

HISTORY OF THE  
FIRST TWENTY-FIVE YEARS  
OF THE  
ARIZONA SECTION  
OF THE

AMERICAN SOCIETY OF CIVIL ENGINEERS

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George Edson Phillip Smith (D. Eng.), a graduate of the University of Vermont, accepted a position with the University of Arizona in 1900 to teach physics and civil engineering. In Tucson, at that time, there were a couple of land surveyors but no person competent to be designated as a civil engineer. Professor Smith had to do most of the engineering for the neighborhood, including the design of the first bridge to be built across the Santa Cruz and the first one across the Rillito. With the help of his class he gauged the flow of the Santa Cruz river during the big flood of 1904. He noted the increase in depth, due to scour along the sandy bed, as the water rose and the subsequent silting up as it receded. This was something new to him so he wrote a careful report of his observations, sent it into the ASCE headquarters and it was published in the Transactions. This started Smith on a practice, which he advises all young civil engineers to emulate, of writing reports of all unusual observations, regardless of how unimportant they may seem and submitting them for publication. Attached hereto is a list of Professor Smith's 112 publications.

He also advises all young civil engineers to join ASCE and to attend all meetings if at all possible. Professor Smith joined the ASCE in 1903 and attended all meetings held in the Western part of the U.S. While attending an ASCE meeting at Pasadena in 1924 he was eating lunch in a small restaurant when a man strolled in and asked if he might share the table. The man introduced himself as John Hoffman Dunlap, new secretary of the ASCE. As the former secretaries had been of the sort who did not bother to associate themselves with the common herd, Smith was somewhat surprised and considerably impressed. Dunlap inquired as to the number of engineers in Arizona and as to the advisability of trying to establish a section in the State. Smith was not too enthu-

siastic about the matter at the time, but enroute back to New York the secretary was killed in a train wreck. Among his effects was found a note book in which was recorded the conversation with Smith and a reminder that the matter of a section in Arizona be followed up. The incoming secretary wrote to Professor Smith about the matter and, mostly because of his respect for the deceased Dunlap, he decided to go ahead with the establishment of an Arizona Section. He invited 28 eligible engineers to meet with him in the Adams Hotel in Phoenix in February, 1925. All 28 engineers attended the meeting and 27 of them decided to join up and form a section. The one recalcitrant engineer joined later. A list of members is shown on the program attached hereto. Professor Smith was selected as the first president, W. W. Lane and J. B. Girard as vice presidents, and W. E. Dickenson as secretary. By the end of the year the Section had 32 members. Of this group of charter members the writer can find the names of only six in the 1962 Register; they are: G. E. P. Smith, F. R. Goodman, C. E. Griggs, R. A. Hoffman, G. L. McLane, and R. G. Baker. A copy of the original Constitution and By-Laws is attached hereto.

Three meetings were held in 1925, one in Tucson in May, one in Flagstaff in July, and one in Phoenix in November. The programs were mostly technical and pretty well covered the whole field of civil engineering but the emphasis was on some phase of the water problem. All the meetings were held on Saturdays, a precedent still followed by the Section. On the Sunday following the Phoenix meeting a trip was made to Horse Mesa and Mormon Flats dams. I believe one of these dams was under construction at that time. On Sunday following the meeting in Flagstaff there was a trip to the Grand Canyon where a round table discussion was held concerning the Colorado River Problem. This problem, of great concern to Arizonans, will be found listed on many subsequent programs.

W. W. Lane was president of the Section in 1926 and R. A. Hoffman was secretary. There was a February meeting in Tucson with a varied technical program. The luncheon was held with the Tucson Chapter of AAE, which was going strong at the time but was not destined for a long life. Following the dinner there was a trip to Wolfville, whatever that was, and the remainder of the evening was spent star gazing at the Steward Observatory. The November meeting was held in Phoenix. A general technical program was presented including a discussion of the Colorado River Compact by Professor G. E. P. Smith. Entertainment consisted of a dinner dance in the evening.

J. W. B. Blackman was president in 1927. In April a joint meeting with

the University of Arizona Student Chapter of ASCE was held in Tucson. This was the beginning of the practice of the Section of holding joint meetings with the Student Chapter in Tucson in the Spring of each year. This practice is still continuing. The November meeting was held in Phoenix. There was a dinner dance at the Arizona Club. Miscellaneous technical programs were presented at both of these meetings. The secretary-treasurer reported cash on hand of \$160.23, expenditures for that year only \$13.30. Thirty persons attended the Phoenix meeting.

Howard S. Reed was president in 1928. The files show that President Reed sent out an appeal to the membership to please attend the Phoenix meeting and plan to attend the State Fair while there. For the first time Dr. Douglas of the University read his paper on tree rings to the Section.

James B. Girard was president in 1929. I find no copy of any programs in the files but memory tells me there was a dinner meeting in Phoenix at which Professor F. C. Kelton spoke.

W. W. Lane was again selected as president in 1930 and E. V. Miller became secretary-treasurer. There was a meeting in Phoenix in November. Luncheon was held jointly with the Phoenix Chapter of AAE. This was the beginning of a practice which still continues. At that time there were 39 paid members in the Section. All an ASCE member had to do to become a member of the Section was pay the \$2.00 dues.

W. E. Dickinson was president in 1931. At the April meeting in Tucson there was a special luncheon with the Tucson Chapter of AAE and the Tucson Engineers' Club, at which the elder Thomas Maddock spoke on the Colorado River Problem. A technical session was conducted in the afternoon while the ladies played bridge and another in the evening while the ladies were at the Fox Theatre where Mr. Lemon of Orange was being shown. The dinner meeting was held in conjunction with the University of Arizona Student Chapter. There was some entertainment and some awards were made to students. The records are not too complete throughout the period under consideration but the writer believes that this was probably the start of two practices which continue as of this date. One consists of a selection of the outstanding civil engineering student and awarding him a membership in the Society. The other consists of a student paper presentation contest for which small cash awards are given.

The november meeting was held in Phoenix, the practice being established on holding the annual meeting always in the Fall and at Phoenix. It was held this year in the Hotel Westward Ho, for the first time. The luncheon was in

conjunction with the Phoenix Chapter of the AAE, a practice which now seems to be firmly established and is continuing as of this date. For this particular meeting the Arizona Asphalt Emulsion Company picked up the luncheon tab. It is remembered by this writer that the Allison Steel Company picked up the tab for many of these luncheons, but it is not clear from the records whether this happened during the period of the first twenty-five years, which this paper attempts to cover, or later.

F. C. Kelton was president in 1932. At the annual meeting at Phoenix the noon program was devoted to matters of professional welfare. Dean G. M. Butler, of the University of Arizona, College of Mines and Engineering, and Vic Housholder, were the speakers. Except for the Colorado River problem, which was discussed many times, this was the first session devoted to political, social, or professional problems, but it was not to be the last. Technical programs were the general rule and were never neglected. In these technical programs the whole range of civil engineering activities was covered, including projects in Arizona, current projects of importance elsewhere and all new developments of importance in the civil field. There seems to be no point in discussing technical programs further as an almost complete list of programs is in the files. Furthermore there will be attached hereto a list of the several presidents with brief biographical notes. The writer is most hesitant to add these notes as his knowledge of the several biographies is far from complete. However, as the little he does know as to who these men were may be of interest to some future reader, he will jot it down.

At the spring meeting in Tucson in 1933 there was considerable discussion of the engineering phases of the Reconstruction Financing Commission's (RFC) Public Improvement Program. At the Fall meeting in Phoenix the entire afternoon was spent in the presentation and discussion of the Professional Engineers' Code under the National Recovery Act (NRA), and a salary survey for Arizona for operation under the Engineers' Code. On the Sunday following this meeting Section members journeyed to Yarnell Hill to dedicate a memorial which had been erected in memory of C. C. Small, a long time locator for the Arizona Highway Department.

In 1934 a revision of the Section Constitution and By-Laws, under study for some time, was completed. There also was a report by the Code Committee on the National Code <sup>for</sup> Professional Engineers. Howard S. Reed, a former president, was at that time chief engineer for the PWA for Arizona and New Mexico.



In 1935 there were reports from committees on Legislation, State Planning, National Resources Council, and the Power Survey. What the reports contained I was not able to find out, but the fact that they were made proves that the Section was alive to what was going on at the time.

In 1936, on November 12-14, A District Eleven, ASCE, Convention was held in Phoenix. Daniel W. Mead, national president was there and spoke. Raymond Hill, national director, presided. Raymond's father, L. C. Hill, who served as an engineer (I assume he was the chief engineer) on the design and construction of the Roosevelt Dam, way back in the years 1906 to 1911, was present and spoke on the construction of this dam. Constructing a dam in those days, as far removed from a railhead as was that site, was a considerable problem. But as the details of the construction of that dam are recorded elsewhere in the literature, I will report here only his story about the manner in which the twenty-mule teams, pulling the big cement wagons, got them around the sharp curves on the Apache Trail. When, due to a sharp curve, the tow chain hit the inside mule he would jump over it so that all teams except the lead and wheel would be pulling outward in going around a curve. When the curve was passed the inside mules would jump back over the tow chain.

I find no Spring program for the year 1937. As the first Arizona Conference on Roads and Streets was held in Tucson in March, and as the Section was a joint sponsor, I assume the Spring meeting was combined with this Conference. W. W. Lane, Howard S. Reed, and Vic Housholder, constituted the legislative committee of the Section. They insisted that \$15,000 be appropriated to continue the work on stream gauging and that more money be appropriated for the Water Commissioner's Office. They were successful. They also insisted that one of the two non-medical members of a four-member health commission bill, which was in the hopper, be an engineer. However, the bill failed to pass. Howard Reed made a report on the findings of the Water Resources Committee. Of the 119 members of ASCE in the State in 1937 only 41 paid the \$2.00 entitling them to membership in the Section.

In 1938 a paper was presented, the title of which was "The Planning Survey." I believe this paper must have been a report on the rather extensive State Highway Planning Survey being principally financed by the Federal Government and directed by J. R. Van Horn. Ground water was under study and the Colorado River Problem was still a matter of concern and discussion. It was in this

year that decision was made to standardize the award to the outstanding C. E. Senior selected from the Student Chapter. It was to consist of a plaque and his initiation dues into Society membership. Also in this year arrangements were made for better publicity in the hope of encouraging better meeting attendance.

The president-elect for 1939 wrote to National Headquarters requesting that something be done for the professional welfare of the engineers. The answer came right back substantially as follows: "You are a member and a chairman of a Section. Go ahead and see what you can do." Professional objectives were set as the year's theme but not too much was accomplished. There was a speech by A. W. Rawn on the progress of a National Committee on Professional Objectives. Clyde Myers reported on the ASCE Salary Recommendations. At the November meeting Raymond Hill and Director Leeds discussed the Society policy. It was a rough year for the legislative committee. Vic Housholder, always a member of the legislative committee and generally chairman, submitted a lengthy report which may be briefed substantially as follows: A bill was introduced, presumably at the request of the administration, to take \$250,000 of the gas tax revenue for the purpose of advertising the State. As such an action would have resulted in the State's losing its Federal Aid allotment, it was vigorously opposed by our committee. The next proposal was to take from \$50,000 to \$100,000 from the motor vehicle fees for this purpose. While this might not have caused the State to lose its Federal Aid funds, it was still opposed by our committee. Finally Governor Jones was talked into acceptance of a plan to create a publicity department within the highway department. As this was not in conflict with the Hayden-Cartwright Act, our committee supported it. It passed and the plan is still in operation. A bill to set up a separate registration board for architects was introduced. Because there was no provision in it to dispose of the old registration board for both architects and engineers and as it was not clear what would be the position of the old board, we naturally opposed it. It did not pass. A bill for the reorganization of the highway department passed. It placed maintenance under the supervision of engineers. An enabling act to permit slum clearance passed. Our legislative committee got \$42,000 set up for the biennium stream gauging, underground water studies, and the State Water Commissioner's Office. Also our committee got a professional Board set up to manage the Ft. Grant Boys' School, one member of which was to be an engineer.

The Committee on Classification consisting of Jimmy Girand, Raymond Hill, and Clyde Myers, Chairman, along with Vic Housholder, arranged a meeting with the Highway Commission at which an attempt was made to forestall an announced salary cut for engineering personnel. The effort failed. The Section agreed to be a joint sponsor with the University of an Annual Arizona Land Surveyors' Conference. One meeting of the Conference was held during this year.

In 1940 Vic Housholder, then president of the Section, along with Clyde Myers and Raymond Hill made another call on the Arizona Highway Commission in an attempt to get salaries of professional personnel in the Highway Department raised. This attempt was without success but the Commission did approve a proposal to have a classification study made of Highway Department personnel by an outside expert. Consequently the Section contributed \$300 and the National ASCE \$300 to finance the study. Allen P. Richmond, Jr., was sent from the New York office to make this study and submit a report. Richmond did a nice piece of work, well worth the cost, for the classification alone. The report was noted in the Magazine, Civil Engineering, and drew the attention of the profession throughout the country. It was copied by Highway Departments in a number of other states. The Arizona Highway Commission officially adopted the classification late in the year 1940. The Section, particularly the officers, deserves great credit for this piece of work.

During this year the City of Flagstaff advertised for bids for engineering work necessary for a waterworks project. The officers of the Section were successful in stopping Flagstaff from acquiring engineering services by advertising. The Section met with the Land Surveyors' Conference in October. A report showed that there had been, and was continuing, a careless disregard for land survey monuments by many constructors, particularly road graders. Some committee effort and publicity tended to stop this thoughtless practice. The Section paid \$45 for the publishing of the Proceedings of this Second Land Surveyors' Conference. The Section continued to cooperate with the Conference but not to lend any more financial aid. Annual Conference programs continued for two more years and then were discontinued due to the War.

Also, during this year 1940, there was in a formative stage an organization to be known as the Arizona Association of Engineers. I believe the purpose was to counter the effort of organizers to unionize the engineers, particularly those in the lower ranks. About three hundred members were signed up and a

secretary hired who was to serve this group and the Phoenix Chapter of the American Association of Engineers. This organization had only a short life.

In 1941 a committee was appointed to provide for protection of certain critical facilities in Arizona during wartime. A resolution was sent to the Legislature asking for the continued support of the stream gauging program and one to the National ASCE asking for continuation of the work on Professional Welfare.

The Constitution and By-Laws were amended again in 1942. The Conference on Roads and Streets was held as usual but this was to be the last year until after the War.

In 1943 the State Legislature was trying to effect a solution to the Colorado River Problem and the Section legislative committee gave the Legislature as much help as possible. The professional objectives committee interested itself in employer-employee relations and the threat of unionization of engineers and finally, after much consideration, submitted a report recommending the revision of the Section Constitution in such a way that the Section might become a bargaining unit. The Congress had passed an Act, I believe it was the Wagner Act, which posed a threat, or perhaps I should say a possibility, of professional workers being forced into unions along with labor in the companies in which they were working. Both the Section and the National ASCE were much concerned and very busy trying to prevent professional engineers from being forced into unions where they would be subject to domination by the labor group.

The Freeway Committee submitted a bill to the Legislature to make possible the establishment of freeways in the State. The Post-War Planning Committee submitted a report. The student chapter was not very active, most students being in the armed forces.

In 1944 the committees of 1943 were still active, the threat of unionizing engineers still hanging over the heads of the engineers. Because of this the Section aided in the formation of The Arizona Group of Professional Engineering Employees to become known as TAGPEE. Most of the ASCE members joined this organization but it ceased to exist when the reason for its formation waned.

In 1945 the Section Committee went into action to prevent an attempt to organize the engineers working on Horseshoe Dam. Also in this year a re-employment office was set up in the office of W. H. Becker to aid engineers returning



from the War to get jobs. Allen P. Richmond, Jr. was brought back to the State to bring his classification and salary studies up to date. This resulted in raises of from \$15 to \$100 per month for certain professional classifications in the Highway Department. The Section decided to join the Arizona Coordinating Council of Engineers and Architects to study the State registration law and suggest revision if same seemed to be needed. It was voted to request that the 1947 National ASCE Convention be held in Phoenix.

In 1946 Walter Johannessen was appointed chairman of the 1947 Phoenix ASCE Convention Committee. Many meetings were held to discuss plans. There was considerable talk about the sorry economic status of the civil engineer, still much excitement about the attempts of unions to get engineers into their groups, some talk about the change in membership grades from junior to associate, and a paper concerning the Engineers Joint Council. The Conference on Roads and Streets was revived but for only this one year. There was a District Sections Conference in Phoenix in April but not too much in the files concerning it.

The National ASCE Convention was held in Phoenix in 1947. I attended this Convention and believe it was successful in every way except financially. There does not seem to be much in the files concerning this meeting. I suspect some of the data is still in the files of the engineering firm of Johannessen and Girand but as I have not had an opportunity to dig into these files, what I must report is from memory. I believe the membership was assessed ten dollars each at the outset. Despite this there was a deficit of some five or six hundred dollars which the firm of Johannessen and Girand contributed and agreed to forget. In 1947 there seems to have been a meeting in Yuma but no program found for any Tucson meeting. A resolution was sent to the Federal Government requesting that the salaries of engineering officers be raised in amounts equal to those granted medical officers, also to up the USGS surface waters branch allowance to \$30,000 per year, the State to match. There was talk of cooperation with TACPEE and some correspondence with National Headquarters about organizing local engineers within the area.

Monthly meetings were held in 1948 but discontinued thereafter. There was some discussion about assessing each member of the Section five dollars to make up the 1947 Convention deficit but no information as to any action taken. W. W. Lane presented a paper setting forth the flood danger along the Salt River. This resulted in the sending of a petition to the Corps of Engineers requesting

an investigation and action if the investigation proved a need. Of the 156 ASCE members in the State only 61 belonged to the Section. Section dues were raised from two to five dollars per year for corporate members and from two to three dollars for other members. The relative merits of the registration law in force at that time and a proposed model law were discussed. An attempt was made to set up a local engineers joint council consisting of representatives of the local chapters of the founder societies but the attempt failed when some of the parent societies failed to approve the plan. A resolution directed to the Legislature asked for more money for stream gauging and for funds to build and equip a first-class hydraulics laboratory at The University of Arizona. Also there was a resolution voted calling attention to the fact that the salaries paid by the University to civil engineering personnel were way below the rates set up in the ASCE classification. In answer to this resolution Dean G. M. Butler, of the College of Engineering, sent a three-page letter, the thesis of which was that the salaries paid by The University of Arizona compared well with those paid by other similar schools in the Mountain Area and therefore were not too low. It was not until after Dean Butler retired that anything was done about the salary scales at the College of Engineering.

There is nothing in the files to show that there was much activity along professional lines in the year 1949. I assume that, after the struggles of 1948, the Section was catching its breath. Technical meetings were held as usual in Yuma, Tucson, and Phoenix.

Thus ends this brief report on the activities of the Arizona Section ASCE for the years 1925 to 1949 inclusive. Not much has been said about the technical programs for the last twenty years of this period. Programs are available in the files which show the Section activities in this field.

Respectfully submitted,

John C. Park, Dean Emeritus  
and Professor of Civil Engineering.  
Life Member, ASCE  
1962

ARIZONA SECTION, ASCE  
PAST PRESIDENTS & SECRETARIES

<u>YEAR</u>	<u>NAME</u>	<u>IDENTIFICATION</u>	<u>SEC'Y-TREAS.</u>
1925	G. E. P. Smith ✓	Retired - Irrigation Engr., U. of A. - Nat'l. Committees	W. E. Dickinson
1926	W. W. Lane	Deceased - St. Land Commissioner - State Hwy. Engr. - Chief Engr., Maricopa Cty. Mun. Irr. Dist. No. 1	R. A. Hoffman
1927	J. W. B. Blackman	Assumed deceased - Consultant Left Arizona years ago	" " "
1928	Howard S. Reed	Deceased - Hydraulic Engr. - St. Hwy. Engr. - Dir. PWA, Ariz. and N. M.	" " "
1929	James B. Girand	Deceased - Early Consultant - Head of firm which became Johannessen and Girand	" " "
1930	W. W. Lane	Serving a second term	E. V. Miller
1931	W. E. Dickinson	Dir. Surface Waters Branch, USGS, for Ariz. - Transferred from State	" " "
1932	F. C. Kelton	Deceased - Head C. E. Dept., U. of A.	" " "
1933	R. A. Hoffman	Head Br. Dept. Ariz. Hwy. Dept. many <i>Deceased</i> years - Now consultant	Clyde Myers
1934	E. V. Miller ✓	Head Plans Div., Ariz. Hwy. Dept. - Depu. St. Engr. - Idaho St. Engr. - Consultant	" "
1935	E. S. Borgquist	Prof. C.E., U. of A., Later Head C.E. Dept. <i>Deceased</i>	Jane Rider
1936	J. A. Fraps ✓	Cert. Dams, Ariz. - Res. Engr. Bartlett Dam, U.S.B.R. - U.S. Army Engr. Corps - Cont. Ex.	" "
1937	W. R. Hutchins	Deceased - St. Hwy. Engr. - Real Estate	J. S. Gatewood
1938	Clyde Myers	Deceased - Head Tech. Div. Phoenix Jr. Coll.	W. T. Wishart
1939	J. C. Park	Prof. C.E., U. of A., later Dean Engr. <i>Deceased</i>	" " "
1940	Vic H. Housholder	ARMCO - Nat'l. Pres. AAE <i>Deceased</i>	" " "
1941	J. W. Powers	Head Lab., Ariz. Hwy. Dept. - Left State	W. G. O'Harra
1942	John H. Gardiner	Deceased - Repl. Dickinson as Head Surf. Waters Br. USGS. Later Nat'l. Dir. ASCE	" " "
1943	John A. Carollo	Headman, Ferguson & Carollo, Consult., <i>Deceased</i> Now Carollo and Associates	L. R. Dail
1944	L. O. Fiscel	Many years Pinal Cty. Engr. - Now Cont. <i>Deceased</i>	" " "
1945	W. G. O'Harra ✓	Head, Ariz. Hwy. Dept. Lab. - Later a Nat'l. Dir.	J. A. Baumgartner
1946	Geo. T. Grove	Tucson City Engr. - Pima Cty. Engr. - <i>Deceased</i> Tucson Dir. Pub. Works - Consult.	" " "
1947	Walter Johannessen	Deceased - Johannessen & Girand, Consult. <i>Deceased</i>	" " "
1948	G. L. McLane	Chief Engr., U.S.B.P.R. for Arizona <i>Deceased</i>	V. E. Larson
1949	J. A. Baumgartner	Deceased - With Surf. Waters Br., USGS - To Near East on Spec. Assignment	" " "