[5] D.M. Webber and P.W.M. Brighton, Similarity Solutions for the Spreading of Liquid Pools, UKAEA Report SRD R 371, 1986.
[6] D.M. Webber and P.W.M. Brighton, An Integral Model for Spreading, Vaporising Pools derived from shallow-layer Equations, UKAEA Report SRD R 390, 1987.

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Dear Editor,

We appreciate the comments provided by Dr. Webber in that they identify an alternative methodology for estimating pool spread that was not available at the time we developed the Liquid Spills Model (LSM). As we indicated in our paper [1], the pool spread model presented by Shaw and Briscoe [2] ignores viscosity and surface tension effects and, therefore, may not be valid for highly viscous materials. Most spills that are of concern because of rapid evaporation, however, are of lower viscosity and thus the Shaw and Briscoe model approximation is likely to be an adequate representation for pool spread.

As part of our validation of LSM, we compared the predicted pool radius to the reported values from the Burro field tests [3]. As shown in Table 1, predictions from LSM for equilibrium pool radius were found to be within 18% of Burro observations with an average difference of just 11.7%. (The equilibrium pool radius from the Burro tests was estimated using the pool area and time at the point designated as "equilibrium boil-off".)

Comparisons of predicted to measure pool spread for the mode referenced by Dr. Webber [4] appear to indicate similar aggrement to that achieved by LSM, with a maximum variation of about 13%. Exact comparison is difficult, however, since Dr. Webber's papers include graphical rather than tabular comparisons.

Thus, we believe that while there may now be alternative and perhaps more sophisticated models for pool spread than were available when LSM was developed, the approach used in LSM appears to be adequate in simulating petroleum liquid spills of the type which may be a concern due to evaporation and cloud formation.

Table 1

Expt.	t (s)	Observed	LSM Prediction	% Error
Burro-4	33	12.3	13	5.4
Burro-5	32	12	13.9	15.4
Burro-7	35	13.5	14.8	9.8
Burro-8	36	14.1	15.6	10.7
Burro-9	38	15.1	17.2	17.4
			Avg. Percent Error	11.7

[1] T.A. Cavanaugh, J.H. Siegell and K.W. Steinberg, J. Hazard. Mater., 38 (1994) 41.
[2] P. Shaw and F. Briscoe, Evaporation from Spills of Hazardous Liquids on Land and Water, United Kingdom Atomic Energy Auhority, 1978.
[3] Burro Series Data Report LLNL/NWC, 1980 LNG Spill Tests, Lawrence Livermore Laboraory UCID 19075, 1982.
[4] D.M. Weber, J. Loss Prev, 4 (1991) 5, Fig. 7.

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