



1965
PROCEEDINGS

West Pakistan Engineering Congress

Vol. 48

The West Pakistan Engineering Congress as a body does not hold itself responsible for the opinions expressed in this Volume

Compiled and Published

by

*I. A. S. Bokhari, P.S.E., I, Hony. Secretary
on behalf of the West Pakistan Engineering Congress, Lahore*

*Printed by Mirza Muhammad Sadiq at the Ripon Printing Press Ltd.
Bull Road, Lahore*

Office Bearers and Council Members for 1963—1965

PRESIDENT

Ch. A. Hamid, P.S.E. I.

VICE-PRESIDENTS

Mr. A. G. M. Sheikh, s.s.e. I.
Mr. A. R. Akhoond.
Mr. Sayyid Hamid, P.S.E. I.
Dr. Mubashar Hassan.
Ch. Muhammad Ashraf (upto 3-4-64).
Syed Mehdi Shah (from 4-4-63).

OFFICE BEARERS

Mr. I. A. S. Bokhari, P.S.E. I.	.. (Honorary Secretary).
Mr. Mazhar-ul-Haq Saeed Ahmad	.. (Honorary Joint Secretary).
Mr. Mazhar-ul-Haq	.. (Honorary Auditor).
Dr. Nazir Ahmad	.. (Honorary Editor).
Mr. E. I. Johri	.. (Honorary Business Manager).
Mirza Abdul Latif, P.S.E. I.	.. (Honorary Publicity Manager —upto 3-4-64).
Mr. Iqbal Ahmad Shahab	.. (Honorary Publicity Manager from 4-4-64).
Mr. Muhammad Saleem Akhtar Bhalli	(Honorary Treasurer).

MEMBERS OF THE COUNCIL

Mr. A. Rashid Kazi, S.Q.A., S.S.E. I.	Mr. Jamil Asghar Khan, P.S.E. I.
Mr. A. R. Qureshi, P.S.E. I.	Mr. Atta-ur-Rehman Khan, P.S.E.
Mian Saeed Ahmad, P.S.E. I.	Mr. Tanwir Akhtar Sheikh.
Mr. H. J. Asar, P.S.E. I.	Ch. Mazhar Ali, P.S.E. I.
Mr. S. S. Kirmani, P.S.E. I.	Syed Nazir Ahmad Shah.
Sardar Allah Bakhsh, P.S.E. I.	Syed Faiz Omar.
Mian Muhammad Khalil, P.S.E. I.	Mian Iftikhar-ud-Din.
Mr. Akhtar Hassan.	Mr. Iqbal Ahmad Baig.
Mr. Muhammad Rashid Vehra.	Mr. S. M. Seraj-uz-Zaman, P.S.E. II.
Mian Bilal Ahmad, P.S.E. II.	Mr. A. B. Akhtar.

Names of Past Presidents

- 1912-13. The Hon'ble Sir H. P. Burt, K.C.I.E.
1913-14. The Hon'ble Sir H. P. Burt, K.C.I.E.
1914-15. The Hon'ble Col. R. S. Maclagan, C.B., C.I.E.
1915-16. The Hon'ble Col. R. S. Maclagan, C.B., C.S.I.
1916-17. Col. S. L. Craster, C.I.E.
1917-18. The Hon'ble Mr. D. W. Aikman, C.I.E.
- 1918-19. Mr. F. W. Woods.
1919-20. Mr. A. S. Montgomery.
1920-21. Mr. H. M. Ives.
1921-22. Mr. F. A. Bates.
1922-23. Mr. F. A. Hadow.
- 1923-24. Sir Ganga Ram, C.I.E., M.V.O.
1924-25. Mr. E. R. Foy.
1925-26. Lt.-Col. H. E. C. Cowie, R.E.
1926-27. Mr. A. R. Astbury.
1927-28. Mr. R. P. Hadow.
- 1928-29. Colonel C. Walton, D.S.O., R.E.
1929-30. Mr. W. S. Dorman.
1930-31. Mr. F. C. Pavry.
1931-32. Mr. J. B. G. Smith, C.I.E.
1932-33. R. B. W. C. Chopra.
- 1933-34. Lt.-Col. W. Macrae, R.E.
1934-35. R. B. M. S. Dhody.
1935-36. Mr. D. Macfarlane.
1936-37. Mr. J. D. H. Bedford.
1937-38. R. B. B. N. Singh.
- 1938-39. Mr. D. A. Howell.
1939-40. R. B. B. P. Varma.
1940-41. Mr. R. Trevor Jones, M.C.
1941-42. Mr. A. St. G. Lyster.
1942-43. Sir William Roberts, C.I.E.
- 1943-44. Sir Arthur Griffin, Kt., O.B.E.
1944-45. Mr. F. F. Haigh, C.I.E.
1945-46. Mr. A. M. R. Montagu, C.I.E.
1946-47. R. B. D. K. Khanna.
1949-51. K. B. M. A. Hamid.
- 1951-52. Khan Mohammad Azam.
1952-54. K. B. K. A. Ghafoor.
1954-55. Qazi Zahur Hussain.
1955-56. Mr. A. D. Ashraf.
1956-57. Khan Mohammad Inamullah Khan.
- 1957-58. Mr. M. M. Zubair.
1958-59. Mr. Mir Bashir Khan.
1959-60. Mr. S. I. Mahbub.
1960-61. Mr. Ghulam Sadiq Khan.
1961-62. Mian Abdul Aziz.
- 1962-63. A. Rashid Qazi, S.Q.A.



Ch. A. HAMID, P.S.E. I.
General Manager, Power, WAPDA
President, West Pakistan Engineering Congress
1963—1965

CONTENTS

	Pages
PAPER No. 363 Slurry Trench Method of Cut-off —Ramiz Ahmed Malik	.. 1—14
PAPER No. 364 Marala Headworks—Site Investigation —H. J. Asar	.. 15—38
PAPER No. 365 The Engineering Profession in Pakistan —S. S. Kirmani	.. 39—54
PAPER No. 366 Village Electrification Through Micro-Power Plants on Canal Falls —Mohi-ud-Din Khan	.. 55—72
PAPER No. 367 Design of a New Road Bridge over Jhelum River Near Jhelum —Abdus Salam	.. 73—102
PAPER No. 368 An Estimate of Evaporation from Free Water Surface in West Pakistan —Nazir Ahmad, Mohammad Sarfraz and Mohammad Akram	.. 103—134
PAPER No. 369 Operating Bambanwala Ravi Bedian Depalpur Link Canal in 1961 —Mohammad Ali Chaudhry	.. 135—159
PAPER 370 Highway Financing in Pakistan —Saleem Akhtar Bhalli and Muzaffar Iqbal Sheikh	.. 161—169
PAPER No. 371 Financial Planning of Water Supply Schemes —Iqbal Ahmed Beg	.. 171—187
LIST OF PREVIOUS PAPERS	.. 189—206
LIST OF AWARDS	.. 207—210