95/01896 Cooling
Roth, H. W. *Elektrowarme,* Jun. 1994, 52, (2), 53-71. (In German)
Presents five articles describing modern cooling systems.

95/01897 Correlation of convective vaporization on banks of plain tubes using refrigerants
Webb, R. L. and Chien, L. H. *Heat Transfer Engng.,* Jul.-Sep. 1994, 15, (3), 57-69.
The article provides a correlation for convective vaporization on banks of plain tubes. New data are provided for R-113 and R-123 vaporization on 16.8-mm-O.D. tubes over a wide range of vapour qualities (0.1 to 0.9) with low mass velocities (8 kg/m^{2}s to 40 kg/m^{2}s) for a wide range of heat flux. The correlation is based on three data sets: the present data, the R-113 data of Cornwell and Scoones, and that of Jensen and Hsu. The asymptotic model (exponent of 3) provided the best correlation, having a mean square error of 14.6%. The asymptotic-type correlation provided better results than the superposition model.

95/01898 Correlations for predicting the air-side Nusselt number and friction factors in chilled-water cooling coils
Mirth, D. R. and Ramadhyani, S. *Experimental Heat Transfer,* Apr.-Jun. 1994, 7, (2), 143-162.
Describes an experimental study carried out to determine Nusselt numbers and friction factors on the air side of wavy-finned, chilled-water cooling coils.

95/01899 Delay time determination using an artificial neural network
Huang, S. H. and Nelson, R. M. *Paper No.NO-94-8-1, ASHRAE Trans.,* 1994, 100, 831-840.
Describes an artificial neural network approach to determine the delay time of a heating, ventilation and air conditioning plant to respond to control actions. Results show that artifical neural networks can be used to effectively determine the delay time for heating, ventilation and air conditioning.

95/01900 Discussion on surface condensation in free convection cooling baffles
Liu, Y. and Johannesson, G. A. *Energy & Buildings,* 1994, 21, (3), 245-250.
Cooling with free convection cooling baffles has attracted increasing interest in Sweden in recent years. Risk of surface condensation is a practical restriction. Consequently, it is required that the chilled inlet water temperature of a cooling baffle must be higher than a room air dew-point temperature, and this is at the expense of lessening the cooling capacity. In this paper, the authors discuss the surface condensation problem in the free convection cooling baffle system, simulate its operation under different conditions and introduce a new method to prevent dripping of condensate water using a highly absorptive paint.

95/01901 Energy performance evaluation of fenestration patterns in non-daylit peripheral office spaces
Abdou, O. A. *Paper No.3775, ASHRAE Trans.,* 1994, 100, 390-401.
The paper discusses the influence of the building envelope, especially the glazed part, on the annual hourly energy loads of peripheral office spaces under variant climatic conditions.

95/01902 Energy-efficient retrofitting of office buildings
Nilsson, P. E. *et al., Energy & Buildings,* 1994, 21, (3), 175-185.
A number of energy-saving retrofit measures are simulated on a base-case building situated in Stockholm, Sweden. The base-case building is modelled on an existing building, and data for the thermal resistance of the building envelope as well as data for internal heat gains, are derived from the actual building. The retrofit measures studied range from single measures carried out on the HVAC system or on the building envelope, to combined measures carried out on the HVAC system and the lighting system simultaneously. Sensitivity analyses using an alternatively designed base-case building, have also been carried out. The simulation results show that substantial energy savings can be achieved.

95/01903 Enhance the efficiency of air conditioning
Channon, D. *Energy in Buildings & Industry,* Nov.-Dec. 1994, 13, (10), p. 64.
Describes the new BEMS signalling system which will enhance the effectiveness of air conditioning.

95/01904 European domestic heating update – German domestic pumps
Giles, J. A. and Whittome, S. a. *Report EDH2/4/1, BSRIA, Old Bracknell Lane West, Bracknell, Berks. RG12 7AH, UK, 1994, 16 pp.*
A report forming part of a European study on domestic central heating products across the larger European countries, known as the European Domestic Heating Study. Analyses the German domestic pump market. Supplies tables of statistics and information plus addresses of German pump suppliers.

95/01905 European domestic heating update – German radiators and domestic heat emitters
Giles, J. A. and Whittome, S. A. *Report EDH2/3/1, BSRIA, Old Bracknell Lane West, Bracknell, Berks. RG12 7AH, UK, 1994, 37 pp.*
A report forming part of a European study on domestic central heating products across the larger European countries, known as the European Domestic Heating Study. Analyses the German radiators and domestic heat emitters market. Supplies tables of statistics and information plus addresses of German radiator and other heat emitter suppliers.

95/01906 European domestic heating update – Italian radiators and domestic heat emitters
Giles, J. A. and Whittome, S. A. *Report EHD3/3/1, BSRIA, Old Bracknell Lane West, Bracknell, Berks, RG12 7AH, UK, 1994, 35 pp.*
A report forming part of a European study on domestic central heating products across the larger European countries, known as the European Domestic Heating Study. Analyses the Italian radiators and domestic heat emitters market. Supplies tables of statistics and information plus names addresses of radiator suppliers in Italy.

95/01907 European domestic heating update – Spanish radiators and domestic heat emitters
Giles, J. A. and Whittome, S. A. *Report EHD6/3/1, BSRIA, Old Bracknell Lane West, Bracknell, Berks, RG12 7AH, UK, 1994, 25 pp.*
A report forming part of a European study on domestic central heating products across the larger European countries, known as the European Domestic Heating Study. Analyses the Spanish radiators and domestic heaters market. Supplies tables of statistics and information plus names and addresses of Spanish radiator suppliers.

95/01908 European domestic heating update – United Kingdom domestic pumps
Giles, J. A. and Whittome, S. A. *Report EHD5/4/1. BSRIA, Old Bracknell Lane West, Bracknell, Berks, RG12 7AH, UK, 1994, 19 pp.*
A report forming part of a European study on domestic central heating products across the larger European countries, known as the European Domestic Heating Study. Analyses the UK domestic pumps market. Supplies tables of statistics and information plus addresses of pump suppliers and distributors in the UK.

95/01909 An experimental study on the initiation and growth of frost formation on a horizontal plate
Sahin, A. Z. *Experimental Heat Transfer,* Apr.-Jun. 1994, 7, (2), 101-119.
An experimental study was made to clarify the fundamental nature of the early stage of crystal growth period of frost formation phenomena. The effect of four dominant parameters on frost formation, namely, plate temperature, air temperature, air humidity ratio, and Reynolds number, are demonstrated through several frost formation properties such as frost height, frost deposition rate, and frost density. The thickness of the frost layer is affected primarily by the air humidity ratio, plate temperature, and air temperature, while the effect of Reynolds number is less significant. High humidity ratio, Reynolds number, and temperature difference between the air stream and the plate all yield high mass deposition rates. Frost density depends primarily on frost surface temperature, besides the other parameters.

95/01910 Faber and Kell's heating and air conditioning of buildings. Eighth edition
Martin, P. L. and Oughton, D. R. *Butterworth-Heinemann Ltd., Linacre House, Jordan Hill, Oxford OX2, 8DP, UK, £60.00, Jan. 1995, 704 pp.*
This long established work is accepted as the most practical and comprehensive volume on heating and air-conditioning design and is a standard reference book for both students and practitioners. Faber and Kell's has for over 50 years been accepted as the most practical and comprehensive book on heating and air conditioning. In order to provide up-to-date information, this eighth edition has been revised to include the latest changes to system design and covers many aspects in greater depth, whilst still retaining the character of previous editions. Building service engineers, architects and others involved in the construction industry will find no better place for easily accessible and assimilable information on all aspects of the heating and air conditioning of buildings. Includes up-to-date information on the changes to the Building Regulations relating to energy conservation.

95/01911 Feature – Air handling units
Samuelsson-Brown, G. *et al., Bldg. Serv. Environ. Engr.,* Aug. 1994, 17, (12), 17-26.
A series of articles examine aspects of air handling units, including their market in the UK.