Presented at the

ASTM Committee B02
Centennial Celebration Event

Fontainebleau Hilton Resort
Miami Beach
November 5, 2002

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Certificate of Appreciation Issued to B02 Members

Introduction

On November 5, 2002, B02 held its Centennial Celebration, held in Miami Beach, to mark 100 years of successful and innovative standards development for Nonferrous Metals and Alloys.

The gala event included an Awards Ceremony and comments by ASTM Chairman of the Board Richard J. Schulte, ASTM President James A. Thomas, Committee B02 Chairman Paul K. Whitcraft, and Past B02 Chair and ASTM Board Member Gary M. Kralik. In addition, former B02 Secretary and ASTM Chairman of the Board Robert G. Redelfs spoke on his experiences and perspectives from a long and productive involvement in ASTM. B02 Honorary Chairman Richard F. Lynch presented a history of Committee B02 which forms the basis of this article. Assistance in many ways, including research in the ASTM Archives for this article, was provided our present Staff Manager Jeffrey Adkins and former Staff Manager Timothy S. Brooke. Special thanks is given to B02 member John Bringas, of Casti Publishing, who first suggested this article and who has been invaluable in scanning archival ASTM documents into electronic format for use in preparing this booklet.

In the course of putting together a history of B02, I researched the archives at Lehigh University and ASTM Headquarters and uncovered documents and history going back to 1910, including the structure and members of "B-2" and its early subcommittees, a copy of B02's first standard and the first standard issued by each subcommittee. We even have a photograph taken in 1910 of those attending the ASTM Annual Meeting. The assistance of Sharon Siegler, Engineering Librarian, Fairchild Mart Engineering Library, Lehigh University, was invaluable and she is thanked.

This historic information provides an intriguing look at the development and structuring of Committee B02 and ASTM itself in its early years. It also provides insight into the tremendous changes in ASTM and B02 over the years to accommodate growth, new areas of activity and the dramatically changed world in which we now live. Certainly this is a tribute to the people who make up ASTM and have served B02 over the past century. This booklet is dedicated to them.

An abbreviated version of B02's history was published in Standardization News. However, the B02 Executive Committee wanted each B02 member to have a copy of the complete booklet. This is it - all of the above plus photographs taken at the Centennial Celebration are complied in this B02 Centennial Celebration booklet.

We hope you enjoy it.

Rich Lynch,
B02 Centennial Celebration Chair

ASTM Committee B02
Centennial Celebration Program

Fontainebleau Hilton Resort
Miami Beach
November 5, 2002

Reception

Dinner

Awards Presentation

- B02 Award of Appreciation – B02 Awards Chairman Gary Kralik
- ASTM Award of Merit – ASTM Chairman Dick Schulte

Centennial Celebration Program

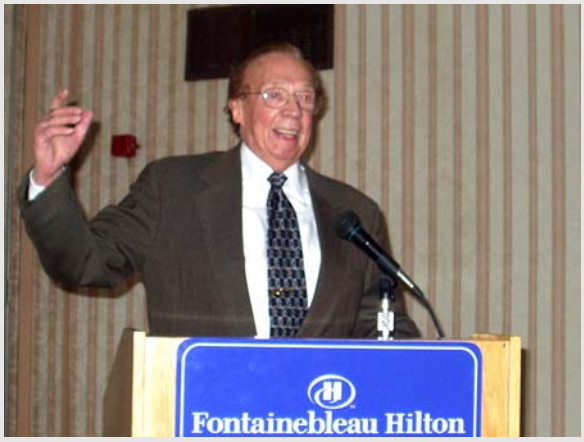
- Opening Comments – B02 Chairman Paul Whitcraft
- Remarks – ASTM Chairman Dick Schulte
- Remarks – ASTM President Jim Thomas
- History of Committee B02 – Honorary B02 Chairman Rich Lynch
- Comments on Events in B02 – Past B02 Chairman Gary Kralik
- Keynote Address – Past ASTM Chairman Bob Redelfs

1907 ASTM 10th Annual Meeting

2002 Committee B02 Centennial Celebration

Centennial Celebration Attendees

Adkins, Jeffrey	Johnson, Raymond	Potts, Bernard L.
Anderson, Graeme	Kralik, Gary M.	Redelfs, Robert G.
Badri, Narayan	Kuzmech, John M.	Riley, Mike
Bankowski, Richard S.	Long, Anthony	Savolainen, Arnold M.
Bringas, John E.	Lynch, Richard F.	Szafranski, Alan J.
Bauman, James	Mach, Tom	Whitcraft, Paul K.
Childs, William H.	Malmgreen, John P.	Worthington, Mary Ann
Coffee, Louis G.	Michel, James H	
Dick, Jim	Miyahara , Osamu	
Dugan, Barry P.	O'Donnell, Robert W.	
Dunn, John	Parkinson, Larry L.	
Gross, Douglas K.		
Janikowski, Daniel S.		

Committee B02 Centennial Celebration Awards Presentation Photographs	
Fontainebleau Hilton Resort Miami Beach November 5, 2002	
	INSERT PHOTO (from B02 file)
Robert G. Redelfs presenting Committee B02 Centennial Celebration keynote address.	Richard F. Lynch receiving the Gary M. Kralik Distinguished Service Award from Awards Chairman Gary M. Kralik.
	
Larry M. Parkinson receiving the B02 Committee Award of Appreciation from Awards Chair Gary M. Kralik.	Douglas K. Gross receiving the B02 Committee Award of Appreciation from Awards Chair Gary M. Kralik

IN APPRECIATION

to

Richard F. Lynch

An active member of Committee B02

on Nonferrous Metals and Alloys in this its 100th year.

For your participation, contribution, and dedication to the creation and improvement of Nonferrous Metal, Electrical Contact Materials & Test Methods, Electrical Resistance Heating Materials and Thermostat Metal standards.

Presented November 5, 2002

B02 Centennial Celebration
Miami Beach, Florida.

ASTM International Committee B02
on Nonferrous Metals and Alloys

_____	_____
Jeff Adkins, Staff Manager	Paul K. Whitcraft, Chairman

B02 Marks 100 Years of Nonferrous Metals & Alloys Standardization

by
Richard F. Lynch

Committee B02 on Nonferrous Metals and Alloys marked 100 years of successful and innovative standards writing with a Centennial Celebration, held November 5, 2002 in Miami Beach. The gala event included an Awards Ceremony and comments by ASTM Chairman of the Board Richard J. Schulte, ASTM President James A. Thomas, and Committee B02 Chairman Paul K. Whitcraft. In addition, former B02 Chairman and ASTM Board Member Gary M. Kralik, and former B02 Secretary and ASTM Chairman of the Board Robert G. Redelfs spoke on their experiences and perspectives from long involvement in ASTM. B02 Honorary Chairman Richard F. Lynch presented a history of Committee B02 which forms the basis of this article. Assistance in many ways, including research in the ASTM Archives for this article, was provided our present Staff Manager Jeffrey Adkins and former Staff Manager Timothy S. Brooke. Special thanks is given to B02 member John Bringas, of Casti Publishing, who first suggested this article and who has been invaluable in scanning archival ASTM documents into electronic format for use in preparing the presentation on which this article is based, and the B02 Centennial Celebration booklet.

Historic information provides an intriguing look at the development and structuring of Committee B02, and ASTM itself in its early years. It is interesting to realize that in many ways ASTM operates very much the same as it did in its first decade despite the many changes which have taken place. At the same time, it can be seen that ASTM and B02 have undergone tremendous changes over the years to accommodate growth, new areas of activity and the dramatically changed world in which we now live. Certainly this is a tribute to the people who make up ASTM. B02 is a committee which serves a mature industry with limited growth and scarce resources, yet its members continue to find new areas where standardization is critical to their industry and its future success.

Early History of ASTM and Committee B-2

Committee B-2 on Nonferrous Metals and Alloys was organized in 1902 largely to standardize nonferrous materials used by the railroad industry. [The preferred designation changed to B02 in the 1980's.] This was the same reason ASTM itself was created four years earlier. In fact, the history of B-2 provides a window into the way ASTM was originally organized and the changes that have taken place over the years in response to growth and changing times. There was a real need for ASTM when it was founded. Only 70 members made up ASTM in 1898, yet membership increased to 1280 by 1910.

The American Section of the International Association for Testing Materials (IATM), as our society was originally called, published its first standard for Steel Rails in 1899. The American Society for Testing Materials (ASTM) became a separate organization in 1902 at the fifth meeting of IATM. Research indicates that although a committee on Non-Ferrous Metals and Alloys was formed in 1902, it was not designated as B-2 until 1910. The first ASTM Year-Book was published in 1910 and provided a complete overview of activities for that year. December 21, 1909 marked the death of ASTM's founder and President, Dr. Charles B. Dudley, and the Year-Book recorded this event along with the passing of 7 other members. Publications that year consisted of Volume IX, containing 698 pages, and the yearly pamphlet of 130 pages. In addition seven official circulars of information were also issued in 1910. Certainly, ASTM was up and running.

Research indicates that although a committee on Non-Ferrous Metals and Alloys was formed in 1902, it did not receive the B-2 designation until

1910, when a more systematic scheme of enumerating Technical Committees was adopted. At that time, Technical Committees were designated by successive numerals affixed to letters representing the following classifications: A, Ferrous Metals; B, Non-Ferrous Metals; C, Cement and Clay Products; D, Miscellaneous Materials; and E. Miscellaneous Subjects. In accordance with this new arrangement, new technical committees were created which are listed by their original names and alphanumeric designations:

A-2 on Standard Specifications for Wrought Iron
A-9 on Alloy Steels
A-11 on Metallurgical Research in Steel
A-12 on Tests of Steel Structural Members
B-2 on Non-Ferrous Metals and Alloys
D-9 on Standard Tests of Insulating Materials
D-10 on Standardizing Explosives

In addition, the designation of Committee A-1 was changed from "On Standard Specifications for Iron and Steel" to "On Standard Specifications for Steel". It was further reported that Committees A-2, A-11 ands A-12 were in the "course of organization" whereas Committees A-9, B-2, D-9 and D-10 "have been organized". As reported in the ASTM "History Book" published in Standardization News in the Society's centennial year, by 1910 the organized committees were A-1 (1998), C-1 (1902), B-2 (1902), D-1 (1902), A-6 (1903), D-4 (1903), E-5 (1904), D-5 (1904), D-2 (1904), C-4 (1904), D-7 (1904), D-8 (1905), A-5 (1906), D-9 (1909), and B-1 (1909)[1].

It is not entirely clear to the writer why Committee B-2 appeared seven years before Committee B-1; perhaps a broad technical committee classification scheme had been developed but each committee was not formally recognized until it was fully organized and operating and standards were actually written. Another mystery deals with B 6, Standard Specification for Zinc, which is recognized as B-2's first standard[2]. The question is: why wasn't it called B 1? Standards B 1 through B 5 all deal with copper or copper alloys in various forms. Yet the 1911 Year-Book only lists four standards under "B. Non-Ferrous Metals". In the early days of ASTM these standards did not yet have fixed designations, but were listed in groupings by technical committee categories and numbered sequentially, starting with number 1. Standards were published separately, however, the number of a given standard changed yearly. For example, the earliest standard in the general non–ferrous metal area was "Standard Specifications for Hard-Drawn Copper Wire" which was "Proposed June 1909, Adopted August 16, 1909 (Vol. IX, PP. 311-318), First Revision adopted August 21, 1911 (Vol. XI, pp.-)". In the 1911 Year-Book this was standard specification number 24. The remaining three Non–Ferrous Metals and Alloys standards, including B 6 for Zinc, were adopted in 1911. This is one indication which could imply an earlier generic non-ferrous metals committee existed and developed standards which subsequently fell under the jurisdiction of Committee B-1 on Standard Specifications for Hard-Drawn Copper Wire (later Electrical Conductors) and B-2. It is likely at a letter date, when standards were given permanent designations, the first five B designations were given to copper and copper alloy standards and then B 6 was designated. By 1914, B 6 was the permanent designation attached to the standard. These are some of the mysteries of B-2's past. (A few of us occasionally talk about this but do not go to the extreme of staying up at night worrying about it.)

The 1911 by-laws note that the society should consist of members and junior members, with members being not less than thirty years of age. The officers were President, Vice-President, Secretary and Treasurer but the same person served as Secretary and Treasurer and received a salary. The Executive Committee consisted of the officers, the last Past President and seven members, elected by letter ballot for two staggered two year terms. The President was the ex officio nominee for the American Member of the Council of the International Association. The society met annually. A proposed standard specification had to be presented at the annual meeting where it could be amended by a majority of those voting. Approval by two-thirds of those voting was required to refer it to letter ballot of the Society and a two-thirds

affirmative vote on the letter ballot was requited for adoption. Annual dues were $10.00 for Members and $5.00 for Junior Members, payable in advance. Those holding membership also in the International Association for Testing Materials paid an additional annual sum of $2.00.

A Price List was published in the 1910 Year-Book which stated "The price of the above Standard Specifications is 25 cents each; 20 cents in lots of 10 or more, whether of the same or of different specifications; and 15 cents in lots of twenty-five or more of a single specification." Members of the Society received a discounted price of 15 cents per specification or $2.50 for a complete set. It is noted that "Since the numeric designation of each Standard Specification is subject to change from year to year, specifications should be ordered by title and not by number. "The price of the Year-Book in cloth binding containing all of these Standard Specifications in their latest revised form is $5.00. Libraries, publishers and book-dealers are allowed a discount of 20 per cent."

Evolution of Committee B-2

In 1910, B-2 had a Chairman and a total of 19 members. There were individual members and corporate members with a representative. In 1911, there were four Vice-Chairmen as well as the Chairman. The 27 Members were listed as Non-Producers and Producers, with 12 Non-Producer Members and 15 Producer members. However, "the members of Committee B-2, classified as Producers, stand in the relation of Producer for certain products, and in that of Non-Producer to other products within the province of the Committee." In 1935 there were a total of 104 members in B-2, with 49 members, 31 Consumer and 24 General Interest members. Officers included an Honorary Chairman, Chairman, eight Vice-Chairmen and a Secretary. By 1935, there was a Coordinating Committee on Non-Ferrous Metals and Alloys which consisted of two members from each of the B group of committees of the society which includes B-1, B-2, B-3, B-4, B-5, B-6 and B-7. Its principal function was "the coordinating of the activities of the committees in dealing with non-ferrous metals and alloys, especially matters of scope and jurisdiction that may arise in the activities of these committees." It also was to "act with and advise the several administrative committees of the society in such matters as research, standardization and the preparation of the technical programs in the field of non-ferrous metals and alloys."

In 1913 four subcommittees were formed in B-2. Three more subcommittees were added in 1917, three more in 1920, two more in 1923, one in 1926, two in 1927 and another in 1933. Subcommittees were designated by a Roman numeral and a name. These early subcommittees focused on pure metals, wrought and cast metals and alloys, tin, lead and zinc, railroad equipment, methods of sampling and chemical analysis, aluminum, methods of testing, and the nomenclature of metals and alloys. In subsequent years some subcommittees were reorganized while new ones were added for lead pipe, metallic fluxes and deoxidizers, strip zinc, gold and silver solders, and die cast metals and alloys. By 1933 there had been 16 subcommittees, as listed in Table 1. The names of these subcommittees reflected some current subcommittee names but also others which no longer reflect B-2 activities such as "Plates, Tubes and Staybolts for Locomotives". There was a major re-organization in 1936 which reduced the number of subcommittees to 10. Some subcommittees were consolidated, some discontinued and others had left B-2 to become part of other newly formed B committees.

Over quite an extensive period of time, some standards were initially issued as tentative standards to provide a forum for critical review before final adoption as a permanent standard. In the case of B 23-18T, Tentative Specifications for White Metal Bearing Alloys (Known Commercially as "Babbitt Metal"), it is noted that "Criticism of these Tentative Specifications are solicited and should be directed, preferably before January 1, 1920, to Mr. William Campbell, Chairman of Committee B-2 on Non-Ferrous Metals and Alloys, Columbia University, New York City." Later, in the case of B 413-64T, Tentative Specification for 999.0 Grade Refined Silver, it

is noted "This Tentative Specification has been approved by the sponsoring committee and accepted by the Society in accordance with established procedures, for use pending adoption as standard. Suggestions for revisions should be addressed to the Society at 1916 Race St., Philadelphia 3, PA."

During the Second World War, B-2 participated in the development and rapid issue of Emergency Standards (ES). Some such B-2 standards, for example, had lower than normal tin content in certain alloys to deal with war time shortages of tin.

Subsequent reorganizations took place, with subcommittees formed on coated metals, nickel and high nickel alloys, precious metals and alloys, and miscellaneous refined metals. By 1950 the structure of B-2 more closely reflected that of today. There were now eight subcommittees and a total of 118 members. There was also a Joint Coordinating Committee because the scopes of Committees B-2, A-1, A-19, and B-4 "cannot be definitely limited" and it was necessary to "decide questions of jurisdiction". Sometime between 1950 and 1960, the term "Non-Ferrous" in B-2's name changed to "Nonferrous" in ASTM publications.

In 1961, our Society was renamed American Society for Testing and Materials; still ASTM. Over the years, subcommittees expanded their activities, symposiums were held on various subjects including "newer metals", STP's were published, and joint activities took place with other ASTM committees. B-2 took part in a working relationship with the American National Standards Institute (ANSI), with appropriate standards approved as American National Standards. Likewise, certain ASTM standards were approved for use by agencies of the Department of Defense. By 1965, additional subcommittees had been added reflecting new interest in Less Common Metals and Alloys, Titanium and Titanium Alloys, and Zirconium and Hafnium. By 1986, an Editorial subcommittee had been added, as had the USA TAG to ISO/TC 155 on Nickel and Nickel Alloys. By this time, subcommittees were named in the current alpha-numeric manner. In the 1980's there was a "soft" change in main

Table 1
History of Committee B02
Old Subcommittee Structure

Subcommittee I Pure Metals in Ingot Form, 1913-1935 1928 B05 on Copper and Copper Alloys Formed 1936 Renamed: Refined Copper	**Subcommittee VI** Non-Ferrous Alloys for Railroad Equipment, 1917-1930 1936 Renamed: Coated Metals	**Subcommittee X** Methods of Testing, 1920-1935 1936 Discontinued
Subcommittee II Wrought Metals and Alloys, 1913-1928 1929 Became Subcommittee I of Committee B05 1936 Renamed: Refined Lead, Tin, Antimony, and Bismuth	**Subcommittee VII** Methods of Sampling and Chemical Analysis, 1917-1935 1935 Became Committee E03 on Chemical Analysis of Refined Metals 1936 Renamed: Nickel and High Nickel Alloys, Cast and Wrought	**Subcommittee XI** Lead Pipe, 1923-1925 1926 Discontinued
Subcommittee III Sand-Cast Metals and Alloys, 1913-1929 1929 Became Subcommittee II of Committee B05 1936 Renamed: White Metal Alloys	**Subcommittee VIII** Aluminum Alloys, Cast and Wrought, 1920-1924 1924-1929 Renamed: Light Metals and Alloys 1928 B07 on Light Metals and Alloys Formed 1929 Discontinued 1936 Renamed: Miscellaneous Refined Metals and Alloys	**Subcommittee XII** Metallic Fluxes and Deoxidizers, 1923-1935 1936 Discontinued
Subcommittee IV White Metals - Tin, Lead, Zinc, 1913-1935 1936 Renamed: Refined Zinc and Wrought Zinc	**Subcommittee IX** Nomenclature of Metals and Alloys, 1920-1935 1936 Discontinued	**Subcommittee XIII** Strip Zinc, 1926-1935 1935 Discontinued
Subcommittee V Plates, Tubes and Staybolts for Locomotives, 1917-1923 1923 Discontinued 1936 Renamed: Precious Metals and Alloys		**Subcommittee XIV** Silver and Gold Solders, 1927-1929 1929-1935 Renamed: Precious Metals and Alloys 1936 Became Subcommittee V
		Subcommittee XV Die Cast Metals and Alloys, 1927-1929 1930 Became Committee B-6 on Die Cast Metals and Alloys
		Subcommittee XVI Coated Metals, 1933-1935 1936 Became Subcommittee VI

committee names such that B-2 became B02 and was printed as such in the 1986 Directory.

Over the years, B-2 has spawned quite a number of other committees including: B-5 on Copper and Copper Alloys, B-6 on Die-Cast Metals and Alloys and Alloys, B-7 on Light Metals and Alloys, B-10 on Reactive and Refractory Metals, E-3 on Chemical Analysis of Refined Metals, and G-1 on Corrosion (initially as B-3 on Corrosion of Non-Ferrous Metals and Alloys) and contributed to the development of other committees and activities. Former Subcommittee B02.01 on Refined Copper transferred to Committee B05 in 1987, to better serve the interests of members from the copper industry. This was quite a setback to B02 as many members and key leadership were lost but fortunately the Committee was able to regroup and recover. Standards were added in 1990 when Committee B06 merged into B02, B05 and B07, and Subcommittees B02.02 and B02.04 assumed jurisdiction of additional standards and gained some new members.

B-2 has made significant contributions to ASTM practices. For many years, the annual business meeting was held in Atlantic City every other year or every third year. However, ASTM was growing to the point at which the limited size of the hotels caused the technical committees to be spread up and down the Boardwalk, some quite a distance from meeting headquarters. Moreover, Atlantic City was not accessible to most members by direct flight. B02 reported their preference to meet elsewhere and in 1971 Atlantic City was dropped as a regularly-scheduled location for ASTM meetings.

An outstanding contribution B-2 made to voluntary consensus standards was the initiation of the Unified Number System (UNS) for Metals and Alloys. In the 1960's, Subcommittee VII was finding it difficult to title specifications because proprietary names were not allowed and the use of the chemical names of the elements did not allow a sufficient number of combinations to distinguish between the alloys. The B-2 Staff Manager, Harold M. Cobb, spearheaded the effort to develop a new method to identify all alloys. This effort took the better part of a decade and resulted in the publication of SAE/ASTM Recommended Practice for Numbering Metals and Alloys which was first published in 1974.

In 1997, B02 had four product subcommittees: B02.02 on Refined Lead, Tin, Antimony and Their Alloys, B02.04 on Zinc and Cadmium, B02.05 on Precious Metals, and B02.07 on Nickel, Cobalt and Alloys Containing Nickel or Cobalt or Both as Principal Constituents". In addition there were ISO related Subcommittees B02.92, the US TAG to ISO/TC 155 on Nickel and Nickel Alloys; B02.95 on International Zinc Standards; and B02.95.02, the US TAG to ISO/TC 18 on Zinc and Zinc Alloys. There were also four administrative subcommittees: B02.90, Executive; B02.91, Editorial and Terminology; B02.93, Awards; and B02.94, Long Range Planning.

In 1998, a significant merger took place with Committee B04 on Materials for Thermostats, Electrical Heating and Resistance, Contacts and Connectors. B04 realized that declining member activity required a change and sought out possible merger partners. Investigation revealed there was a strong synergy between the precious metal alloy contact material activity in B04 and precious metals efforts in B02. In addition, there was some connection between nickel and cobalt alloys in B02 and materials in B04. Accordingly, B02.05 on Precious Metals and B04.02 on Electrical Contact Materials were merged to produce a strong joined B02.05 subcommittee. The former B4.02 Chairman became the new B02.05 Chairman and the former B02.05 Chairman became Secretary. Shortly after, the Electrical Resistance Heating Materials and Thermostat Metals subcommittees merged into B02.10 on Thermostat Metals and Electrical Resistance Heating Materials, with the former Chairman B04.01 assuming the Chair. The Chairman of B02 became Chairman of the merged B02 and the Chairman of B04 became Co-Chairman and later First Vice-Chairman. The current B02 subcommittee structure is shown in Table 2. In 2001, our Society was renamed ASTM International, reflecting the current global nature of standardization and

ASTM International's large role in worldwide standards writing.

Table 2
Today's Subcommittees of Committee B02 and Chairmen

B02.02 Refined Lead, Tin, Antimony, and Their Alloys
Gross, Douglas K.

B02.04 Zinc and Cadmium
Lynch, Richard E.

B02.05 Precious Metals and Electrical Contact Materials
Kuzmech, John M.

B02.07 Refined Nickel and Cobalt and Their Alloys
Whitcraft, Paul K

B02.10 Thermostat Metal and Electrical Resistance Heating Materials
Perricci, Michael A.

B02.11 Electrical Contact Test Methods
Sproles, Edward S.

B02.90 Executive
Whitcraft, Paul K.

B02.91 Terminology
Malmgreen, John P.

B02.92 US TAG ISO/TC 155 on Nickel and Nickel Alloys
Whitcraft, Paul K.

B02.93 Awards
Kralik, Gary M.

B02.94 Long Range Planning
Lynch, Richard P.

B02.95 International Zinc Standards
Gross, Douglas K.

B02.95.01 US TAG to ISO TC18 on Zinc and Zinc Alloys
Malmgreen, John P.

Membership of B02 is currently at a record high level, with over 200 members. Membership is shown by decade in Table 3. A review indicates first the strong initial growth cited earlier. Membership reached 100 by 1930 and then grew more slowly until the 1950's with an increase to 145 members in 1960. Membership then leveled off due to the exodus of some members into newly formed Committee B-10 but reached 170 members by 1980. However, with the loss of B02.01 to B05 in the 1987, membership was back down to less than 150 members in 1990. Fortunately, continued growth among some former B02 subcommittees and the merger with B04 has increased membership to 213 members in 2002. These 213 members now maintain and revise 235 separate standards and continue to create new ones, as additional needs are identified.

Table 3
Committee B02 Membership By Decade

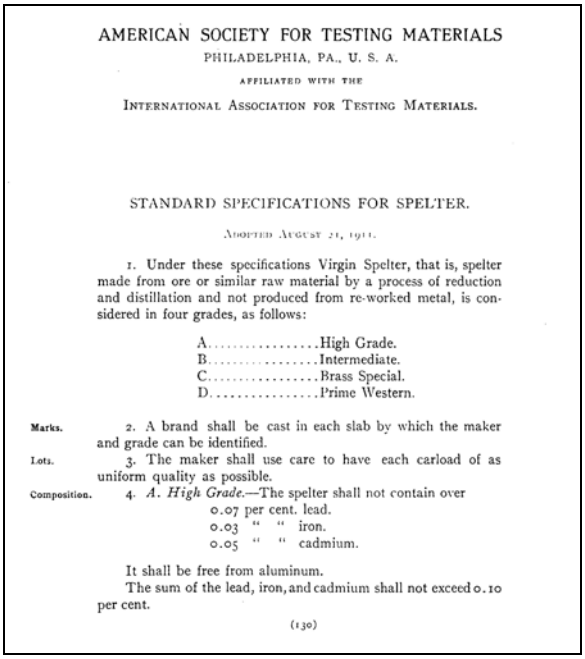
Year	Members
1910	19
1920	70
1930	104
1940	106
1950	118
1960	145
1970	138
1980	171
1990	143
2002	213

B02's First Standard

It took some time to unearth a copy of B02's first standard, B 6, Standard Specification for Zinc. It is noted on the current revision of B 6-00 that it was originally issued as B 6-11. Unfortunately, a call to ASTM headquarters revealed that ASTM does not keep old versions of standards on file. A trip to the Fairchild Mart Engineering Library at Lehigh University and the assistance of the Engineering Librarian, Sharon Siegler, initially failed to locate a copy. The search now became a quest for the Holy Grail of B02. No ASTM Annual Book of Standards could be found going as far back as 1911. Finally, after several hours of searching, a chance discovery in a separate part of the library stacks revealed the existence of ASTM Year-Books going back to 1910. Transactions of the American Society for Testing and Materials were issued in intervening years. An ASTM Directory is now published. It turns out in the early years, all standards were published in the Year-Book, along with most of the other happenings of ASTM. The initial version of B 6, Figure 1, was found in the 1911 Year-Book.

Now it becomes interesting! We have "known" for years that B 6, Standard Specification for Zinc, was ASTM Committee B-2's first standard specification. However, looking at the first

version one cannot find the terms Zinc, B 6, nor Committee B-2 mentioned.



AMERICAN SOCIETY FOR TESTING MATERIALS

PHILADELPHIA, PA., U. S. A.

AFFILIATED WITH THE

INTERNATIONAL ASSOCIATION FOR TESTING MATERIALS.

STANDARD SPECIFICATIONS FOR SPELTER.

ADOPTED AUGUST 21, 1911.

1. Under these specifications Virgin Spelter, that is, spelter made from ore or similar raw material by a process of reduction and distillation and not produced from re-worked metal, is considered in four grades, as follows:

A.....High Grade.
B.....Intermediate.
C.....Brass Special.
D.....Prime Western.

Marks. 2. A brand shall be cast in each slab by which the maker and grade can be identified.

Lots. 3. The maker shall use care to have each carload of as uniform quality as possible.

Composition. 4. *A. High Grade.*—The spelter shall not contain over
0.07 per cent. lead.
0.03 " " iron.
0.05 " " cadmium.

It shall be free from aluminum.

The sum of the lead, iron, and cadmium shall not exceed 0.10 per cent.

(130)

Figure 1 – The Initial version of B 6.

The document is called Standard Specifications for Spelter, with no numeric or alpha-numeric designation and no committee reference. It is stated that the standard was adopted August 21, 1911 but we need to look elsewhere in the 1911 Year-Book to learn that it was proposed in June 1911, and was published in Vol., XI. At the top of the first page, is printed "American Society for Testing Materials, Philadelphia, PA., U.S.A., affiliated with the International Association for Testing Materials". Today spelter is now a little used term meaning zinc cast in slabs for commercial use or crude zinc obtained in smelting zinc ores. Actually, by today's standards, both definitions apply. There were four grades of zinc in B 6-11, with High Grade and Prime Western still existing in B 6 today. The other two grades were Intermediate and Brass Special. A fifth grade, Selected, was introduced in B 6-18 while Special High Grade, today's highest purity grade was introduced in B 6-33. It was further stated in B 6-33 that for slush castings and certain zinc-aluminum alloys, a special grade of slab zinc (spelter) may be required, as noted in "Spelter: Its Grades and Uses," as published in Appendix I to the report of Committees B-2 on Non-Ferrous Metals and Alloys, Proceedings, Am. So. Testing Mats., Vol. XVI, Part I, p., 183 (1916). The Selected grade was eliminated in B 6-62T while Intermediate and Brass Special grades were eliminated in B 6-77. Today B 6-00 contains three grades including two that were in B 6-11. In 1911, High Grade was the purest zinc grade, with lead, iron and cadmium impurities controlled individually and in aggregate not exceeding 0.10%. It was also to be free of aluminum. This was 99.90% pure zinc. Today High Grade still has a 99.90% minimum zinc content, and controlled impurity levels for lead, iron, cadmium and aluminum, with total non-zinc being 0.10% maximum. It turns out our predecessors got it exactly right.

It appears there was a real need for the standardization of zinc grades during the start of the First World War. Information on the zinc industry in this era was obtained from the Archives of the former Zinc Institute, now part of the Special Collections of Lehigh University and accessed through the assistance of Director Philip Metzer. Specifically, the report of Organizational Proceedings of the American Zinc Institute in 1918 contains a Table entitled Spelter Classifications, 1911-1918, compiled by C. E. Siebenthal of the U. S. Geological Survey, Department of the Interior. In this summary of spelter grades, compositions are grouped into four categories: A, B, C and D. Each category contains the composition specified in ASTM standard specifications (1911, 1917 or 1918), U.S. Army Ordnance Department Specifications (1918), Navy Department (1913), and/or New York Metal Exchange Specifications, American Metal Market (1916). This analysis indicates specifications from various entities were in competition. It appears that ASTM won out and B 6 became the standard in the U. S. and elsewhere. This situation may also explain why zinc is the only non-ferrous metal besides copper to receive the earliest attention of B-2. B 6 is the only one of the first 17 B-2 standards not specifying copper or a copper alloy.

The Standard Specifications for Spelter of 1911 in many ways established the pattern for all B-2 standards to follow. The first paragraph

explains what is covered, as we would today in the Scope section. Further subsections are designated by subheadings printed in the margins and these are: Marks, Lots, Composition, Claims, Mill Treatment, Investigation of Claims and Settlement of Claims. It is interesting to note how many concepts and even phrases which we find in B-2 standards today are contained in this original standard. One that has been discussed over the years reads "The slabs shall be reasonably free from surface corrosion or adhering foreign matter." Now we know where it came from.

Earliest Standard in Each Subcommittee

To give a sense of historic perspective to all B02 members, the original specification for each B02 subcommittees (see Appendix X?) and area of emphasis within subcommittees was located and identified by original title and year of issue, as follows:

B02.02, Lead Tin Antimony and Their Alloys: B 23-18T, Tentative Specifications for White Metal Bearing Alloys (Known Commercially as "Babbitt Metal")

B02.04, Zinc and Cadmium: B 6-11, Standard Specifications for Spelter

B02.05, Precious Metals: B 413 - 64T, Tentative Specification for 999.0 Grade Refined Silver

B02.05, Electrical Contact Materials: B 476-68, Standard Specification for General Requirements for Wrought Precious Metal Electrical Contact Materials

B02.07, Refined Nickel, Cobalt and Their Alloys: B 39-22, Standard Specification for Nickel

B02.10, Electrical Resistance Heating Material Standard: B 63-26T, Tentative Method of Test for Resistivity of Metallic Materials for Electrical Heating

B02.10, Thermostat Metals: B 106-40, Standard Methods for Testing Thermostat Metals

B02.11, Electrical Contact Test Methods: B 539-70, Standard Methods for Measuring Contact Resistance of Electrical Connections (Static Contacts)

Member Recognition

B02 has been extremely fortunate to benefit from strong leadership over the years. This leadership has come in the form of main committee officers, members-at-large, subcommittee officers and those who have been the leaders and technical experts within subcommittees and task groups. Unfortunately, it is difficult to identify and recognize all those who have contributed. Nevertheless, those individuals who have held certain offices can be recognized. A listing of those who have served in B02 leadership positions is found in Table 4.

In addition, B02 has contributed to the leadership of our Society. In recent years, we have been honored to have two B02 members become ASTM Chairman of the ASTM Board of Directors: Robert G. Redelfs (1986) and Arthur Cohen (199X). In addition, Gary M. Kralik served on the Board of Directors (1996-98).

Recognition for exemplary service to B02 and ASTM are recognized by peer awards given for outstanding contributions. Committee B02 has established two awards to recognize contributions by our members in addition to the Society Awards. Recipients are found in Table 5.

The Award of Appreciation was established in 1998 to show appreciation for short term accomplishment, enthusiastic contribution or an activity distinct from that appropriate for the Committee B02 Gary M. Kralik Distinguished Service Award or an Award of Merit Nomination.

The Committee B02 Distinguished Service Award was established in 1992 to recognize exceptional service to Committee B02, one of its subcommittees or one of its activities. The award is administered by the Awards Subcommittee of Committee B02 on Nonferrous

Metals and Alloys. It is a Society recognized award. In 2001, it was renamed the Committee B02 Gary M. Kralik Distinguished Service Award in honor of his contributions to B02.

The Award of Merit is ASTM's highest honor. The recipient also becomes recipient an ASTM Fellow. B02 has been fortunate to have a significant number of its own qualify for this award over the years. Some B02 members were nominated for the award by other committees and as such are not listed.

The Honorary Member Award, which predated the W. T. Cavanaugh Memorial Award, was a highly prestigious Society award which was presented to five of B02 members.

Table 4a
B02 Officers, 1902-2002

Chairman
1910-1934 William Campbell
1935-1939 R. F. Mehl
1939-1946 E. E. Thum
1946-1960 B. W. Gonser
1940-1964 Alfred Bornemann
1964-1968 Gerhard Derge
1968-1970 R. W. Heckel
1970-1976 E. D. Verink
1976-1982 William M. Mueller
1982-1986 Marshall V. Yokelson
1986-1988 Horace Pops
1988-1989 Jerome F. Smith
1990-1995 Gary M. Kralik
1996-2001 Richard F. Lynch
2002- Paul K. Whitcraft

Co-Chairman
1998-1999 John M. Kuzmech

Producer Vice Chairman
1975-1982 H. H. Stout
1982-1986 Carl DiMartini
1986-1992 J. W. Tackett
1993-1994 R. David Prengaman
1994-1996 Serge Belisle
2000- John M. Kuzmech

First Vice Chairman
1997-1999 Serge Belisle
2000- John M. Kuzmech

User Vice Chairman
1975-1984 R. J. Cox
1984-1985 Mitchell Silverstein
1986-1990 Gary M. Kralik
1991-1992 B. Stricka
1993-1995 R. S. Humphrey
1996 John W. Passmore

Second Vice Chairman
1997 John W. Passmore
1998- Barry P. Dugan

Honorary Chairman
1979-1988 Bruce W. Gonser
1996-2001 Gary M. Kralik
2002- Richard F. Lynch

Secretary
1920-1928 P. E. Marcia
1928-1939 E. E. Thum
1939-1944 C. E. Swartz
1944-1955 G. R. LeFevre
1955-1957 W. A. Mudge
1957-1960 A. M. Bounds
1960-1964 C. K. Conard
1964-1970 R. G. Redelfs
1970-1973 D. E. DeBord
1973-1980 B. B. Bitzer
1980-1982 Andrew W. Blackwood
1982-1986 Gary M. Kralik
1986-1988 Richard F. Lynch
1988-1992 R. David Prengaman
1992-1997 Barry M. Dugan
1998 Ajit Bhambri
1999 Louis G. Coffee

Recording Secretary
2000 Larry L. Parkinson
2001- James H. Michel

Membership Secretary
1997-2001 Dennis Rahoi
2002- Richard A. Lamb

Table 4b
B04 Officers, 1925-1998

Chairman
1926-1946 Dean Harvey
1946-1948 J. H. Harsch
1948-1955 S. A. Standing
1955-1964 E. I. Shobert, II
1964-1965 Leonard Mayerson
1965-1966 U. U. Savolainen
1966-1972 E. W. Glossbrenne
1972-1976 W. M. Abbott
1976-1979 William M. Muelle
1979-1982 R. D. Dardelli
1982-1984 J. S. Setchell
1984-1988 Stephen R. Cole
1988-1994 Dexter A. Jeannotte
1994-1996 Edward S. Sprole
1996-1998 John M. Kuzmech

First Vice Chairman
1961-1964 Leonard Mayerson
1964-1972 E. I. Shobert, II
1972-1976 A. C. Snowdon
1976-1979 R. D. Mardell
1979-1980 L. F. Neely
1980-1981 J. S. Setchell
1982-1983 K. E. Pitney, Jr.
1983-1984 Stephen R. Cole
1984-1988 Alan F. Campbell
1988-1994 Edward S. Sproles
1994-1998 Stephen R. Cole
1998 Simeon J. Krumbein

Second Vice Chairman
1990-1994 Stephen R. Cole
1994-1996 John M. Kuzmech
1996-1998 Milenko Braunovic

Secretary
1926-1950 F. E. Bash
1950-1955 Stanton Umbreit
1955-1963 C. K. Strobel
1963-1972 R. M. Sears
1972-1976 K. E. Pitney, Jr.
1976-1979 J. S. Setchell
1979-1984 Alan F. Campbell
1984-1988 Edward S. Sproles
1988-1992 Richard Neaves
1992-1994 John M. Kuzmech
1994-1996 Simeon J. Krumbein
1997-1998 Edward S. Sproles

Membership Secretary
1979-1982 K. E. Pitney, Jr.
1982-1983 Stephen R. Cole
1983-1988 Dexter A. Jeannotte
1988-1990 Alan F. Campbell
1990-1992 John M. Kuzmech
1992-1994 Simeon J. Krumbein
1994-1996 Dexter O'Brien
1996-1997 Edward S. Sproles
1998 Michael Perricci

Staff Managers

B02 has been fortunate to have many outstanding staff managers over the years. Those members who work closely with ASTM headquarters recognize the effective and professional assistance staff provides to ASTM volunteers. Recent B02 staff managers are listed in Table 6.

B02's Future

From its earliest years to the present, B02 has demonstrated the ability to reinvent itself to meet the challenges and opportunities called for by changing times. Fortunately, as B02 greets the start of its second century, it is a strong committee comprised of over 200 members, and the largest of ASTM's "B" committees.

B02 has a wonderful record of having been where the action is. From its beginning in 1902, the members of B02 have consistently identified areas where new standardization activities were required and moved to fill the void. When the first subcommittees were formed in 1913, they focused on pure metals, wrought and cast metals and alloys, and tin, lead and zinc.

Over the years, new subcommittees were added, subcommittees were reorganized and expanded their activities, new ASTM committees grew out of B-2, symposiums were held on various subjects including "newer metals", STP's were published, and liaison activities took place with other ASTM committees. B02 took part working with the American National Standards Institute (ANSI), with certain standards approved as American National Standards. Likewise, appropriate ASTM standards have been approved for use by agencies of the Department of Defense.

B02 has also been able to deal with changes resulting from being involved in a mature industry and the regrouping and downsizing that has necessitated. From a perspective as Chairman of Subcommittee B02.04 on Zinc and Cadmium, it is possible to illustrate a number of ways in which B02 has increased its participation and membership by creating new standards relevant to today's marketplace.

Table 5
B02 Award Recipients

Honorary Member
1937 G. W. Thompson
1966 Bruce W. Gonser
1971 James S. Vanick
1978 Robert G. Redelfs
1980 H. Howard Stout, Jr.

Award of Merit
1953 E. I. Shobert, II*
1954 Ernest S. Thum
1956 Bruce W. Gonser
1959 George O. Hiers
1959 Charles K. Strobel*
1960 Stanton Umbreit*
1962 William A. Milligan
1964 Sidney A. Standing*
1965 Stanislaus Skowronski
1967 G. Howard LeFevre
1969 Audrey M. Bounds
1970 Robert G. Redelfs
1973 Ray M. Sears*
1973 Harry H. Stout
1979 Unto U. Savolainen*
1980 Kenneth Pitney*
1981 J. William Claypool
1982 Duane C. Carlson
1983 Edward W. Bitzer
1983 Edgar W. Glossbrenner*
1985 Marshall V. Yokelson
1987 Joseph W. Tackett
1990 Stephen R. Cole*
1990 Richard F. Lynch
1994 Dexter A. Jeannette*
1996 Barry P. Dugan
1996 Edward S. Sproles*
2002 John M. Kuzmech
2002 Paul K. Whitcraft
* Nominated by Committee B04

Distinguished Service Award
1992 Harley Kurtz
1994 Joseph W. Tackett
1996 Gary Kralik
1997 Robert G. Redelfs
1998 R. David Prengaman

Committee B02 Gary M. Kralik Award Distinguished Service
2001 Arnold Savolainen
2001 Narendra Zaveri
2001 Louis G. Coffee
2002 Richard F. Lynch

Award of Appreciation
1998 John Passmore
2001 P. Douglas Brackman
2001 Mary Ann Worthington
2002 Jesse Aronstein
2002 Douglas K. Gross
2002 Larry L. Parkinson
2002 Michael Perricci
2002 Edward S. Sproles

In the mid 1980's, it was recognized there were traditional zinc specialty casting alloys as well as new alloys for which no common specifications existed; a void which ASTM has since filled. In 1990, Committee B06 on Die-Cast Metals and Alloys merged into B02, B05 and B07 because of reduced participation. This situation provided an opportunity to review and consolidate some zinc casting specifications. It was later realized there was no common color code marking system to identify zinc

casting alloy ingots; rather each customer had their own system, sometimes creating confusion. A new standard was developed which has since been adopted by the industry. Also around 1990, it was realized continuous sheet galvanizing lines were increasingly using continuous galvanizing grade zinc alloys in place of commercially pure zinc plus alloy additions, to achieve better product quality and line control. After extensive cooperative efforts with Subcommittee A05.11 on Metallic-Coated Steel Sheet Specifications, a new standard was developed, which has recently been substantially revised to accommodate subsequent industry advances. Since then, other standards have been developed for this industry sector including a standard for a separate color code used in system for zinc ingot galvanizing. Other new areas of recent activity have been in zinc wire for thermal spraying, zinc alloy solder wire, and standardization of zinc ingot configurations. Consensus on an international level is now taking place through ISO activities in Technical Committee 18 on Zinc and Zinc Alloys, with a stronger recognition of the benefit of existing ASTM standards in other parts of the globe. As a result of all these efforts, the number of standards under the jurisdiction of B02.04 has risen from five standards in 1980, to 12 in 1990, to 19 in 2002, with two standards discontinued due to consolidation.

Change of a different type took place after the successful merger with Committee B04 in 1998. Declining member activity in certain areas led to the merger of some subcommittees resulting in fewer subcommittees but stronger subcommittee activity. Most B02 subcommittees meet semi-annually at ASTM committee week. However, some find it appropriate to meet only once a year. Other subcommittees are experimenting successfully with meetings at ASTM Headquarters, with teleconferencing enabling those not able to travel to still take part.

Table 6
Staff Managers

B04 Staff Managers
1967-1988 James A. Dwyer
1988-1990 Jennifer L. Holliday
1991-1992 Carolyn J. Thompson
1993-1997 Leigh Ann (Sellstedt) Kelly
1998 Cathryna Blackwell
B02 Staff Managers
1967-1971 Harold M. Cobb
1972-1981 E. V. Pineda
1982 Thomas O'Toole
1983 P. G. Brown
1984-1985 Robert S. Waller
1986-1987 Thomas F. Thompson
1988- Bruce Klotz
1989-1996 Rose (Dougherty) Tomasello
1996-2000 Timothy S. Brooke
2001- Jeffrey Adkins

If past history is a guide, in its second century Committee B02 will continue to find ways to expand into new areas and carry out its standardization mandate. This effort could result in further changes to maximize available resources and manage responsibilities in a cost effective manner. It is not clear what the future will bring but it could well include further mergers of ASTM "B" committees down the road to spread out the administrative work load and allow members to concentrate more effectively on technical matters. Certainly, the move ASTM has championed toward electronic information transfer and on-line standardization activities will be a part of this different future. But, as always, the key will be to discover the best ways for committed people to work together effectively toward our common standardization objectives.

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1 "A Century of Progress ASTM: 1898-1998", ASTM Standardization News, January 1998.

2 “Heritage Collection – Standards B 6, B 49, B 115 and D 4000”, ASTM Standardization News, August 1998.

Figures:
Figure 1 – B 6-11

Tables:
Table 1 – History of Committee B02
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Table 4a – B02 Officers, 1902-2002
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Table 5 – Award Recipients
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Standardization Is a Serious Business and What We Do Can Have Far Reaching and Long Lasting Ramifications

Opening Remarks
Richard F. Lynch
Honorary B02 Chairman

Let me give an example. The Saturn Rocket was designed as the pride of the US Space Program – its raw power allowed us to launch massive objects far into space. Let us consider a critical design parameter – the outer diameter of the Saturn's Booster Rockets. They were made by Thiokol at a plant located in the state of Utah. To get to Cape Kennedy the boosters had to pass through a railroad tunnel, the size of which was fixed by the width of a standard railroad car, based on the standard distance between railroad track rails of 4 feet 8 ½ inches.

Why 4 feet 8 ½ inches? Because the US railroad system was based on the British railway system which had a track separation of 4 feet 8 ½ inches.

Why was that? Because early tram lines in England used a track with a separation of 4 feet 8 ½ inches. It turns out that the tram lines used the same separation between their wheels as did a horse drawn wagon.

Why did wagons have a 4 feet 8 ½ inches distance between their wheels? That was so they would fit into the ruts in the roads – roads were which originally built by the Romans. It turns out that Roman roads had ruts in them 4 feet 8 ½ inches apart because that was the distance between the wheels of a Roman Chariot.

Why did Roman Chariots have a 4 feet 8 ½ inch distance between the wheels? That was the distance needed to span the back end of a horse.

Thus the inescapable reality is that the specification determining the size of the US Space Program's Saturn booster rockets was determined by the back end of a horse.

Let's hope we do better in our standardization activities.

B02 Gary M. Kralik Distinguished Service Award Presentation

Gary M. Kralik
B02.93 Awards Subcommittee Chair

In 1992 Mr. Harley Kurtz, secretary of Subcommittee 7, was retiring. His last meeting was to be that November in Miami at the Hyatt Regency.

Joe Tackett, subcommittee chairman, wanted to recognize Harley for his long and faithful service. We decided this was the time to establish a committee award. We developed certain criteria and named it the B02 Distinguished Service Award. Everything was in place by the time we got to Miami and the 1992 Chairman of the ASTM Board of Directors, Mr. Emery Farkas, had graciously consented to make the presentation. Unfortunately, Harley's wife was ill and he could not attend the meeting. So we sent him the plaque with a cover letter expressing both regret for his absence and thanks for his years of service.

Fortunately, we had drawn up criteria which ultimately met with the approval of the ASTM Board of Directors. In 1996, the B02 Distinguished Service Award gained Society recognition. (Editors Note: In 2001 this award renamed the B02 Gary M. Kralik Distinguished Service Award.)

So it is with great pleasure that we present the B02 Gary M. Kralik Distinguished Service Award to Dr. Richard F. Lynch, here in Miami, on the tenth anniversary of its establishment. Rich is being recognized for his outstanding contribution to and superb leadership of Subcommittee 4 on Zinc and Cadmium. As contributor, then chairman, he found new and meaningful activity for the subcommittee, increasing both membership and meeting attendance. He was instrumental in the reactivation of ISO TC 18 and the reestablishment of our USA TAG. Thanks, Rich.

Centennial Meeting of
ASTM Committee B02 on Nonferrous Metals and Alloys

Keynote Address
Robert G. Redelfs
Past ASTM Chairman

It's good to have an occasion to be with ASTM friends again. I appreciate the youthful spirit of B2. None of the B2 members that I was with when I was the secretary are around any more. And I see the ravages of age on my contemporaries who used to talk about their golf games, but now talk about their latest trips to their urologists-if they can remember that they had such trips.

Recently, a married couple, who are friends of ours and about my age, were at our house for dinner. After dessert and coffee, the women adjourned to the kitchen, while we men continued our male bonding at the table.

My friend mentioned that he and his wife had found a new restaurant that he recommended. I asked him the name of the restaurant. He thought and he thought and finally he said to me, "What is the name of that flower that's red and has thorns. You know. You give it to someone you love!" I said, "Do you mean a rose?" He said "Yeah, that's it!" Then he turned toward the kitchen and yelled to his wife, "Rose, what is the name of that nice restaurant we went to last week?"

I was pleased with the invitation to speak at this centennial observance of the organizing of ASTM Committee B2 on Nonferrous Metals and Alloys, particularly since my recent activity has been limited to requesting that I not be dropped from the Committee because I haven't returned ballots. We used to call them letter ballots because they were delivered by a letter carrier. Since my Packard Bell computer rarely functions in the manner for which it was purchased, I still prefer letter ballots. The point is that I doubt that my invitation to speak was based on recent contributions to the activities of B2.

It's more likely that my apparent senescence has been interpreted as evidence that I possess a certain wisdom gleaned from decades of service in our organization that may warrant sharing with you. It has even been mentioned by certain unnamed parties that I was a founding father of this committee. Not so! This is a monstrous misconception. The official roster of this very committee has registered my membership as beginning as recently as January 17, 1990. Look it up! Look to the likes of Dugan, Kralik and Lynch for your seasoned citizens.

Nor is it true that my motivation for joining this committee was to acquire free annual Handy & Harman Daily Diaries, although I'll admit to having 22 of them stashed away in my personal archives. I wish to point out that daily diaries have been used exclusively, with rare exceptions, for business related entries. For example, beginning on Sunday, September 8, 1957 and for four consecutive days, I was in the Sample Room at 4:15 a.m. That was important information for this sleep-loving individual. The note in the diary does not inform as to what I was to do there. Certainly, there were no supervisors around at such an ungodly time to take note of my dedication.

May 5, 1958 shows nothing about the delivery of my younger son in the back seat of a Pittsburgh police car to which my wife had been transferred as I nonchalantly continued to seek a replacement for a broken fan belt. The only entry on that date is "1:30 Oxide Meeting". I don't think I made it to that meeting. Frankly, my immediate recollection of that date is that the Pirates held off the New York Giants who in the top of the ninth inning had scored nine runs and had the bases loaded when Bill Mazeroski caught a pop fly to give the Pirates an 11 to 10 victory. Two years later, I had somewhat relaxed my strict diary-

entry limitations as evinced by this succinct May 7 announcement of the birth of our last child and only girl: "Anne arrived".

My membership in B2 actually goes back to the early 60s. The first entry in my diary related to ASTM states: "June 27, 1961, B2-IV Haddon Hall, Atlantic City." I attended that meeting with the understanding that I was to be the representative of the, St. Joe Lead Company, the chairman of B2-IV and the secretary of B2. I have no recollection of how I got into all that, but I vividly recall that I had no idea of what I was to do in any of these capacities. When I arrived at the B2-IV meeting room, I learned that I was expected not only to chair the meeting, but, since the subcommittee had no secretary, it was up to me to generate the minutes of the meeting. That was my first exposure to ASTM. I do recall that one kind gentleman felt my pain. He handed me a sheet of paper and told me that we always start the meeting by signing in with our names and organizational affiliations.

I soon learned that one of the duties of a technical committee secretary was to submit to headquarters each year a report of the activities of his committee and its subcommittees. These reports included actions taken on all the committee's standards. The toughest job for the secretary was to get the subcommittee reports in time to meet his own deadline. All of the technical committee reports were then compiled in a volume called: Transactions of the American Society for Testing and Materials. I doubt that anyone ever read the Transactions, but I think I submitted reports as long as I was secretary.

Moreover, each technical committee report was presented to the ASTM members at the annual business meeting. Those meetings were dreadfully tiresome and attended only by a few dedicated individuals who asked the same inconsequential questions each year. I have no idea of how many members belonged to ASTM in 1961. But I can't imagine having to sit through a meeting today where the secretaries of the present number of 132 technical committees each recites the litany of his committee's activities. I might be curious to know just what Committee E52 on Forensic Psychophysiology is all about, but I really don't care that Committee E18 on Sensory Materials and Products is responsible for the Standard Practice for Descriptive Skinfeel Analysis of Creams and Lotions. Nor am I interested in their Standard Practice for Sensory Evaluation of Auxiliary Deodorancy, even though it was cited in a recent National Geographic along with a picture of a human nose apparently performing a qualitative analysis of someone's auxiliary odorancy. In case you are wondering, each of you has two axils located at the bottom of the junction of your upper arms and your shoulders. I think this standard is really concerned with odorous armpits. I guess if I produced deodorants I might have an interest in this standard. But why not just call it what it is? Standard Practice for Checking Out Odorous Armpits. I wonder what the unit of odorancy is? I doubt that there is a scientist in the armpit industry, such as Watt and Ampere were in the nascent electrical industry, who would welcome having the unit of odorancy named for himself. Imagine a conversation at an MIT fraternity house. (It would have to be MIT—or maybe West Point.) "Muffy is a cute chick but her AOQ must be at least five adkins." AOQ, of course, is auxiliary odorancy quotient. Aren't you glad that you chose nonferrous metals and alloys?

We have always had; decent people in our membership, decent without being boring. When we used to meet at ASTM headquarters in downtown Philadelphia, the most convenient lodging was at the old Sheraton Hotel on Market Street. On one occasion, the head housekeeper asked me about our organization. Her curiosity was aroused by our good behavior. She told me that we were like the Ministerial Association and the black Shriners but not at all like either the music teachers or the trial lawyers. I suppose that was meant as a compliment. I told her that we get together to work. I'm not sure that she understood that.

My enthusiasm for Atlantic City waned over a period of years. At one meeting that I attended without my wife, during a break in my ASTM schedule, I dropped into a theater that was showing a movie whose title made me think it was a version of the tame but entertaining book, "Coffee, Tea or Me". It wasn't. It was

unadulterated adult entertainment with no redeeming features. As I left the theater and before I walked out onto the Boardwalk, I looked left and right to be sure that I wouldn't be seen by anyone I knew.

At another ASTM meeting in Atlantic City, my young family was with me. We stayed in a motel a block from the Boardwalk. My wife was clearly disappointed with the poor housekeeping of the establishment, a point that my five-year-old-son conveyed to the proprietor when we checked out.
Other Society members objected to Atlantic City for more pragmatic reasons. ASTM was growing to the point at which the limited size of the hotels caused the technical committees to be spread up and down the Boardwalk, some quite a distance from meeting headquarters. Moreover, Atlantic City was not accessible to most members by a direct flight.

When I became a member of ASTM, the annual business meetings were held in Atlantic City either; every other year or every third year. B2 reported their preference to meet elsewhere, a stance that I like to think was a factor in Atlantic City being dropped after 1971 as a regularly-scheduled location for ASTM meetings.

I understand that in one year's time ASTM uses more meeting and sleeping rooms than any other organization in the country. Prior to 1971, after a technical committee decided where and when to meet, their needs were conveyed to Joan McFadden who then made the necessary arrangements. However, the Director of Technical Committee Operations found his staff managers running thither' and yon to be at the various meetings of their committees. The solution to that problem was what we now know as committee weeks. Thus, committees that develop standards in related fields schedule their meetings for the same committee week. That's how B2 started hobnobbing with the steel guys. Now, our members who are interested in zinc and galvanized steel can take care of both interests in a single week.

B2 has distinguished itself as the spawning grounds for new committees: B5 on Copper, B7 on Light Metals, B10 on Reactive and Refractory Metals, and even the first G committee: G1 on Corrosion. (In case you didn't know, the G committees are all about corrosion, deterioration and degradation of materials.) Wow. How did we ever give birth to that bunch. I think it's more likely that we ejected them! But I lie awake at night trying to figure out how B1 on Electrical Conductors, which according to the ASTM Yearbook wasn't organized until 1909, has a designation that numerically precedes B2. Well, there are times that life isn't fair.

For many years, the chairman of a technical committee could not be an employee of a producer of any of the products and services covered by an ASTM standard. This, of course, meant that a committee chairman had to be either a consumer or a general interest member. Most of our chairmen came from academia. Bruce Gonser from Battelle was an exception. When Gary Kralik, a U. S. Navy employee, attended his first committee week in 1977, he was marked as a potential chairman in every committee whose meeting he attended. In due time among the B committees, he became known as a professional technical-committee chairman. By 1984, his internship as chairman for both the copper and the light-metals guys had been completed. Through this training, he acquired both the experience and sophistication to meet the rigorous standards of B2. Committee B2 then made a strategic recruiting move, At the June meeting, Gary was met at the airport and chauffeured in a limousine to his hotel in Montreal. To provide a modicum of camaraderie, the chairman of the ASTM board (who at one time was an active B2 member) and his wife rode with Gary. It's obvious that B2 did it right! Later, Gary showed his political clout by being elected to the Board of Directors.

Probably, the outstanding contribution B2 has made to voluntary consensus standards has been the initiation of the Unified Numbering System. In the 1960s, our subcommittee on Nickel and Nickel Alloys was running out of titles for specifications to identify new alloys. Since ASTM forbids the use of proprietary names in its standards, B2 had been using the names of the chemical elements of primary

importance to an alloy in its titles. But if a nickel alloy has cobalt and chromium as its primary alloying elements, there aren't many combinations of these elements that can be used in titles. Our staff manager at that time was Hal Cobb. Hal really spearheaded the effort to develop a new method to identify all alloys, whether they are based on nickel, zinc, hafnium or praseodymium.

Organizing UNS took the better part of a decade. The attitudes of many "experts" was no different from those Charles Dudley had encountered in the 1890s in response to his efforts to develop a voluntary consensus standards organization: "It can't be done!" But with persistence and the help of the representatives of several; companies, trade organizations and professional societies, Hal's efforts came to fruition with the publication in March 1974 of "SAE/ASTM Recommended Practice for Numbering Metals and Alloys".

Hal retired from ASTM some time ago. But he is still active in the world of the Unified Numbering System. In May of this year, Standardization News published a comprehensive article by Hal on the Unified Numbering System. It's worth reading. Harold M. Cobb can properly be called Mr. UNS or perhaps Dr. UNS—Doctor of Standards. I don't think that Hal has been properly recognized for his Unified Numbering System accomplishments.

I have sometimes wondered whether the work of those who have chosen to be ASTM standards-development staff managers is properly acknowledged. A staff manager is a combination of gofer, guide, instructor and source of information for all things ASTM, such as bylaws, schedules, blue books, green books, white books and polka-dot books. The aspect of his job that amazes me is his ability to keep track of each of his technical committees, what odd job he has promised to do, for whom, on what committee, when and where, and with no inkling of why. Often as not we quickly come to think of our staff manager as a real friend.

In recognition of all that, I wish to initiate my own award: the first and last annual Bab award, B.A.B.—Bonus Amicus Bobi Award. That's Latin for "good friend of Bob" award. I thought Latin would provide a little class. But I'm not sure I like that Bobi part. In English it would be the GFB award; but that's unpronounceable. The Latin teacher who helped me said that my choice of a name is not very good Latin. Well. I've seen a few drafts of standards that were not very good English.

First, let me tell you a little about our staff manager. Jeff Adkins was raised in Ohio, although to this day he has trouble pronouncing Ohio. He is a graduate of the United States Military Academy. Wow! His class rank was not available to me, but I understand that he was neither a Patton nor a Robert E. Lee. And I don’t know what that means.

He lives in Delaware, but in spite of an hour's drive each way, he has time to be an exemplary family man and role model for his two boys and little daughter. Like their dad, the boys are athletes, one of them making the school traveling soccer team, which takes more of Jeff's time.

At ASTM, Jeff is Staff manager for eight technical committees. He specializes in matters nonferrous and nuclear as well as hazardous stuff, cleaning up oil spills, and protective equipment for electrical workers. In his spare time he reads Standardization News and sleeps.

Jeff, it is my pleasure to present you with the BAB award.

Citation

Jeffrey Adkins

For skillful and exemplary service as Staff Manager of ASTM Committee B2 on Nonferrous Metals and Alloys and far your kind and patient attitude towards those B2 members who because of a recalcitrant computer or their own senility fail to achieve timely return of their committee ballots.

Robert G. Redelfs
Expired Member

Historic B02 Documents

Early Subcommittee Structure of Committee B-2

Subcommittee I	Pure Metals in Ingot Form	
	1913-1933	chairman: W. H. Bassett
	1934	no chairman
	1935	chairman: T. A. Wright
	Refined Copper	
	1936-1937	chairman: H. C. Jennison
	1938 -	chairman: J. L. Christie
Subcommittee II	Wrought Metals and Alloys	
	1913 - 1928	chairman: W. R Webster
	1929	Subcommittee I of Committee B-5
	Refined Lead, Tin, Antimony, and Bismuth	
	1936-193	chairman: T. A. Wright
Subcommittee III	Sand-Cast Metals and Alloys	
	1913 - 1922	chairman: W. M. Coarse
	1923 - 1929	chairman: N. K. B. Patch
	1929	Subcommittee II of Committee B-5
	White Metal Alloys	
	1936-193	chairman: G. H. Clamer
Subcommittee IV	White Metals - Tin, Lead, Zinc	
	1913 -1935	chairman: G. H. Clamer
	Refined Zinc and Wrought Metals	
	1936-193	chairman: E. H. Bunce
Subcommittee V	Plates, Tubes and Staybolts for Locomotives	
	1917-1923	chairman: W. R. Webster
	Discontinued	
	Precious Metals and Alloys	
	1936-193	chairman: R. H. Leach

Subcommittee VI — Non-Ferrous Alloys for Railroad Equipment

1917 - 1930 chairman: G. H. Clamer

Coated Metals
1936-193 chairman: W. G. Schneider

Subcommittee VII — Methods of Sampling and Chemical Analysis

1917 - 1927 chairman: W. A Cowan
1928-1930 chairman: H. A. Bedworth
1935 Committee E-3 on Chemical Analysis of Metals Refined

Nickel and High Nickel Alloys, Cast and Wrought
1936-193 chairman: C. E. Margerum

Subcommittee VIII — Aluminum Alloys, Cast and Wrought
Title Change: Light Metals and Alloys (1924)

1920-1922 chairman: J. L. Jones
1923 - 1928 chairman: E. Blough
1929 Discontinued

Miscellaneous Refined Metals and Alloys

1936-193 chairman: E. E. Schumacher

Subcommittee IX — Nomenclature of Metals and Alloys

1920 - 1922 chairman: W. B. Price
1923 - 1925 chairman: E. L. Lasier
1926 - 1935 chairman: E. E. Thum
1935 Discontinued

Subcommittee X — Methods of Testing

1920 - 1925 chairman: P. D. Merica
1926 - 1935 chairman: H. A. Andeson
1935 Discontinued

Subcommittee XI — Lead Pipe

1923 - 1925 chairman: W. A. Cowan
1926 Discontinued

Subcommittee XII — Metallic Fluxes and Deoxidizers

1923 - 1929 chairman: P. E. McKinney
1930 - 1935 chairman: C. E. Margerum
1935 Discontinued

Subcommittee XIII	Strip Zinc	
	1926 - 1929	chairman: G. G. Stone
	1930-1935	chairman: J. H. Janeway
	1935	Discontinued
Subcommittee XIV	Silver and Gold Solders	
	1927 -1929	chairman: R. H. Leach
	Precious Metals and Alloys (1929)	
	1929-1935	chairman: R. H. Leach
	1936	Discontinued
Subcommittee XV	Die Cast Metals and Alloys	
	1927 - 1929	chairman: H. A. Anderson
	1930	Now Committee B-6 on Die Cast Metals and Alloys
Subcommittee XVI	Coated Metals	
	1933-1935	chairman: W. G. Schnieder
	1936	Discontinued

1910 Annual Report of the Executive Committee

Since the Twelfth Annual Meeting of the Society, the Executive Committee has held four regular meetings and one special meeting. An abstract of the minutes of these meetings is appended to this report.

During the past year the Society has sustained a signal and irreparable loss through the death of its honored and beloved President, Dr. Charles B. Dudley, which occurred on December 21, 1909. The following Minute prepared by Dr. Henry N.L. Howe has been adopted by the Executive Committee and will be presented for adoption by the Society:

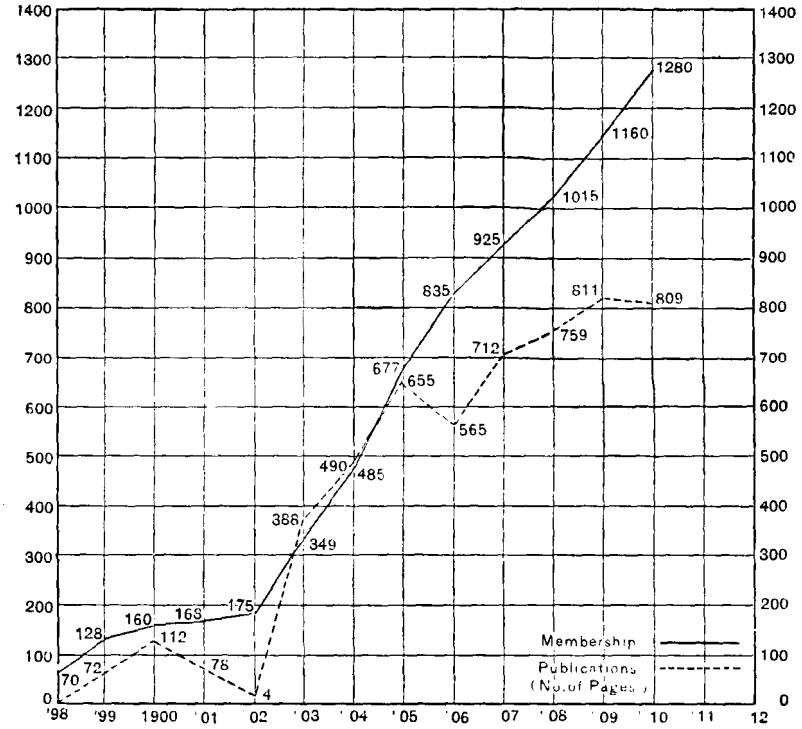
> Let us record at once our deep grief and our deeper gratitude, our grief indeed at the loss of a great leader and dear friend, but above all, our gratitude that we have had the privilege of being led.
>
> Such measure of usefulness as our Society has had it owes in very large part to that leadership. Here was a most rare combination of qualities, the sterling, the intellectual, the human, the Judicial, each on a high level, all combining to form a character, a personality, whose like we shall not took upon again.
>
> With a clear head to see the world's needs, to part the essential from the accidental and the merely concomitant, went the skillful and persuasive tongue to make clear to the rest of us what he had first made so clear to himself. With these went the perfect fearlessness, apparently even the unconsciousness of either danger or fear, which made him lead on where others would have lunched. With these again went his calm, clear, good judgment, which seemed to tell him spontaneously which among the good things that needed doing were the most worthy of being done, and what were the best and surest ways of doing them.
>
> With all these admirable qualities, vent that which was necessary to the accomplishment of his high purposes, his kindness of heart, his sympathy and his tact, which made us all his allies in what he undertook. Had he a proposal? Our affection and veneration for him made us almost its advocates before it was unfolded. Its intrinsic wisdom, and the clearness with which he expressed it, found an audience ready, almost anxious, and certainly expecting to be convinced.
>
> Great as were his tangible works, his greatest was the imponderable. Standing on a high platform, his call raised us towards his level, all the more effectively because of his complete unconsciousness of his own height. We who have known and loved him are for that knowledge and that love the better and the higher–how much, ah, who shall say?

As previously announced, a special Memorial Session in honor of the memory of Dr. Dudley will be held at the Thirteenth Annual Meeting of the Society, and arrangements will be made for the publication of a Memorial Volume worthily commemorative of his life and life-work.

Membership.–The membership at the last annual meeting was 1,160. Since then 154 applications for membership have been approved. The Society has suffered the loss of 8 members through death: S. W. Baldwin, January 5, 1910; G. T. Barnsley, October 23, 1909; Chas. B. Dudley, December 21, 1909; Chas. S. Gowen, October 19, 1909; A. Hooper, December 28, 1909; Edmund Johnson, May 23, 1909; Wm. Metcalf, December 5, 1909; D. H. Pierce, July 1, 1909. The number of resignations for the year is 26, making the total loss by death and resignation 34, which leaves a net gain of 120 and a total membership at present of 1,280. This estimate does not include members dropped by reason of delinquency in dues, the Executive Committee having decided to extend the time for delinquents till July 1, 1910.

Publications.–The publications of the year consist of Volume IX, containing 698 pages, and the yearly pamphlet of 139 pages. These publications aggregate 809 pages of printed matter exclusive of such parts as appear in duplicate. Seven official circulars of information were also issued during the year. The

rapidly growing prestige of the Society is apparent in a striking and gratifying way from the large increase in the receipts for the past year from sales of publications, the total sum realized, as seen from the Treasurer's report, being $1,375.85 as compared with $875.44 for the year 1908-1909, representing an increase of nearly 60 per cent for the year.



Technical Committees.–As previously announced, the large and constantly increasing number of technical committees has led the Executive Committee to authorize the adoption of a more systematic scheme of enumerating these committees, which became effective on May 1, 1910. By this scheme the technical committees are now designated by successive numerals affixed to letters representing the following classifications; A, Ferrous Metals; B, Non-Ferrous Metals; C, Cement and Clay Products; D, Miscellaneous Materials; E, Miscellaneous Subjects.

In pursuance, partly of action at the last annual meeting, and partly at its own initiative, the Executive Committee has authorized the creation of the following new technical committees:

A-2. On Standard Specifications for Wrought Iron.
A-9. On Alloy Steels.
A-11. On Metallurgical Research in Steel.
A-12. On Tests of Steel Structural Members.
B-2. On Non-Ferrous Metals and Alloys.
D-9. On Standard Tests of Insulating Materials.
D-10. On Standardizing Explosives.

The designation of Committee A-1 has been changed from that “On Standard Specifications for Iron and Steel” to that “On Standard Specifications for Steel.”

Of the foregoing new committees, Committees A-2, A-11 and A-12 are in course of organization. The remaining four committees have been organized.

1910 Price List of Standard Specifications

The price of the above Standard Specifications is 25 cent each; 20 cents in lots of ten or more, whether of the same or of different specifications; and 15 cents in lots of twenty-five or more of a single specification. Since the numeric designation of the Standard Specifications is subject to change from year to year, specifications should be ordered by title and not by number. Members of the Society may obtain these specifications at the following special prices: single copies, 15 cents; in lots of ten or more, 10 cents; complete sets, $2.50.

The price of the Year-Book in cloth binding containing all of these Standard Specifications in their latest revised form is $5.00. Libraries, publishers and book-dealers are allowed a discount of 20 per cent.

1910 Year Book
Committee B-2 on Non-Ferrous Metals and Alloys

WILLIAM CAMPBELL, *Chairman.*

Lawrence Addicks.
Ajax Metal Company,
G. H. Clamer.
American Brass Manufacturing Company,
W. H. Bassett.
F. L. Antisell.
C. T. Bragg.
J. A. Capp.
N. F. Harriman.
T. D. Lynch.
The Metal Industry.
G. L. Norris.
H. E. Smith.
Henry Souther.
C. R. Spare.
E. S. Sperr.
George C. Stone.
G. W Thompson.
United States Bureau of Standards,
W. F. Hillebrand.
W. R. Webster.
(Bridgeport Brass Company.)

1910 Year Book
List of Non-Ferrous Metal Standard Specifications

Standard Specifications for Hard-Drawn Copper Wire.
Proposed June, 1909.
Adopted August 16, 1909 (VOL IX, PP. 311-318).
First revision adopted August 21, 1911 (VOL XI, pp. -).

Standard Specifications for Copper-Wire Bars, Cakes, Slabs, Billets, Ingots, and Ingot Bars.
Proposed June, 1911.
Adopted August 21, 1911 (VOL XI, pp. -).

Standard Specifications for Spelter.
Proposed June, 1911.
Adopted August 21, 1911 (VOL XI, pp. -).

Standard Specifications for Manganese-Bronze Ingots.
Proposed June, 1911.
Adopted August 21, 1911 (VOL XI, pp. -).

1911 By-Laws

Article I – Members

SECTION 1. The Society shall consist of Members and Junior Members.

SEC. 2. A Member shall be a person not less than thirty years of age; corporation, firm, technical society, teaching faculty or library, proposed by two members and approved by the Executive Committee.

SEC. 3. A Junior Member shall be a person less than thirty years of age on the date of his admission, proposed by two Members and approved by the Executive Committee. A Junior Member shall have the same rights and privileges as a member, and his status shall be changed from that of Junior Member to Member at the beginning of the fiscal year next succeeding the date on which he attains the age of thirty years.

SEC. 4. Applications for membership and resignation from membership must be transmitted in writing to the Secretary.

Article II – Officers and Their Election

SECTION 1. The officers shall be a President, Vice-President, Secretary and Treasurer.

SEC. 2. The offices of Secretary and Treasurer shall be held by the same person.

SEC. 3. These officers shall be elected by letter ballot, at the Annual Meeting, and shall hold office for two years.

SEC. 4. The Executive Committee shall consist of these officers and also the last Past President and seven members, four being elected by letter ballot at each Annual Meeting in the odd years and three at each Annual Meeting in the even years. Four members of the Executive Committee shall constitute a quorum.

SEC. 5. The President shall be, ex officio, the nominee for American Member of the Council of the International Association.

SEC. 6. The Secretary shall receive a salary to be fixed by the Executive Committee.

SEC. 7. The officers and members of the Executive Committee shall serve for the respective terms to which they shall have been elected, or until their successors shall have been duly elected.

SEC. 8. The Executive Committee shall have the power to fill any vacancies occuring in their number by death, resignation or otherwise.

SEC. 9. The election of officers and members of the Executive Committee shall be by letter ballot. The Executive Committee, before each Annual Meeting shall appoint a Nominating Committee, whose duty it shall be to nominate, a full list of officers. The list of nominations so made shall be submitted to the membership not more than eight (8) nor less than four (4) weeks before the coming, Annual Meeting.

Further nominations, signed by at least ten (10) members, may be submitted to the Secretary in writing at least four (4) weeks before the Annual Meeting. and such nominations shall also be submitted to the membership on the official ballot.

Article III – Meetings

SECTION I. The Society shall meet annually. The time and place of each place meeting shall be fixed by the Executive Committee.

SEC. 2. Special meetings may be called whenever the Executive Committee shall deem it necessary, or upon the request in writing to the President of twenty-five (25) members.

Article IV – Procedure Governing the Adoption of Standard Specifications

SECTION I. A proposed standard specification must be presented at the Annual Meeting, at which it may be amended by majority vote of those voting. A two-thirds affirmative vote of those voting shall be required to refer the specification to letter ballot of the Society. A two-thirds affirmative vote of those voting on letter ballot shall be required for the adoption of the specification.

Article V – Dues

SECTION 1. The fiscal year shall commence in 1910 on the first of August and the dues from August 1, 1910, to December 31, 1910, shall be $5.00 for Members and $2.50 for junior Members.

SEC. 2. The fiscal year after December 31, 1910, shall begin on the first of January and the annual dues from and after January 1, 1911, shall be $10.00 for Members and $5.00 for junior Members, payable in advance.

SEC. 3. Members or Junior Members holding membership also in the International Association for Testing Materials shall pay annually, in advance, the additional slim of $2.00, the fiscal year of the International Association beginning on the first of January, which sum shall be transmitted by the Treasurer to the International Association.

SEC. 4. Any Member or Junior Member may compound his dues at the beginning of any fiscal year by the purchase of a life membership, exempting him for life from annual dues, by the payment of the sum of one hundred and fifty dollars ($150); provided such membership is held by an individual. The cost of life membership, or membership in perpetuity, to corporations, firms, technical societies, teaching faculties or libraries shall be two hundred dollars ($200).

SEC. 5. Any member of the Society whose dues shall remain unpaid for a period of three months from the beginning of the fiscal year shall receive a "Second Notice" from the Treasurer; if his dues shall remain unpaid for a period of five months from the beginning of the fiscal year, he shall forfeit the right to vote and to receive the publications of the Society. A month before the close of the fiscal year, he shall receive a final notice from the Treasurer that, if he neglects to pay his clues before the end of the fiscal year, his name may be stricken from the roll of membership by the Executive Committee.

SEC. 6. Any person elected after six months of any fiscal year shall have expired, shall pay only one-half of the amount of cues for that fiscal year; but he shall not be entitled to a copy of the Proceedings of the previous Annual Meeting.

SEC. 7. The resignation of a member whose dues for the current fiscal year are unpaid, shall be acceptable only if it be received within one month from the beginning of the fiscal year, unless an exception be authorized by special action of the Executive Committee.

1911 Year Book,
Committee B-2 on Non-Ferrous Metals and Alloys

WILLIAM CAMPBELL, *Chairman.*

Vice-Chairmen.
W. H. BASSETT T. D. LYNCH
G. H. CLAMER W. R. WEBSTER

Non-Producers (12)

Bragg, C. J.
Bureau of Standards,
W. F. Hillebrand.
Bureau of Steam Engineering,
L. A. Kriser.
Campbell, William *(Chairman).*
Capp, J. A.
Jones, Jesse.
Lynch, T. D. *(Vice-Chairman).*
Metal Industry, The
J. L. Krom.
Smith, H. E.
Souther, Henry.
Sperry, E. S. Harriman, N. F.

Producers* (15)

Addicks, L.
Ajax Metal Company,
G. H. Clamer (Vice-Chairman).
American Brass Company,
W.H. Bassett (Vice-Chairman)
Antisell, F. L
Corse, W. M.
Cooper, J. B.
Furst, E. W.
Goss, E. O.
Herreshoff, J. B., Jr.
Norris, G. L.
Spare, C.R.
Stone, G. C.
Thompson, G. W.
Thompson, J. F.
Webster, W. R. (Vice-Chairman).

*The members of Committee B-2, classed as Producers, stand in the relation of Producer to certain products, and in that of Non-Producer to other products within the province of the Committee.

1911 Year Book - Table of Contents

Standard Specifications Adopted by the Society

Selected Specifications from Miscellaneous Sources

1911 Year Book
List of Non-Ferrous Metal Standard Specifications

Standard Specifications for Hard-Drawn Copper Wire.
Proposed June, 1909.
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Adopted August 21, 1911 (VOL XI, pp. -).

Standard Specifications for Spelter.
Proposed June, 1911.
Adopted August 21, 1911 (VOL XI, pp. -).

Standard Specifications for Manganese-Bronze Ingots.
Proposed June, 1911.
Adopted August 21, 1911 (VOL XI, pp. -).

1920 Year Book
Committee B-2 on Non-Ferrous Metals and Alloys

William Campbell, *Chairman*.
P.D. Merica, *Secretary*.

Vice-Chairmen.

W. H. Bassett. W. A. Cowan.
G. H. Clamer. J. L. Jones.
W. M. Corse. W.B Price.
W. Rueben Webster.

Non-Producers (37)

American Chain Co.,
A. V. de Forest.
American Locomotive Co.,
F. J. Cole.
E. J. Edwards.
American Steel and Wire Co.,
F. C. Elder.
Atkinson, W. W.
Bethlehem Shipbuilding Corporation,
W. M. Manville.
Bierbaum, C. H.
Bureau of Construction and Repair,
U. S. N.,
Bureau of Engineering, U. S. N.,
Inspection Division.
Burgess, G. K.
Lathrop, E. C.
MacPherran, R. S.
McKinney, P. E.
Merica, P. D. (Secretary).
Norris, G. L.
Olson, L. W.
Pennsylvania System,
F. M. Waring.
Reinhardt, G. A.
Shepard, W. K.
Sherwin-Williams Co.,
E. C. Holton.
Campbell, William (Chairman).
Chase. C. E.
Cramp and Sons Ship and Engine Building Co.,
William, H. Schwenk.

General Electric Co.,
J. A. Capp,
J. M. Darke.
Gerhard, M. S.
Greene, H. L
Hereeshoff, J. B., Jr.
Hibbard, W. R.
Hillebrand, W. F.
Inland Steel Co.,
G. H. Jones.
Johnston, T. J.
Smith, H. E.
Southern Railway,
J. C. Ramage.
Standard Underground Cable Co.,
H. W. Fisher.
Walker, A. L.
Webbert, L. P.
Western Electric Co.,
J. W. Harris,
H. G. Walker.
Wille, H. V.

Producers* (33)

Addicks, Lawrence.
Ajax Metal Co.,
G. H. (lamer (Vice-Chairman).
Aluminum Castings Co.,
Zay Jeffries.
Aluminum Co, of America,
E. Blough.
American Brass Co.,
W. H. Bassett (Vice-Chairman).
Alden Merrill.
American Metal Co.,
H. M. Burkey.
American Smelting and Refining Co.,
H. H. Alexander.
American Zinc, Lead and Smelting Co.,
A. W. Dodd.
Bragg, C. T.
Bridgeport Brass Co.
J. L. Christi,
W. Reuben Webster-(Vice-Chairman)
Cairns, F. I.
Co.,
Calumet and Hecla Mining Co.,
R. L. Agassiz.
Aluminum Chivvis, Norman.
Corse., W. M. (Vice-Chairman).
Cowan, W. A. (Vice- Chavtndn).
Damascus Bronze Co.,
W. K. Frank.
General Aluminum and Brass Manufacturing Co.,
V. Skillman,
Hendricks Brothers, Inc.,
E. J. Keane.
Johnston, R. L.
Klaustertmeyer, C. 11.
Lumen Bearing Co.,
N. K. B. Patch.
New Jersey Zinc Co.,
L. S. Holstein.
G. C. Stone.
Nichols Copper Co.,
Charles Ferry.
Pannell, E. V.
Price, W. B. (Vice-Chairman).
Raritan Copper Works,
F. L. Antisell.
A. C. Clark.
St. Joseph Lead Co., I. H. Cornell.
Thompson, J. F.
United States Metals Refining Co.,
W. R. Deacon.
United States Smelting, Refining and Mining

F. F. Ca1cord.
War Service Association of Secondary
Smelters,
W. M. Weil.
Westinghouse Electric and Manufacturing Co.,
J. L. Jones (Vice-Chairman).
T. D. Lunch.
Winchester Repeating Arms Co.,
J. S. Gravely.

* The members of Committee B-2, classed as producers, stand in the relation of Producer to certain products, and in that of Non-Producer to other products within the province of the Committee.

1935 Year Book
Committee B-2 Committee Members

WILLIAM CAMPBELL, Honorary Chairman: Columbia University, New York City

R. F. MEHL, Chairman: Carnegie Inst. of Technology, Pittsburgh, PA.

Vice-Chairmen:

H. A. ANDERSON	R. H. LEACH
E. H. BUNCE	C. E. MARGERUM
H. V. CHURCHILL	W. G. SCHNEIDER
G. H. CLAMER	T. A. WRIGHT

E. E. THUM, Secretary: Metal Progress; 7016 Euclid Ave., Cleveland, Ohio

Producers (40) Consumers (31) General Interests (24) Total (104)

Subcommittees of Committee B02

Advisory

Subcommittee I	On Pure Metals in Ingot Form
Subcommittee II	On Wrought Metals and Alloys
Subcommittee III	On Sand-Cast Metals and Alloys
Subcommittee IV	On White Metals—Tin, Lead and Zinc
Subcommittee V	On Plates, Tubes and Staybolts for Locomotives (Discontinued)
Subcommittee VI	On Non-Ferrous Alloys for Railroad Equipment
Subcommittee VII	On Methods of Sampling Chemical Analysis (Discontinued. Now Being Handled by Committee E-3)
Subcommittee VIII	On Light Metals and Alloys (Discontinued)
Subcommittee IX	On Nomenclature of Metals and Alloys (Discontinued)
Subcommittee X	On Methods of Testing (Discontinued)
Subcommittee XI	On Lead Pipe (Discontinued)
Subcommittee XII	On Metallic Fluxes and Deoxidizers (Discontinued)
Subcommittee XIII	On Strip Zinc
Subcommittee XIV	On Precious Metals and Alloys

Subcommittees of Committee B02 (Continued)

Subcommittee XV	On Die-Cast Metals and Alloys (Now Committee B-6 on Die-Cast Metals and Alloys)
Subcommittee XVI	On Coated Metals

1950 Year Book
Committee B-2 Committee Members

Scope: The formulation of specifications as to composition and performance for all refined non-ferrous, precious and miscellaneous non-ferrous alloys and metals not specifically assigned heretofore to some other committee.

The scopes of Committee B-2 on Non-Ferrous Metals and Alloys, A-1 on Steel, A-10 on Iron-Chromium, Iron-Chromium-Nickel and Related Alloys, and B-4 on Electrical Heating, Resistance and Related Alloys cannot be definitely limited. Therefore, a coordinating committee consisting of representatives of each of these committees will decide questions of jurisdiction over specific materials and applications subject to the approval of the committees concerned.

Honorary Chairman:
G. H. CLAMER, Ajax Electro Metallurgical Corp., 46 Richmond St., Philadelphia 23, PA

Chairman:
BRUCE W. GONSER, Battelle Memorial Inst., 505 King Ave., Columbus 1, Ohio.

Honorary Vice-Chairman:
E. E. THUM, Metal Progress, 7301 Euclid Ave., Cleveland 3, Ohio.

Senior Vice-Chairman:
R. H. LEACH, Handy & Harman, Bridgeport 9, Conn.

Vice-Chairmen:
E. H. BUNCE
O. B. J. FRASER
W. E. MILLIGAN
SIDNEY ROLLE
E. E. SCHUMACHER
F. L. SCOVILL. JR.

Secretary:
G. HOWARD LxFEVRE, U. S. Smelting, Refining and Mining Co., 57 William St., New York 5, N. Y.

Past Officers

Chairmen:	Secretaries:
1910-1934 William Campbell	1920-1928 P. D. Mertes
l935-1939 R. F. Mehl	1928-1939 E. E. Thum
1939-1948 E. E. Thum	1939-1944 C. E. Swartz

Producers (49) Consumers (44) General Interests (25) Total (118)

Subcommittees of Committee B02

Subcommittee I	Refined Copper
Subcommittee II	Refined Lead, Tin, Antimony, and Bismuth
Subcommittee III	White Metal Alloys
Subcommittee IV	Refined Zinc and Wrought Zinc
Subcommittee V	Precious Metals and Alloys
Subcommittee VI	Coated Metals
Subcommittee VII	Refined Nickel and High Nickel Alloys, Cast and Wrought
Subcommittee VIII	Miscellaneous Refined Metals and Alloys

Joint Coordinating Committee of Committees A-1, A-10, B-2, and B-4

1960 Year Book
Committee B-2 Committee Members

Scope: The formulation of specifications as to composition and performance for all refined nonferrous, precious and miscellaneous nonferrous alloys and metals not specifically assigned to some other committee.

The scopes of Committee R-2 on Nonferrous Metals and Alloys, A-1 on Steel, A-9 on Ferro-Allays, A-10 on Iron-Chromium, Iron-Chromium-Nickel and Related Alloys, and B-4 on Metallic Materials for Thermostats and for Electrical Resistance, Heating, and Contacts, cannot be definitely limited. Therefore, a coordinating committee consisting of representatives of each of these committees will decide questions of jurisdiction over specific materials and applications subject to the approval of the committees concerned.

Chairman:
GERHARD DERGE, Carnegie Institute of Technology Department of Metallurgical Engineering. Pittsburgh, PA. 15213

Vice-Chairman:
C. K. CONARD, Ametalco, Inc., 1290 Avenue of the Americas, New, York, N. Y. 10019

Vice-Chairman:
W. W. STEPHENS, The Carborundum Metals Co., Box 32, Akron, N. Y. 14001

Secretary:
R. G. REDELFS, St. Joseph Lead Co., Zinc Smelting Div., Monaca, PA. 15061

Past Officers:

Chairmen:	Secretaries:
1910-1935 William Campbell	1920-1928 P. D. Merica
1935-1939 R. F. Mehl	1928-1939 E. E. Thum
1939-1948 E. E. Thum	1939-1944 C. E. Swartz
1948-1960 B. W. Gonser	1944-1955 G. Howard LeFevre
1960-1964 Alfred Bornemann	1955-1957 W. A. Mudge
	1957-1960 A. M. Bounds
	1960-1964 C. K. Conard

Honorary Members:
E. E. SCHUMACHER S. SKOWRONSKI

Producers (69) Consumers (48) General Interests (28) Total (145)

Subcommittees of Committee B02

Advisory

Subcommittee I	Refined Copper
Subcommittee II	Refined Lead, Tin, Antimony, and Bismuth
Subcommittee III	Tin Base and Lead Base Alloys
Subcommittee IV	Zinc and Cadmium
Subcommittee V	Precious Metals
Subcommittee VI	Coated Metals
Subcommittee VII	Refined Nickel and Cobalt, High Nickel Alloys and High Cobalt Alloys, Cast and Wrought
Subcommittee VIII	Less Common Metals and Alloys
Subcommittee IX	Titanium and Titanium Alloys
Subcommittee X	Zirconium and Hafnium

Joint Coordinating Committee of Committees A-1, A-9, A-10, B-2, and B-4

1986 Directory
Committee B02 on Nonferrous Metals and Alloys

Scope: To develop and maintain specifications covering composition, properties, dimensions, and quality standards, and to develop and maintain test methods, definitions, classifications, and nomenclature for nonferrous metals and their alloys, for refinery or mill products made therefrom, and for solder fluxes. The materials covered in this scope exclude the light metals, die casting alloys, reactive and refractory metals and alloys, cast and non-refinery products of copper and copper alloys, electronic-grade alloys, and metal powders.

Honorary Chairman: B.W. GONSER, 1301 Arlington Ave., Columbus, OH 43212
Chairman: HORACE POPS, Essex Group, 1550 Wall St., Ft. Wayne, IN 46804

Producer
Vice-Chairman: J.W. TACKETT, Cabot Corp., 1020 West Park Ave., Kokomo, IN 46901

User
Vice-Chairman: G.M. KRALIK, Naval Facilities Engineering Command (156) NCBC, Port Hueneme, CA 93043

Secretary: R.F. LYNCH, Zinc Institute, Inc., 292 Madison Ave., New York, NY 10017

Staff Manager: T.F. THOMPSON (215-299-5487)

Subcommittees of Committee B02

B02.01 Refined Copper
Pops, Horace

B02.02 Refined Lead, Tin, Antimony, and Their Alloys
Prengaman, R.D.

B02.04 Zinc and Cadmium
Lynch, R.F.

B02.05 Precious Metals
Lincoln, A.J.

B02.07 Refined Nickel and Cobalt, and Alloys Containing Nickel or Cobalt or Both as Principal Constituents
Tackett, J. W.

B02.91 Editorial
Carlson, D.C.

B02.92 USA TAG to ISOITC 155 on Nickel and Nickel Alloys
Carlson, D.C.

1997 Directory
Committee B02 on Nonferrous Metals and Alloys

Scope: The development and maintenance of standards on compositions, properties, dimensions, test methods, classifications, terminology and nomenclature of nonferrous metals and alloys, of refinery and mill products made therefrom, and of solder and solder fluxes.

Excluded are copper and copper alloys, electronic grade materials and wires and accessories for use as electrical conductors, light metals and alloys, reactive and refractory metals and alloys and metal powders.

Chairman: RICHARD F. LYNCH, Lynch & Associates, Inc., 593 Ramapo Valley Rd., Oakland, NJ 07436 (201-405-1580) FAX: 201-405-1680

First Vice-Chairman: SERGE BELISLE, Noranda Technology Centre, 240 Hymus Blvd., Pointe Claire, PQ, Canada H9R-1 G5 (514-630-9488) FAX: 514-630-9379

Second Vice-Chairman: JOHN W. PASSMORE, Doe Run Co., 881 Main St., Herculaneum, MO 63048 (314-933-3172) FAX: 314-933-31216

Secretary: BARRY P. DUGAN, Zinc Corp. of America, 300 Frankfort Rd., Monaca, PA 15061-2295 (412-774-1020) FAX: 412-773-9386

Membership Secretary: DENNIS W. RAHOI, CCM 2000, P.O. Box 347, Rockaway, NJ 07866-0347 (201-625-8033) FAX: 201-625-8820

Honorary Chairman: GARY M. KRALIK, NCBC Code 15, 1000 23rd Ave., Port Hueneme, CA 93043-4301 (805-9825741) FAX: 805-982-5196

Staff Manager: TIMOTHY S. BROOKE (610-832-9729)

Subcommittees of Committee B02

B02.02 Refined Lead, Tin, Antimony, and Their Alloys
Passmore, John W.

B02.04 Zinc and Cadmiums
Lynch, Richard F.

B02.05 Precious Metals
Savolainen, Arnold M.

B02.07 Refined Nickel and Cobalt and Alloys Containing Nickel or Cobalt or Both as Principal Constituents
Whitcraft, Paul K

B02.90 Executive
Lynch, Richard F.

Subcommittees of Committee B02 (Continued)

B02.91 Editorial and Terminology
Redelfs, Robert G.

B02.92 US TAG ISOITC 155 on Nickel and Nickel Alloys
Tackett, Joseph W.

B02.93 Awards
Kralik, Gary M.

B02.94 Long Range Planning
Whitcraft, Paul K.

B02.95 International Zinc Standards
Lynch, Richard F.

B02.95.01 U.S. TAG to ISO TC1a on Zinc and Zinc Alloys
Lynch, Richard F.

2002 Directory
Committee B02 on Nonferrous Metals and Alloys

Scope: The development and maintenance of standards on compositions, properties, dimensions, test methods, classifications, terminology and nomenclature of nonferrous metals and alloys, of refinery and mill products made therefrom, and of solder and solder fluxes, and materials used in the manufacture of electrical heating devices, electrical resistance devices, electrical contacts and conductors, and thermo sensitive elements in thermostats.

Excluded are copper and copper alloys, light metals and alloys, reactive and refractory metals and alloys, metal powders, electronic grade materials and wires,,and certain accessories for use as electrical conductors.

Chairman: PAUL K. WHITCRAFT, Rolled Alloys,
125 West Sterns Rd., Temperance, MI 48182-0310, (734) 847-9481 • FAX: (734) 847-3915 •
e-mail: pwhitcraft@rolledalloys.com

First Vice-Chairman: JOHN M. KUZMECH, J. M. Ney Co., Ney Industrial Park, Bloomfield, CT 06002, (860) 286-6160 • FAX: (860) 286-6137 • e-mail: jkuzmech@jmney.com

Second Vice-Chairman: BARRY P. DUGAN, Zinc Corporation of America, 300 Frankfort Rd., Monaca, PA 15061-2295, (724) 774-1020 • FAX: (724) 773-9386 • e-mail: bdugan@zinccorp.com

Recording Secretary: JAMES H. MICHEL, Platt Brothers & Co., 2670 S. Main St., PO Box 1030, Waterbury, CT 06706, (203) 753-4194 • FAX: (203) 753-9709 • e-mail: jmichel@plattbros.com

Membership Secretary: RICHARD A. LAMB, Fusion Inc., 4658 East 355th St., Willoughby, OH 44094, (440) 946-3300 • FAX: (440) 942-9083 • e-mail: rlamb@fusion-inc.com

Honorary Chairman: RICHARD E LYNCH, Lynch & Associates Inc., 377 Sicomac Ave., Wyckoff, NJ 07481-2128, (201) 891-8399 • FAX: (201) 891-8398 • e-mail: rflynch@compuserve.com

Staff Manager: JEFFREY ADKINS, ASTM International, 100 Barr Harbor Dr., PO Box C700, W. Conshohocken, PA 19428-2959, (610) 832-9738 • FAX: (610) 832-9666 • e-mail: jadkins@astm.org

Subcommittees of Committee B02

B02.02 Refined Lead, Tin, Antimony, and Their Alloys
Gross, Douglas K. (416) 943-6269

B02.04 Zinc and Cadmium
Lynch, Richard F. (201) 891-8399

B02.05 Precious Metals and Electrical Contact Materials
Kuzmech, John M. (860) 286-6160

B02.07 Refined Nickel and Cobalt and Their Alloys
Whitcra ft, Paul K. (734) 847-9481

Subcommittees of Committee B02 (Continued)

B02.10 Thermostat Metal and Electrical Resistance Heating Materials
Perricci, Michael A. (610) 562-3841

B02.11 Electrical Contact Test Methods
Sproles, Edward S. (609) 844-0473

B02.90 Executive
Whitcraft, Paul K. (734) 847-9481

B02.91 Terminology
Malmgreen, John P. (845) 427-2151

B02.92 US TAG ISO/TC 155 on Nickel and Nickel Alloys
Whitcraft, Paul K. (734) 847-9481

B02.93 Awards
Kralik, Gary M. (760) 577-7407

B02.94 Long Range Planning
Lynch, Richard F. (201) 891-8399

B02.95 International Zinc Standards
Gross, Douglas K. (416) 943-6269

B02.95.01 US TAG to ISO TC18 on Zinc and Zinc Alloys
Malmgreen, John P. (845) 427-2151

ASTM Awards History – Committee B02

Honorary Member
1937 G. W. Thompson
1966 Bruce W. Gonser
1971 James S. Vanick
1978 Robert G. Redelfs
1980 H. Howard Stout, Jr.

Award of Merit
1953 E. I. Shobert, II*
1954 Ernest S. Thum
1956 Bruce W. Gonser
1959 George O. Hiers
1959 Charles K. Strobel*
1960 Stanton Umbreit*
1962 William A. Milligan
1964 Sidney A. Standing*
1965 Stanislaus Skowronski
1967 G. Howard LeFevre
1969 Audrey M. Bounds
1970 Robert G. Redelfs
1973 Ray M. Sears*
1973 Harry H. Stout
1979 Unto U. Savolainen*
1980 Kenneth Pitney*
1981 J. William Claypool
1982 Duane C. Carlson
1983 Edward W. Bitzer
1983 Edgar W. Glossbrenner*
1985 Marshall V. Yokelson
1987 Joseph W. Tackett
1990 Stephen R. Cole*
1990 Richard F. Lynch
1994 Dexter A. Jeannette*
1996 Barry P. Dugan
1996 Edward S. Sproles*
2002 John M. Kuzmech
2002 Paul K. Whitcraft
* Nominated by Committee B04

Distinguished Service Award
1992 Harley Kurtz
1994 Joseph W. Tackett
1996 Gary Kralik
1997 Robert G. Redelfs
1998 R. David Prengaman

Committee B02 Gary M. Kralik Distinguished Service Award
2001 Arnold Savolainen
2001 Narendra Zaveri
2001 Louis G. Coffee
2002 Richard F. Lynch

Award of Appreciation
1998 John Passmore
2001 P. Douglas Brackman
2001 Mary Ann Worthington
2002 Jesse Aronstein
2002 Douglas K. Gross
2002 Larry L. Parkinson
2002 Michael Perricci
2002 Edward S. Sproles

Original B02 Standards by Subcommittee

B 23 -18 T
B 413 – 64 T
B 476 – 68
B 39 – 22
B 63 – 26 T
B 106 – 40
B 539 - 70

ASTM Committee B02
Centennial Celebration & History

AMERICAN SOCIETY FOR TESTING MATERIALS

PHILADELPHIA, PA., U. S. A.

AFFILIATED WITH THE

INTERNATIONAL ASSOCIATION FOR TESTING MATERIALS.

STANDARD SPECIFICATIONS FOR SPELTER.

ADOPTED AUGUST 21, 1911.

1. Under these specifications Virgin Spelter, that is, spelter made from ore or similar raw material by a process of reduction and distillation and not produced from re-worked metal, is considered in four grades, as follows:

A.....High Grade.
B.....Intermediate.
C.....Brass Special.
D.....Prime Western.

Marks. 2. A brand shall be cast in each slab by which the maker and grade can be identified.

Lots. 3. The maker shall use care to have each carload of as uniform quality as possible.

Composition. 4. *A. High Grade.*—The spelter shall not contain over

0.07 per cent. lead.
0.03 " " iron.
0.05 " " cadmium.

It shall be free from aluminum.

The sum of the lead, iron, and cadmium shall not exceed 0.10 per cent.