycles	JIS K 6302 Rubber Pneumatic Tires for Bicycles	Rubber Inner Tubes for Bicycles
TW 8410 (April 23, 1984)	Cheng Shin Rubber Industry Co., Ltd. Chung-Chuang Plant	Tires and Tubes for Bicycles and Motorcycles	JIS K 6302 Rubber Pneumatic Tires for Bicycles	Rubber Tires for Bicycles
TW 8411 (May 31, 1984)	Matsushita Electric Taiwan Co., Ltd. Home Appliances Production Division	Electric Washing Machine	JIS C 9606 Electric Washing Machine	Electric Washing Machine (Manual Type) Electric Washing Machine (Semi-Automatic Type) Electric Washing Machine (Full-Automatic Type)
KR 8414 (June 5, 1984)	Korea Welding Electrode Co., Ltd. Yangsan Plant	Solid Wires for MAG Welding of Mild Steel and High Strength Steel	JIS Z 3312 Solid Wires for MAG Mild Steel and High Strength Steel	YGW 13, YGW 12, YGW 16
TW 8412 (June 6, 1984)	Hocheng Pottery MFG. Co., Ltd. Brass Fittings Production DEP.	Faucet	JIS B 2061 Faucet	Center-Set Faucet
KR 8415 (June 13, 1984)	Chosun Steel Wire Co., Ltd. Busan Works	Covered Electrodes for Mild Steel	JIS Z 3211 Covered Electrodes for Mild Steel	D 4301, D 4303, D 4311, D 4313, D 4316, D 4324, D 4327
KR 8416 (June 13, 1984)	Chosun Steel Wire Co., Ltd. Busan Works	Covered Electrodes for High Tensile Strength Steel Mild Steel	JIS Z 3212 Covered Electrodes for High Tensile Strength Steel	D 5016, D 5316, D 5816, D 5026
KR 8417 (June 13, 1984)	Chosun Steel Wire Co., Ltd. Busan Works	Solid Wires for MAG Welding of Mild Steel and High Strength Steel	JIS Z 3312 Solid Wires for MAG Welding of Mild Steel and High Strength Steel	YGW 13, YGW 12
KR 8418 (Sept. 18, 1984)	Shin Hung Chemical Corporation	Boots and Shoes (Made of Canvas, Rubber and Synthetic Resin)	JIS S 5002 Canvas Boots and Shoes	Soft Rubber Sole Canvas Boots and Shoes Hard Rubber Sole Canvas Boots and Shoes Sponge Sole Canvas Boots and Shoes.
KR 8419 (Sept. 25, 1984)	Hyundai Pipe Co., Ltd. Ulsan Plant	Carbon Steel Tubes for Structural Purposes	JIS G 3444 Carbon Steel Tubes for General Structural Purposes	1, 2, 3, 4, 5 Class
KR 8420 (Sept. 18, 1984)	Hyundai Pipe Co., Ltd. Ulsan Plant	Carbon Steel Square Pipes	JIS G 3466 Carbon Steel Square Pipes for General Structural Purposes	1 Class, 2 Class
MY 8402 (Dec. 5, 1984)	Malaysian Sheet Glass Bhd.	Safety Glasses for Road Vehicles	JIS R 3211 Safety Glasses for Road Vehicles	Zone Tempered Glass Tempered Safety Glass (4 mm over) Tempered Safety Glass (3.5 mm)
(Nov. 14, 1984)	J.F. Jelenko & Co.	Dental Gold-Silver-Palladium Alloy	JIS T 6106 Dental Casting Gold-Palladium	
(Dec. 1, 1984)	Cendres & Metaux SA	Dental Gold-Silver-Palladium Alloy	JIS T 6106 Dental Casting Gold-Silver-Palladium	
AU 8501 (May 10, 1985)	S.W. Hart & Co., Ltd.	Solar Water Heaters	JIS A 4111 Solar Water Heaters for Dwellings	Natural Connection Type

Table 8. (Continued)

Approved No. (Approved on)	Name of Approved Factory	Designated Commodity	JIS Number and Title	Grade or Class
TW 8513 (June 14, 1985)	Hocheng Pottery MFG. Co., Ltd. Sanitary Ware Production Department	Sanitary Wares	JIS A 5207 Sanitary Wares	
KR 8521 (June 17, 1985)	Hyundai Pipe Co., Ltd.	Carbon Steel Pipes for Ordinary Piping	JIS G 3452 Carbon Steel Pipes for Ordinary Piping JIS G 3454 Carbon Steel Pipes for Pressure Service	Black, Galvanized Pipes
KR 8522 (June 17, 1985)	Hyundai Pipe Co., Ltd.	Carbon Steel Boiler and Heat Exchanger Tubes	JIS G 3461 Carbon Steel Boiler and Heat Exchanger Tubes	
DE 8501 (Aug. 21, 1985)	Uvex Winter Optik GmbH	Eye Profectors for Radiations	JIS T 8141 Eye Protectors for Radiations	Finished Goods Lenses
DE 8502 (Aug. 21, 1985)	Uvex Winter Optik GmbH	Eye Protectors	JIS T 8146 Eye Protector with Tempered Glass Lenses JIS T 8147 Eye Protector with Plastic Lenses	Finished Goods Lenses Finished Goods Lenses
(Nov. 11, 1985)	Taiwan Songfeng MFG. Co., Ltd.	Acrylic Resin Teeth	JIS T 6506 Acrylic Resin Teeth	
KR 8623 (Jan. 21, 1986)	Korea Steel Pipe Co., Ltd. Inchon Factory	Carbon Steel Tubes for Structural Purposes	JIS G 3444 Carbon Steel Tubes for General Structural Purposes	
KR 8624 (Jan. 21, 1986)	Korea Steel Pipe Co., Ltd. Inchon Factory	Carbon Steel Pipes for Ordinary Piping	JIS G 3452 Carbon Steel Pipes for Ordinary Piping JIS G 3454 Carbon Steel Pipes for Pressure Service	Black, Galvanized Pipes
KR 8625 (Feb. 3, 1986)	Sechan Development Co., Ltd. Pohang Factory	Covered Electrodes for Mild Steel	JIS Z 3211 Covered Electrodes for Mild Steel	D 4301, D 4314, D 4327
KR 8626 (Feb. 3, 1986)	Sechon Development Co., Ltd. Pohang Factory	Solid Wires for MAG Welding of Mild and High Strength Steel	JIS Z 3312 Solid Wires for MAG Welding of Mild and High Strength Steel	YGW 12
TW 8614 (Feb. 28, 1986)	Taiho Tool MFG. Co., Ltd.	Hand Taps	JIS B 4430 Ordinary Hand Taps for Metric Coarse Thread JIS B 4432 Ordinary Hand Taps for Unified Coarse Thread	Class 2, 3 Class 2, 3
KR 8627 (Mar. 17, 1986)	Pusan Steel Pipe Industrial Co., Ltd. Pohang Factory	Carbon Steel Tubes for Structural Purposes	JIS G 3444 Carbon Steel Tubes for General Structural Purposes JIS G 3445 Carbon Steel Tubes for Machine Structural Purposes	
KR 8628 (Mar. 17, 1986)	Pusan Steel Pipe Industrial Co., Ltd. Pohang Factory	Carbon Steel Square Pipes	JIS G 3466 Carbon Steel Square Pipes for General Structural Purposes	Class 1, 2
KR 8629 (Aug. 5, 1986)	Union Steel MFG. Co., Ltd.	Carbon Steel Pipes for Ordinary Piping	JIS G 3452 Carbon Steel Pipes for Ordinary Piping JIS G 3454 Carbon Steel Pipes for Pressure Service	

Table 8. (Continued)

Approved No. (Approved on)	Name of Approved Factory	Designated Commodity	JIS Number and Title	Grade or Class
KR 8630 (Aug. 5, 1986)	Union Steel MFG Co., Ltd.	Carbon Steel Tubes for Structural Purposes	JIS G 3444 Carbon Steel Tubes for General Structural Purposes JIS G 3445 Carbon Steel Tubes for Machine Structural Purposes	
KR 8631 (Aug. 5, 1986)	Sammi Steel Co., Ltd. Changwon-Plant	Stainless Steel Bars	JIS G 4303 Stainless Steel Bars JIS G 4318 Cold Finished Stainless Steel Bars	
KR 8732 (Jan. 19, 1987)	Dongbu Steel Co., Ltd. O-RWU Works	Carbon Steel Tubes for Structural Purposes	JIS G 3444 Carbon Steel Tubes for General Structural Purposes	
KR 8733 (Jan. 19, 1987)	Dongbu Steel Co., Ltd. O-RWU Works	Carbon Steel Pipes for Ordinary Piping	JIS G 3452 Carbon Steel Pipes for Ordinary Piping JIS G 3454 Carbon Steel Pipes for Pressure Service	
KR 8734 (Jan. 19, 1987)	Dongbu Steel Co., Ltd. Incheon Works	Carbon Steel Tubes for Structural Purposes	JIS G 3444 Carbon Steel Tubes for Genral Structural Purposes	
KR 8735 (Jan. 19, 1987)	Dongbu Steel Co., Ltd. Incheon Works	Carbon Steel Pipes for Ordinary Piping	JIS G 3452 Carbon Steel Pipes for Ordinary Piping JIS G 3454 Carbon Steel Pipes for Pressure Service	
KR 8736 (Jan. 17, 1987)	Dongbu Steel Co., Ltd. Pusan Works	Carbon Steel Tubes for Structural Purposes	JIS G 3444 Carbon Steel Tubes for General Structural Purposes	
KR 8737 (Jan. 17, 1987)	Dongbu Steel Co., Ltd. Pusan Works	Carbon Steel Pipes for Ordinary Piping	JIS G 3452 Carbon Steel Pipes for Ordinary Piping JIS G 3454 Carbon Steel Pipes for Pressure Service	
KR 8738 (Feb. 5, 1987)	Hanbo Steel Industrial Co., Ltd. Busan Plant	Steel Bars for Concrete Reinforcement	JIS G 3112 Steel Bars for Concrete Reinforcement	
KR 8739 (Feb. 27, 1987)	Dongkuk Steel Mill Co., Ltd. Pusan Works	Rolled Steel	JIS G 3101 Rolled Steel for General Structure	
KR 8740 (Feb. 27, 1987)	Dongkuk Steel Mill Co., Ltd. Pusan Works	Steel Bars for Concrete Reinforcement	JIS G 3112 Steel Bars for Concrete Reinforcement	
KR 8741 (Feb. 27, 1987)	Dongbu Industrial Co., Ltd. Pohang Plant	Low Carbon Steel Wire and Low Carbon Steel Wire Stand Product	JIS G 3532 Low Carbon Steel Wires	

5. International Standardization Activities of Japan

5.1 Participation in ISO and IEC

JISC joined ISO and IEC in 1952, and 1953 respectively. As to ISO, JISC participates as P-member in 89 of ISO's 164 TCs, and as O-member in 64 TCs. As to Council, JISC has been a council member between 1957-59, and from 1969.

For ISO, since Jan. 1, 1986, Mr. Isamu Yamashita is the 14th President (1986-88) as a first Japanese, and for IEC, Prof. N. Takagi was the 22nd President of IEC.

Annually, many Japanese experts participates in various TC, SC, and WG meetings. Table shows the figures.

For secretariats of TCs, SCs, and Convenors of WGs, the number increased and now 45 for ISO, and 3 for IEC (TC and SC only).

It is also important to host meetings of TC, SC, and WG. Last year Japan hosted 17 meetings of ISO and 8 meetings of IEC.

5.2 Technical Cooperation with Developing Countries

Governmental technical cooperation with developing countries in the field of standardization is mainly financed by JICA (Japanese International Cooperation Agency). It takes a form of (1) group training in Japan, (2) dispatch of Japanese experts to requesting countries by JICA expense, and (3) inviting individual trainees from developing countries by JICA. Standards Department cooperate with JICA for the smooth implementation of these cooperations.

For group training course, Standardization and Quality control course for 3 months are annually held, and Japanese Standards Association is entrusted to implement the course under the advice of Standards Department, AIST. Also since 1979, Certification and Inspection Course for two months started. And in 1986 Senior Seminar in Industrial Standardization and Qualty Control started.

For interested person, it is advised to make contact with JICA office or Japanese Embassy of his/her country.

Dispatch of Japanese experts and acceptance of individual trainee are numerous. In both cases, application is to JICA office or Japanese Embassy in respective countries.

Table 9. Activities of Technical Cooperation with Developing Countries

Standardization and Quality Control Course

Fiscal year	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Number of participants	15	18	18	15	16	17	16	12	17	15
Number of countries	14	14	15	12	13	14	16	12	17	15

Fiscal year	1978	1979	1980	1981	1982	1983	1984	1985	1986
Number of participants	16	15	15	17	15	16	17	16	16
Number of countries	15	15	15	14	15	15	17	16	15

Certification Course

Fiscal year	1979	1980	1981	1982	1983	1984	1985	1986
Number of participants	10	11	11	12	10	11	10	11
Number of countries	10	9	11	12	10	11	9	11

Senior Seminar in Industrial Standardization and Quality Control

Fiscal year	1986
Number of participants	9
Number of countries	9

5.3 Other Activities

As international standardization needs lots of exchange of information for truely effective and meaningful international standards, JISC has an intention to communicate bilaterally and multilaterally on international standardization as far as possible. Beside ISO and IEC, JISC participate PASC (Pacific Area Standards Congress) which is a forum to exchange information on each other's standardization activities. Bilateral exchanges tend to increase, including European Community beside ISO or IEC member bodies. The basic standpoint is to smooth international standardization and to make JIS more international.

Enquiry Points for JIS (Standards) and JIS Marking System

(1) Standards Department (Secretariat of JISC),
Agency of Industrial Science and Technology,
Ministry of International Trade and Industry

(Address) 1-3-1 Kasumigaseki,
Chiyoda-ku, Tokyo, 100 JAPAN.

(Phone) 03-501-9295/6

(Telefax) 03-580-1418

(2) *Japanese Standards Association (JSA)*

(Address) 4-1-24 Akasaka
Minato-ku, Tokyo, 107 JAPAN.

(Phone) 03-583-8001

(Telefax) 03-586-2014

(3) Japan External Trade Organization (JETRO)
Standards Information Service

(Address) 2-5-2 Toranomon,
Minato-ku, Tokyo, 107 JAPAN.

(Phone) 03-582-6270

(Telefax) 03-589-4179

(4) *Each Embassy, Consulate-General and Consultate of JAPAN in* Foreign Countries.

(5) Each JETRO Office in Foreign Countries.

(6) Others

(2) 関 口 団 員 分

OUTLINE OF TOTAL OUALITY CONTROL IN JAPAN

by Mr. Masaru SEKIGUCHI
Central Quality Committee
The Furukawa Electric Co., Ltd.

JAPAN INTERNATIONAL COOPERATION AGENCY

CONTENTS

1. Total Quality Control (TQC) Concept in Japan

1.1 Quality First Based on Principle of Market-In

The basic idea of quality control places quality before anything else, based on the Market-In customer- or consumer-oriented principle of offering products and services that will deliver in the market on the stress on quality. As it is practiced in Japan, total quality control (TQC) is based on the concept that the "next processes are our customers" and very distinctive in that its application is expanded to embrace all business activities inside and outside of a company.

1.2 Effective Use of Quality Control Techniques

Compared with other control techniques, quality control is unique in that it has well established, basic and practical "techniques for quality control". All these techniques are applicable to control and improvement activities in all fields of business activities, and proven highly effective, too. It is a major characteristic of TQC in Japan that quality control techniques based on statistical concepts are arranged into the "QC seven tools", which are easily understandable and applicable by anyone and that they are applied most exhaustively.

In addition to the "QC seven tools", many other scientific technics, such as the "seven management tools for QC", application of statistics in the form of design of experiment and multivariate analysis, reliability techniques like FMEA (Failure Mode and Effects Analysis) and FTA (Fault Tree Analysis), and also IE, OR, VE and so on are used, producing impressive results.

1.3 Control and Improvement Based on Facts

Collecting accurate information is essential to drawing up concrete programs or policies. For this purpose, it is necessary to insure that information collected is factual, enabling us to recognize the essence of an issue accurately.

The next important thing is to carry out control (i.e. rotating the PDCA cycle) or improvement (correct execution of a problem solving procedure) completely. Select priority items and their control must be thoroughly enforced and results summed up by using a "QC Story" in the end. These activities make up the basics of successful quality control.

1.4 Emphasis on Process

Quality control aims to create, maintain and administer a method or setup that will produce "favarable results" satisfactory to customers. The "favorable results" here means that quality offered is exactly the one required by customers and that it does not vary. It should be firmly recognized that these "favorable results" are attained by a "good process" while a "bad process" produces "unfavorable results". We should try to identify the difference between the two processes, because the kernel of a problem or a key to its solution lies in the difference. Making much of a process naturally leads to thorough stratification. This makes an important point of quality control.

1.5 Thorough Standardization

Standardization produces a common concept, promotes mutual understanding and supports in smooth execution of business. The results of improvement are solidly incorporated in routine work. This makes a foundation, on which the effect of improvement is assured.

Quality control activity is only a waste of time, money and labor without standardization. It is standardization again that assures the tangible and intangible effects of improvement. This is the very reason why standardization is said to "play the role of a brake" in promoting quality control. Another key point presents itself here in our promotion of TQC.

1.6 Respect for Humanity

No matter how far mechanization and automation are advanced leading to formation of an information society of unprecedented order, the pre-condition that should form its basis is to realize the happiness of human society. For enterprises this translates to a theory that each of them should fundamentally aim at human-centered management whereby all people related to it will be happy, giving full play to their talent.

The secret of successful TQC is said to lie in the following.

(1) Efficient standardization

(2) To devise the authority of ample latitude

(3) Management to encourage all participants to demonstrate their capabilities to the greatest possible extent

The term humanity herein refers to the independency, thinking faculty and creating faculty of man.

The question is what should be done, and how, to motivate all participants in a TQC program to display these powers of theirs to the best advantage.

The answer lies in respecting their humanity and encouraging them to share in work according to their individual capabilities so that each of them may give full play to his or her talent.

The conditions for motivating each participant to perform to the best advantage are listed below.

(1) Clear definition of the purpose or target of work.

(2) Entrusting a certain scope of work to each participant for execution on his or her own responsibility.

(3) Some approved latitude for each participant to devise and try a work procedure on his or her own.

(4) Fast and accurate feedback of results of work to the participant responsible for it.

These are emphasized clearly also in the "basic idea of QC circle activities."

As for top and middle managers this respect for humanity in management means a drastic transfer of authority. Management by total participation where top-down practices are tempered with bottom-up innovation is the very management with due respect for humanity.

2. Management by Policy

The "management by policy" embraces all activities to achieve systematically the medium- or long-term management program or management policy for a fiscal year an organization has established as a means to attain the purpose of its management. In many case, it is applied to the management policy for a fiscal year (policy = target + means).

If an enterprise is to continue to exist and develop, it is essential to concentrate its total capabilities according to the policy set forth by its top management and carry out business to a high standard of efficiency.

As TQC is an activity of total participation by all divisions and employees, it is a must to fully inform every participants of the "direction in which the participants should strive themselves" in order to promote TQC. Here lies the significance of management by policy.

The efficient execution of this management by policy requires the following.

(1) Clear definition of policy and complete recognition of policy by all participants

The policy of top management should be defined clearly and deployed systematically through out divisions and corporate hierarchy. The way of thinking or philosophy of top management should be fully understood by all participants.

(2) Preparation of program

What should be done, and how by each participant, to attain the target of the policy set forth by top management should be concretely programmed.

(3) Review of execution

The program should be executed and the state of achievement checked and grasped constantly.

(4) Corrective actions and reflection on next policy

Problematical points should be identified clearly, corrective actions taken properly based on them and results reflected in mapping out the next policy.

In other words, in order to live up to a "policy whereby a division must work" as established based on the management policy, management by policy can be considered as a companywide activity to achieve a breakthough by detecting and analyzing obstacles, devising means for solution of problems and correcting imperfections.

As such, management by policy is expected to produce the following effect.

(1) The management policy of the enterprise can be thoroughly made known to the very bottom of its corporate hierarchy, contributing to attaining management objectives to a high standard of efficiency.

(2) By applying the basic concepts and techniques of quality control major problems can be settled efficiently or problematical situations corrected positively and results can be incorporated in work routines.

(3) Major problems can be recognized and understood correctly by deploying the policy throughout divisions and corporate hierarchy. At the same time, the interflow of will among divisions

is promoted smoothly and favorable mood for close cooperation is created.

(4) All participants are motivated properly through promotion of management by policy, and their capabilities and morale are upgraded in the process.

(5) The target can be revised, program altered and work setup modified timely and quickly according to a change in environmental conditions.

3. Top Management Evaluation

Top management should check to see if quality and QC are conducted as planned, and take action. To do so, organize a system that will routinely provide necessary information concerning quality and management which can be fed back to the top management. One of the characteristics of Japanese TQC is that it engages in quality audits and also QC audits and diagnoses. It is necessary to institutionalize of QC audits by the top management (the person with the highest authority).

Audit by the top management means that the president himself goes to the factory and to different offices to make his own observations, and uses his own judgment in auditing the results of QC activities.

In proceeding with a QC audit, each of the divisions subject to the presidential audits will prepare and submit "an exploratory report on implementation of quality control." The president accompanied by several of his directors, will then visit factories, offices and separate divisions of the headquarters and ask each of the units subject to audit to explain the following enumerated items.

The explanation must be accompanied by data. After the explanation is over, there should be a period of questions and answers.

The explanation must include the following:

(1) Under what policies and objectives, has the unit proceeded with its quality control?

(2) What kinds of results have been obtained, and by means of what procedures? (The report must not consist merely of the results. Let the unit show the process through which the results are obtained. Let them report their efforts as QC stories.)

(3) What kinds of problems still exist today?

(4) Under what policies and objectives, does the unit expect to proceed with quality control in the future?

(5) What suggestions does the unit want to give to the president and to the headquarters staff?

Ideally, questions and answers on the above should be traded in the morning when everyone is present. This should be followed by afternoon sessions consisting of visits to work places such as the divisions of research and development, manufacturing of prototypes, purchasing, manufacturing, quality control, marketing, and office functions. All the auditors who are taking part in the QC audit are expected to attend these sessions. They are to study all of these units, investigate their QC activities.

The final session of the presidential audit consists of remarks and suggestions. A presidential audit report may be sent to the unit concerned at a later date.

After receiving the presidential suggestions or audit report, each of the units, such as the fuctory unit, must indicate how it plans to take action and prevent recurrence of mistakes. After each of the units submits its plan, the plan is to be monitored periodically, and a report of complaints with the plan is to be given at the next presidential audit.

The following positive results can ensure from a presidential audit:

(1) First of all, such an audit is good for the president. The audit depends on him, so he is forced to study about quality control. He can also observe the actual operations of his factory and other units, which deepens his understanding of his own company. Knowing everything through paperwork is not enough. The president may have an idea of how a particular unit operates and can conceptualize its position in the company, but nothing can supersede actual knowledge obtained through firsthand experience.

(2) The president can discover the true state of his company.
Normally, truth is not reported to the president. Bad news is suppressed and only good news is reported to him. If subordinates writes candid reports, they can get scolded. So the president never get angry when something bad is reported to him. As long as it is true, never lose his temper. Insted, let his employees report on things that are not doing well. Let them give the president a candid report of what troubles them. Discuss these problems and try to find solutions together in a spirit of cooperation. After all, the audit by the president is conducted for this very purpose.

(3) There will be an improvement in the human relationship between the president and his subordinates. The president is usually so busy that he does not have a chance to meet section chiefs, staff members, and foremen face to face. The audit provides an opportunity to meet, to talk, and to listen. They will develop a feeling for one another and their relations will improve.

(4) For the people whose QC activities are audited, it is also a significant occasion. There are always ups and downs in human activities. There are times when a person only goes through the motions. The presidential audit is an occasion for challenging employees and stimulating rigorous activities in total quality control.

It is important to note that the president himself must be the one to conduct the audit. We all know how busy the president is, but he must make time for the audit. The presidential audit plays an important role to promote TQC.

4. Quality Function Deployment

Quality Function Deployment begins with establishing product design quality by converting customer requirements into alternative characteristics in the planning and design stages. The process of systematically developing, or translating and transmitting, the design's intent and noteworthy points on product assurances by clarifying the relationship between the quality of each functional and composing part and other processing factors in the production stage, is called Quality Deployment. The combination of this and a systematic and detailed deployment of functions or operational functions to realize the target quality is called Quality Function Deployment.

In establishing new target quality in new product development or in the improvement of existing products, the quality required by users should at first be fully understood, and then converted from a technical viewpoint to quality characteristics according to factor, so as to faciliate examination from a comprehensive viewpoint. This is combined in matrix form, called a Quality Table. The quality table is "a table to systematize the quality as truly demanded by users in language expressions, indicate the relationship to quality characteristics, and convert user demands to alternative characteristics to implement quality design."

In the quality table, claims received in the past are given consideration, important quality characteristics are selected, characteristic values are established, design quality is actually set, and the method of checking quality, test methods and its conditions are determined. At this stage, technical limitations become clear, to be applied as important itmes in technical development.

Next is the deployment of a sub-system for detail design and preparation for production. The important point at this stage is to make clear the relationship between quality characteristics and the quality of parts so that the functional characteristics of the parts in relation to the important quality characteristics can be accurately and con-

cretely described on the design diagram. This is an important control point in quality assurance. The items for inspection of units and composing parts are then selected. All technical problems and limitations should be extracted at this stage so that measures can be launched to solve them.

Next is process deployment. Activities conducted at this stage include securing process capacity, process capability, pursuit of minimum cost, checking of production conditions, division between internal production and external orders, establishment of standards, division of facility use and items of quality control, developing a QC process plan and a QC process chart, skill training, data analysis and feedback to the design.

Design review, which is carried out at the new product development stage, is extremely important as it serves as an inspection of the design. Quality deployment is a means to improve design quality, and quality function deployment can ensure the development and production of better products that corresponds to users' needs.

3. 英 文 所 見

(1) サウディ・アラビア

Riyadh

July 23,1987

Dear Sir,

It is our great pleasure to submit herewith a summary report of the Follow-up Team for Ex-participant of Group Training Courses in Certification Systems, and Industrial Standardization and Quality Control, and Senior Seminor in Industrial Standardization and Quality Control.

Through the exchange of views, we received meaningful suggestions from the authorities concerned and ex-participants for further improvement of the courses.

It is also grateful that we could successfully hold the technical seminar on Standardization and QC by SASO's great cooperation.

The team members would like to express their deepest gratitude to the ex-participants as well as authorities concerned for the warm welcome and kind cooperation ext ded to them.

Yours sincerely,

M. Yoshinaga

Masanori Yoshinaga

Team Leader

SUMMARY REPORT

1. Objective

To evaluate the results of training in Japan, to grasp Saudi Arabian technical conditions as well as their demand for training, and to offer technical information through the technical seminar.

2. Members

Mr.Masanori Yoshinaga	Senior Technical Consultant, Japanese Standards Association (JSA)
Mr.Masaru Sekiguchi	Manager, Central Quality Committee, Furukawa Electric Co.,Ltd.
Mr.Atsushi Kamishima	Staff, Third Training Div., Training Affairs Dept., Japan International Cooperation Agency (JICA)

3. Schedule

1987,July 18 (Sat) Arrival at Riyadh
19 (Sun) Visit to Japanese Embassy and JICA Office
20 (Mon) Visit to Saudi Arabian Standards Organization (SASO)
21 (Tue) Visit to Ministry of Commerce, and Ministry of Industry and Electricity
22 (Wed) Technical Seminar on Industrial Standardization and Quality Control
23 (Thu) Report to Japanese Embassy and JICA Office
24 (Fri) Data Analysis
25 (Sat) Departure from Riyadh

4. Saudi Arabian Personnel whom the team met

4.1.SASO

Dr.Khalid Al-Khalaf	Director General
Mr.Nabir Ameen Molla	Deputy Director General
Mr.Saad Al-Hussainan	Coordinator for Japanese Technical Cooperation

4.2.SASO Ex-participants

Mr.Fahad A.A.Salamah	General Director of Quality Control General Dept.
Mr.Ibrahim Ali Al-Kholaif	Director of Standards Implementation Dept.
Mr.Moteib Al-Harbi	Standards Implementation Dept.
Mr.Henaihin I.Abdulaziz	Quality Mark and Certificates of Conformity Dept.

4.3.Ministry of Commerce

Mr.Othman Al-Rokban	Director General of Training and Organization Dept.

4.4.Ministry of Industry and Electricity

Mr.Mohammed A.A.Al-Refaie	Director of Organization Dept.
Mr.Naser Al-Harbash	Acting Director of Organization Dept.

4.5.Technical Seminar

30 attendants (Names omitted)

5. Team's Impression

The team's impression through discussion with ex-participants and their superiors as well as ex-participants' answer for questionnaire is as follows;

5.1. The ex-participants consider various items of the three Training courses/seminar to be useful. After returning to Saudi Arabia, some participants circulated the materials which they got in Japan in order to diffuse the information. Moreover one applies the training outcome for the factory inspection. Others gave lectures at the seminar of ASMO.

5.2. Saudi Arabian side, however, expects further improvement of the courses as follows;

5.2.1. more practical factory visit (for example, accompanied by the Japanese government's inspector, with more time for on-the-spot observation and Q&A)

5.2.2. in the course of Industrial Standardization and Quality Control, minimum one year experience in the field (though at present three years experience is requested to the participants, the course is general and primary enough for less experienced staff)

5.3. Ministry of Industry and Electricity fosters domestic industries including the establishment of several industrial cities. On the other hand, various kinds of imported and domestic goods are supplied in the market. In this sense it becomes much more important that the quality of products is assured.

5.4. Ministry of Commerce is in charge of the inspection of imported goods, as well as SASO in charge of quality marking scheme for factories and other relating affairs. Both organizations seem to enhance their function to cope with the above-mentioned (5.3.) circumstance.

5.5. Considering this status-quo in Saudi Arabia, the training in the field of development of standards, factory assessment, and products inspection are requested to be more practical.

5.6. To meet this need, we would like to improve the training courses as far as possible.

(2) ガ　ー　ナ

Accra

July 30, 1987.

Dear Sir,

It is our great pleasure to submit herewith a summary report of Follow-up Team for Ex-participants of Japan International Co-operation Agency's Group Training Courses in Certification Systems, and Industrial Standardization and Quality Control and Senior Seminar in Industrial Standardization and Quality Control.

Through the exchange of views, we received meaningful suggestions from the authorities concerned and ex-participants for further improvement of the courses.

It is also grateful that we could successfully hold the technical seminar on Standardization and QC by Ghana Standards Board's great co-operation.

The team members would like to express their deepest gratitude to the ex-participants as well as authorities concerned for the warm welcome and kind co-operation extended to them.

Yours sincerely,

M. Yoshinaga

Masanori Yoshinaga

Team Leader.

SUMMARY REPORT

1. Objective

To evaluate the results of training in Japan, to grasp technical conditions as well as their demand for training, and to offer technical information through the seminar.

2. Members

Mr. Masanori Yoshinaga	Senior Technical Consultant, Japanese Standards Association (JSA)
Mr. Masaru Sekiguchi	Manager, Central Quality Committee, Furukawa Electric Co. Ltd.
Mr. Atsushi Kamishima	Staff, Third Training Div., Training Affairs Dept., Japan International Cooperation Agency (JICA)

3. Schedule

1987, July	25 (Sat)	Arrival at Accra
	26 (Sun)	Preparatory Work
	27 (Mon)	Visit to Japanese Embassy and JICA Office
	28 (Tue)	Visit to National Industrial Co. Ltd. (NIC), Management Development and Productivity Institute (MDPI), and Ghana Standards Board (GSB)
	29 (Wed)	Technical Seminar on Industrial Standardization and Quality Control
	30 (Thu)	Report to Japanese Embassy and JICA Office
	31 (Fri)	Departure from Accra

4. Ghanaian Personnel whom the team met

4.1 National Industrial Co. Ltd. (NIC)

Mr. J. P. A. Nyako	Managing Director
Mr. K. Twum-Ampofo	Ag. Deputy Managing Director Finance and Administration
Mr. David Tibe Maakuu *	Asst. Supervisor
Mr. E. A. Botchway	Ag. Manager, Textiles Division
Mr. Burns K. Obeng	Senior Accountant, Textiles Div.

4.2 Management Development and Productivity Institute (MDPI)

Mr. J. K. A. Wiredu	Ag. Deputy Director (Technical)
Mr. Sam Klu *	Principal Consultant

4.3 Ghana Standards Board (GSB)

Dr. Lawrence Twum-Danso *	Director
Mr. Fabian Kodjoe Donkor	Deputy Director (Administration)
Mr. Anthony K. Annan	Asst. Secretary (Training)
Mr. Samuel Gyimasi	Public Relations Officer
Mr. Frederic Gordon MacBruce *	Senior Scientific Officer
Mrs. Charlotte Afi Ohene-Manu *	Senior Scientific Officer
Mrs. Kistina Biritwum *	Scientific Officer

4.4 United Lamps Ltd.

Mr. Abraham Adjei Dsane *	Managing Director
Mr. Thomas K. Tabiri	Quality Control Officer

4.5 Technical Seminar

35 Attendants:

1.	Dr. L. Twum-Danso *	Ghana Standards Board
2.	Mr. S. Boateng	"
3.	Mr. E.P.D. Barnes	"
4.	Mrs. J. H. Quaye	"
5.	Mrs. C.A. Ohene-Manu *	"
6.	Mrs. K. Biritwum *	"

7.	Mr. F. G. MacBruce *	Ghana Standards Board
8.	Mr. Nimo Ahinkorah	"
9.	Mr. J. K. Archer	"
10.	Dr. J. K. Odonkor	"
11.	Mr. H. Y. Aku	"
12.	Mr. K. E. Enyimayew	"
13.	Mr. A. K. Annan	"
14.	Mr. S. Gyimah	"
15.	Mrs. Margaret R. Azu	"
16.	Mr. Annan Prah	GIHOC (Steel Works/Tema)
17.	Mr. Glover Tay	" (Cannery/Nsawam)
18.	Mr. Freeman Andoh	Information Services Dept.
19.	Ms. Constance Quacoe	Ghana Export Promotion Council
20.	Mr. D. Oppong	"
21.	Ms. Martina Larmie	"
22.	Mr. B. Wobil	National Board for Small Scale Ind.
23.	Mr. Sam Y. Klu *	M D P I
24.	Mr. A. A. Dsane *	United Lamps Ltd.
25.	Mr. Thomas K. Tabiri	"
26.	Mr. E. A. Botchway	NICTEX
27.	Mr. David T. Maakuu *	"
28.	Dr. G. Yawson	CSIR (FRI)
29.	Ms. Mary Halm	Food Research Institute
30.	Dr. Betty Bediako-Amoa	University of Ghana
31.	Dr. S. Sefa-Dedeh	"
32.	Mr. Ebenezer Askiley	Ghana Medical School
33.	Ms. Agnes Insaidoo	Ghana Broadcasting Corporation
34.	Mr. Joan Abaah	"
35.	Mr. Dan Owusu	Peoples Daily Graphic.

* Ex-Trainees (JICA Training Programmes)

5. Team's Impression

The team's impression through discussion with ex-participants and their superiors as well as ex-participants' answer for questionnaire is as follows:-

5.1 Ex-participants consider the following items included in the three courses/Seminar are useful:

5.1.1 Japanese Management system including Total Quality Control (TQC) and Quality Control (QC) circle

5.1.2 Application of Statistical methods

5.1.3 Conformity certification schemes for industrial products.

5.1.4 Proper labelling schemes for agricultural products.

5.1.5 Outline of standardization system

5.2 After returning to Ghana, ex-participants recommended the following items to their colleagues/superiors as a result of study in Japan:

5.2.1 National level activities of propagating necessity of standardization and QC

5.2.2 Instituting QC circles in Companies

5.2.3 Establishment of testing laboratory accreditation system

5.2.4 Review of the current mandatory certification system

5.3 Participants experience in Japan was reflected in the following forms:

5.3.1 Improvement of curriculum and textbooks in relation to QC training/seminar held by ex-participants' organizations

5.3.2 Technical guidance by ex-participants for QC to various Industries

5.3.3 Introducing TQC concept to ex-participants' factories

5.4 Ex-participants generally seem to utilize the training fruit effectively, and in this sense Japanese training is evaluated highly.

5.5 Ghanaian side, however, expects betterment of the courses as follows:

5.5.1 More time for discussion among participants

5.5.2 Factory visit taking into consideration participants' specialities (e.g. dividing participants into some groups according to their majors in Universities, small scale Company visit)

5.6 To meet above-mentioned needs, we would like to improve the courses as far as possible.

5.7 The technical seminar was held with many attendants from not only ex-participants organs but also other authorities, companies

Universities, and TV/Radio station.

It shows their great interest in Standardization and QC.

For their development, we hope further seminar and/or conference like this to be held.

5.8 Ghana side leaders in the field of Standardization and QC recognize what the problem is. The team hopes it will be solved in collaboration with relevant organizations for the sake of industrial development and people's life improvement.

As for TQC, we hope that Ghanaian government and industries step by step develop it which fits for Ghanaian circumstances.

4. 「認証検査制度コース」「工業標準化コース」「工業標準化・品質管理シニアセミナー」各コース帰国研修員リスト

(1) サウディ・アラビア

氏名（研修員番号）	研修期間	参加コース名	研修参加時の附属先、職位	質問票の回収	面接
Mr. Adil Abdulkareem Alyahya (7901043)	1979. 8. 18 – 11. 10	工業標準化コース	Saudi Arabian Standards Organization (SASO), Measurement Dept.	X	X
Mr. Badr Obeid Al-Saad (8001126)	1980. 8. 20 – 11. 10	〃	SASO, Food Section, Head of Food Dept.	X	X
Mr. Fahad Abdulah Salamah (8300442)	1983. 6. 29 – 9. 9	〃	SASO, Head of Standard Div	○	○
Mr. Muhammad Nowman Al-Inizi (8400142)	1984. 5. 23 – 8. 5	〃	SASO, Technical Officer	X	X
Mr. Saad Al Abdullatif (8500279)	1985. 5. 15 – 7. 28	〃	SASO	X	X
Mr. Mohammad Al-Debasi (8600734)	1986. 7. 3 – 9. 14	〃	Ministry of Commerce, Central Quality Control Laboratory, Laboratory Director	○	X
Mr. Ibrahim Ali Al-Kholaif (8003037)	1981. 1. 9 – 3. 8	認証検査制度コース	SASO, Head of Quality Control Dept.	○	○
Mr. Moteb Abdulrhman Mofleh Al-Harby (8303642)	1984. 1. 11 – 3. 2	〃	SASO, Implementation Dept.	○	○
Mr. Abdul Aziz Saad Al-Saleem (8404764)	1985. 1. 9 – 3. 10	〃	Ministry of Industry, Gassim Industrial City, Director	X	X
Mr. Basham Khalid (8504670)	1986. 1. 10 – 3. 9	〃	SASO, Construction & Building Material	○	X
Mr. Abdulaziz Henaihin (8604651)	1987. 1. 9 – 3. 8	〃	SASO, Quality Control Dept. Industrial Engineer	○	○
Mr. Abdullah A. Al-Hamoudi (8604289)	1986. 11. 2 – 11. 28	工業標準化・品質管理シニアセミナー	SASO, Director of Quality Mark & Certification	○	X

(2) ガ ー ナ

氏名（研修員番号）	研修期間	参加コース名	研修参加時の所属先、職位	質問票の回収	面接
Ms. Kistina Biritwum (7702277)	1978. 1. 5 －3. 30	工業標準化コース	Ghana Standards Board (GSB) Assistant Scientific Officer	○	○
Mr. Samuel Yao Klu (8201138)	1982. 7. 8 －9. 25	〃	Management Development and Productivity Institute, Industrial Engineering Consultant	○	○
Ms Charlotte Afi Ohene-Manu（研修参加時旧姓 Charlotte Afi Boakye) (8300470)	1983. 6. 30 －9. 9	〃	GSB, Pharmaceuticals and Medical Device Scientific Officer	○	○
Mr. David Tibe Maakuu (8305349)	1984. 5. 23 －8. 5	〃	National Industrial Company Ltd., Quality Control Technician	○	○
Mr. Frederick Gordon Macbruce (8406130)	1985. 5. 17 －7. 28	〃	GSB, Head of Food Agriculture Dept.	○	○
Mr. Abraham Adjei Dsane (7902535)	1980. 1. 16 －3. 9	認証検査制度コース	GSB, Engineering Dept. Scientific Officer	○	○
Dr. Lawrence Twum-Danso (8603948)	1986. 11. 2 －11. 28	工業標準化・品質管理シニアセミナー	GSB, Director	○	○

5. ガーナ Management Development and Productivity Institute (MDPI) 主催のＱＣセミナーの変遷（出典：ＭＤＰＩ）

(1) １９８２年

QUALITY CONTROL

Accra: May 18-21, 1982

FEE: ₵450.00

1. OBJECTIVE

To enable participants appreciate the nature of quality and the requirements necessary for achieving quality in production.

2. INTENDED FOR

Production Managers or Quality Control Officers

3. DURATION

Two Weeks, (Mornings only)

4. CONTENT

Quality Management

Economics of Quality

Statistical Quality Control

Requirements of the Ghana Standards Board

5. PRESENTATION

Considerable emphasis is laid on participative activities. Participants will be encouraged to develop control charts for processes they are engaged in.

(2) １９８５年

QUALITY CONTROL

VENUE: ACCRA　　PERIOD: AUG. 5 -- SEPT. 13, 85

FEE: ₵7,500.00　　DURATION: 6 WEEKS

1. OBJECTIVES:

To introduce participants to the concept of Company-Wide Total Quality Control and Quality Control Circle Groups. To encourage the formation of Quality Control Circle Groups in participant's organizations.

2. INTENDED FOR:

Quality Control Officers/Managers and Training Officers.

Participants must have a basic understanding of elementary statistics.

3. CONTENT:

* Fundamental Techniques in Quality Control
* Concept of Company-Wide Quality Control
* Standardization and Quality Control
* The Concept of Quality Control Circle Group and its Practical Applications
* Quality Management
* Value Engineering
* Measurement and Data Treatment
* Cases and Project in Quality Control
* Reliability & Statistical Techniques
* Design of Experiments.

4. PRESENTATION:

Lectures, exercises, films, industrial visits and project work. The course work itself will cover four weeks and two weeks will be devoted to project work.

6. ガーナ規格委員会　1987年7月月報

(GHANA STANDARDS BOARD, MONTHLY NEWSLETTER, JULY, 1987)

EVALUATION OF COURSES IN STANDARDIZATION AND QUALITY CONTROL JULY 28 – 29, 1987

Three officials from the Japan International Cooperation Agency (JICA) under the auspices of the Embassy of Japan will meet officers of the Board and other Institutions who have benefitted from the Agency's courses in Industrial Standardization and Quality Control for an evaluation of the courses on Tuesday July 28, 1987 at the Board's Head Office, State House Accra.

The officials are by Mr. Masanori Yoshinaga, Senior Consultant with the Japanese Standards Association and leader of the team, Mr. Masaru Sekiguchi, General Manager, Central Quality Committee of Furukawa Electric Company, and Mr. Atsushi Kamishima, Training Officer at JICA.

The team will follow up the evaluation course with a one day seminar on Quality Control at the British Council Hall on Wednesday, July 29, 1987. The theme for the seminar is Industrial Standardization and Quality Control.

Mr. Yoshinaga will deliver a lecture on "Standardization and Quality Control – Japan Experience while Mr. Sekiguchi will talk on "Total Quality Control in Japan".

The officials who will arrive in the country on Saturday July 25 leave for home on Friday, July 31, 1987.

The seminar which is the first of its kind in Ghana is to enable the follow-up team monitor JICA's training programme.

While in the country the officials will visit the Ghana Standards Board (GSB), Management Development and Productivity Institute (MDPI), National Industrial Company (NIC) and other Industrial Establishments.

JICA is the official agency of Japan charged with the function of extending technical cooperation to developing countries based on agreements reached between the Japanese government and the governments of recipient countries. Such technical cooperation is designed to help developing countries in their economic and social development.

The following officers have attended JICA courses:

1. Dr. L. Twum-Danso
2. Mrs. Kistina Biritwum
3. Mrs. Charlotte Ohene-Manu
4. Mr. F. G. MacBruce
5. Mr. Abraham Adjei Dzane (formerly with the GSB and now the Managing Director, United Lamps Ltd.)
6. Mr. Samuel Klu, Management Development & Productivity Institute
7. Mr. David Maaku, National Industrial Company (NIC).

7. ガーナ規格委員会に手交した資料一覧

List of materials concerning to TQC

1. Books
   (1) What is Total Quality Control? (The Japanese Way)
   By Dr. Kaoru ISHIKAWA
   (2) QC Circle "KORYO" – "General Principles" of the QC Circle
   QC Circle Headquarters, JUSE
   (3) Reports of Statistical Application Research, Union of Japanese Scientists and Engineers (JUSE) "Seven Management Tools for QC"
   Vol. 33, No. 2, June 1986
   Edited by Dr. Kaoru ISHIKAWA

2. Documents
   (1) Quality Control Activities in the FURUKAWA ELECTRIC Co., Ltd.
   By Masaru SEKIGUCHI
   (2) Management by Policy
      i) Policy Management System
      ii) Characteristics of Japanese Quality Control
      iii) Develop and Promote the "QC Mind" to the Top Management
         ① Misunderstanding common to Top Management

② What must the Top Management do?

iv) Aims of TQC

(3) Seven Indispensable Tools for QC (QC 7 Tools)

i) How to Use the QC 7 Tools

ii) Structure of Cause-and-Effect Diagrams and Example – 3 sheets

iii) Pareto Diagram by Detective Items

iv) Histogram

v) Check Seet for Investigation of Defective Factors in Household Electric Appliance Parts

(4) Management Cycle in QC

(Control Circle or Control Cycle)

i) Management Cycle in Quality Control

ii) Control Circle (by Dr. K. ISHIKAWA)

iii) The spiral of progress in quality (QC Handbook by Dr. J. M. JURAN)

(5) QC Circle Activities

i) Fundamentals of the QC Circle

ii) Spiral Operations of our Never-be-frustrated Circle (Report of QC Circle Activities. at ICQCC '81 TOKYO)

By Izumi TANAKA, Michiko KATO

Kobayashi Kosei (Cosmetic) Co., Ltd. JAPAN – 9 sheets

(6) The QC Story

from Statistical Methods for Quality Improvement by Dr. Hitoshi KUME

(7) Quality Function Deployment

i) The Changes in the Object for Presentation at the Q.C. Conference (by Dr. N. KANO)

ii) Application Phases of Company Activities

iii) Quality Deployment and Quality Function Deployment

iv) Picture

v) Grouping the Language Data

vi) Quality Table

vii) Sub-system Deployment

viii) QC Process Planning Table (Front Cases)

ix) Quality Control Process Chart (JIS C 3307)

ii) ~ viii) are reffered "Standardization and Quality Control," JSA by Dr. Yoji AKAO, Professor of TAMAGAWA University., TOKYO

(8) Education and Training of Quality Control in Japanese Industry by Dr. K. ISHIKAWA from Reports of Statistical Application Research, JUSE, Vol. 16, No. 3, 1969

(9) Check Sheets of QC Mutual Audit

i) Quality Control Mutual Audit Check Sheet (1987)

ii) Roles of Quality Assurance Department

iii) Tests and Inspection — Total 5 sheets—

8. セミナーを紹介した新聞記事

ガーナ People's Daily Graphic （ 1987年7月30日付 ）

'Ensure quality control at all times'

By Adwoa Yan-Ess

DR Lawrence Twum-Danso Director of the Ghana Standards Board (GSB), yesterday advised participants at a technical seminar to transfer the ideas of quality control activity to their Industries.

He also asked them to start in their own small way to evolve quality control action in their factories and build on it like the Japanese experience to produce quality goods for export and to boost exports.

Dr Twum-Danso gave the advice during question time to 30 people drawn from the GSB, Management Development and Productivity Institute (MDPI), National Industrial Company Textiles (NICTEX), Ghana Industrial Holding Corporation (GIHOC) and Ghana Export Promotion Council (GEPC).

The rest are the National Board for Small-Scale Industries (NBSSI), Centre for Scientific and Industrial Research (CSIR), University of Ghana and the Association of Ghana Industries (AGI).

The seminar which is on industrial standardisation and quality control, was organised by the Japan International Co-operation Agency (JICA) at the British Council Hall in Accra.

It is a follow-up course by the JICA for ex-participants of group training course in certification system in Japan to find out how and to what extent the trainees have made use of knowledge acquired in Japan.

Mr Masanori Yoshinaga, senior technical consultant of the Japanese Standards Association (JSA), said Japan adopted quality control from America, built on and modified it to suit their style, culture and mode of employment.

He advised the participants to evolve a quality control system, taking into account the Ghanaian culture, employment methods and activity at various production levels.

Earlier in a lecture on the outline of Industrial Standardisation and Quality Control in Japan, Mr Yoshinaga said the implementation of quality control within factories is provided in the industrial standardisation law as an important item, among others, of factory assessement conducted by government inspectors.

He said quality control is an integral part of management and its activity must therefore be concerned with every phase of management.

Another lecturer, Mr Masaru Sekiguchi of the Central Quality Committee and general manager of the Furukawa Electric Company, said quality control aims to create, maintain and administer a method that will produce favourable results which are satisfactory to the customer.

（和訳）

「常にＱＣを行なおう」

記者　Adwoa Van-Ess

ガーナ規格委員会（ＧＳＢ）の総裁であるDr. Dansoは、昨日（1987年7月29日)技術セミナー参加者に対し、各参加者の企業においてＱＣ活動の概念を広めるようアドバイスを行なった。彼は又、参加者各自の工場においてＱＣを進め、日本が行ったように輸出商品の品質を向上させ、輸出を振興させる為、小さなことから始めるよう求めた。

Dr. Dansoは、質疑の時間に30名の参加者に対してのアドバイスを行なった。これら参加者は、ＧＳＢ、経営開発生産性研究所（ＭＤＰＩ）、国営テキスタイル産業会社（ＮＩＣＴＥＸ）、ガーナ産業持株式会社（ＧＩＨＯＣ）及び、ガーナ輸出振興会（ＧＥＰＣ）、国家小企業局（NBSSI）科学工業研究所（ＣＳＩＲ）、ガーナ大学及び、ガーナ工業協会（ＡＧＩ）からであった。

セミナーは工業標準化とＱＣに関するものであり、アクラ市内のブリティッシュカウンシルにてＪＩＣＡにより実施された。

認証制度分野のＪＩＣＡ帰国研修員を対象としたフォローアップ事業は、日本で得た知識を研修員がどのように、又どの程度活用しているか明らかにすることを目的としている。

(財)日本規格協会の吉永正則参与は、「日本はアメリカからＱＣをとり入れ、つくり上げ、日本の制度・文化・雇用形態に合わせるべく、モディファイを行なった」と述べている。吉永氏は参加者に対し「ガーナの文化・雇用・各種生産規模における活動を考慮した上で、ＱＣシステムを発展させた方が良い」と述べた。

吉永氏の講義「日本における工業標準化と品質管理の概論」の最初の方で氏は、「工業標準化法及び、政府の検査官による工場審査などの重要な手段を通じて、工場でのＱＣの実施は可能となる」旨述べた。氏は又、「ＱＣは、経営の一部分を構成するものであり、それ故ＱＣ活動は、あらゆる局面において関連付けられていなければならない。」と述べた。

もう一人の講師である古河電気工業㈱、中央品質委員会担当部長の関口克氏は「ＱＣは、顧客に満足を与えるような好ましい結果を生むやり方を生み出し、維持し、管理させることを目的としている」と語った。

9. 主要面会者

(1)　サウディ・アラビア

(イ)　SASO（サウディ・アラビア標準化公団）

Dr. Khalid Al-Khalaf　　Director General

Mr. Nabir Ameen Molla	Deputy Director General
Mr. Saad Al-Hussainan	Coordinator for Japanese Technical Cooperation

(ロ) SASO Ex-participants （サウディ・アラビア標準化公団・帰国研修員）

Mr. Fahad A. A. Salamah	General Director of Quality Control General Dept.
Mr. Ibrahim Ali Al-Kholaif	Director of Standards Implementation Dept.
Mr. Moteib Al-Harbi	Standards Implementation Dept.
Mr. Henaihin I. Abdulaziz	Quality Mark and Certificates of Conformity Dept.

(ハ) 在 SASO 日本人専門家

茂木保一
黒部明
鈴木政弘
菊地作弥

(ニ) Ministry of Commerce （商業省）

Mr. Othman Al-Rokban	Director General of Training and Organization Dept.

(ホ) Ministry of Industry and Electricity （工業・電力省）

Mr. Mohammed A. A. Al-Refaie	Director of Organization Dept.
Mr. Naser Al-Harbash	Acting Director of Organization Dept.

(ヘ) 日本大使館

岡崎久彦	特命全権大使
平岡英治	一等書記官

(ト) JICA 事務所

地曳隆紀	所長

(2) ガーナ（＊印は帰国研修員）

(イ) National Industrial Co. Ltd. (NIC)（国営産業公社）

Mr. J. P. A. Nyako	Managing Director
Mr. K. Twum-Ampofo	Ag. Deputy Managing Director, Finance and Administration
Mr. David Tibe Maakuu*	Asst. Supervisor
Mr. E. A. Botchway	Ag. Manager, Textiles Division
Mr. Burns K. Obeng	Senior Accountant, Textiles Div.

(ロ) Management Development and Productivity Institute (MDPI)
（経営開発生産性研究所）

Mr. J. K. A. Wiredu	Ag. Deputy Director (Technical)
Mr. Sam Klu*	Principal Consultant

(ハ) Ghana Standards Board (GSB) （ガーナ規格委員会）

Dr. Lawrence Twum-Danso*	Director
Mr. Fabian Kodjoe Donkor	Deputy Director (Administration)
Mr. Anthony K. Annan	Asst. Secretary (Training)

Mr. Samuel Gyimasi	Public Relations Officer
Mr. Frederic Gordon MacBruce*	Senior Scientific Officer
Mrs. Charlotte Afi Ohene-Manu*	Senior Scientific Officer
Mrs. Kistina Biritwum*	Scientific Officer

(ニ) United Lamps Ltd. （ユナイテッド・ランプ社）

Mr. Abraham Adjei Dsane*	Managing Director
Mr. Thomas K. Tabiri	Quality Control Officer

(ホ) 日本大使館

有地一昭	特命全権大使
富樫治幸	三等書記官

(ヘ) JICA 事務所

山崎　昇	所　長