

Letters to the Editor

Dear Dr. Griffiths,

I read with interest the paper by H.G. Stinton which was published in the *Journal of Hazardous Materials*, March 1983, concerning the Spanish camp site disaster.

Mr. Stinton correctly points out that the road vehicle was overloaded with cold LPG by more than 4,000 kg (approximately 15%) and no operable high pressure relief system was available. We now know of course that after about 2½ hours in transit under a hot Spanish sun catastrophic failure of the tanker shell occurred.

The author highlighted lessons to be learned from this incident and drew a number of conclusions. On consideration, however, it seems strange that Mr. Stinton has omitted any reference to the need to introduce strict industrial management controls to rule out the possibility of overfilling such vehicles.

The author mentions the excellent safety record in the United Kingdom with no loss of life in the last year during which time LPG products have been carried over 30 million miles on British roads.

I must highlight that it has been by applying strict standards of management control that the Industry has achieved this excellent record. Experience shows that great emphasis must be placed on the human element if any accident prevention campaign is to be successful.

Yours sincerely,

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(13 April, 1983)

Dear Sir

I have read with interest the article entitled "Spanish Camp Site Disaster" by Mr. H.G. Stinton, published in the March 1983 issue of your journal. This appears to be similar to previous articles by Mr. Stinton on this subject, published in other journals, but I note that it has been updated by reference to the findings of the Spanish Court.

However, what is both surprising and regrettable is that the article does not make any mention of the Dangerous Substances (Conveyance by Road in Road Tankers and Tank Containers) Regulations 1981 which were made in July, 1981, and came into force on 1 January, 1982. I note that the article was submitted in May, 1982, and, considering that it was not published until March, 1983, it gives a completely wrong picture of the statutory position in Great Britain.

These Regulations were already being drafted at the time of the Spanish disaster, and a consultative document was subsequently published in March, 1979. Partly due to the adverse criticism received on the proposals concerning the conveyance of dangerous substances in packages, but also due to the Spanish Disaster, it was decided to make separate regulations concerning conveyance in road tankers and tank containers and conveyance in packages. It was also decided, as a result of this disaster, that priority should be given to the making of regulations concerned with road tankers and tank containers.

The article raises the question "could a similar explosion happen in the United Kingdom" and gives a definite answer of "yes". I would submit that with the advent of the new Regulations the answer should now be "no". Regulation 6 covers the design and construction of tankers and Regulation 7 covers the examination, testing and certification of tankers. This latter regulation does not come into force until 1 January, 1984, but the combined effect of these and Regulations 11 and 12 dealing respectively with precautions against fire and explosion and against overfilling, should be the prevention of similar disasters in Great Britain.

I have specifically referred to Great Britain because the Regulations referred to do not apply in Northern Ireland. Similar regulations are, however, about to be made which will have the same effect in Northern Ireland.

Yours faithfully,

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 U.K.*

(18 April, 1983)

Dear Sir

I refer to the letter from Mr. M.G. Sewell of the Health and Safety Executive regarding my article on the Spanish Camp Site Disaster. I find it necessary to make a few comments in reply to several of the points made by Mr. Sewell.

The article was first written in 1978 and updated from information obtained from Spain following certain court cases which were heard resulting from investigations by the Spanish Authorities. The fact that legislation followed in the U.K. did not bear heavily on any of the comments made by me regarding the possibility of such an accident happening in the U.K. which could be similar to the Spanish disaster, and my opinion still stands, regardless of our new Regulations, that a similar set of circumstances could develop in this country and could produce a Spanish disaster situation. I fully appreciate that the Regulations referred to have gone a long way in minimising accidents and they are welcomed by all who are connected with hazardous substance transport safety in this country.

It is difficult on occasions for people to fully understand how disasters occur and in many cases the public assume that by enforcing legislation the accident will not happen or will go away. I personally do not find it difficult to produce a scenario which could give us a disaster situation similar to the Spanish case.

Firstly, let us imagine a tanker from the continent carrying LPG being transported on a cross channel ferry and off-loaded at a South Coast port. This vehicle would be outside our Regulations but could transport its load within the U.K. As there is nothing mandatory about pressure relief valves on continental tankers, it is possible to have its pressure relief valve blanked off. Like this country, tankers are manually loaded at refineries and therefore overloading is still possible both in Europe as well as the U.K. If all this occurred on a hot summer day we could have a possible disaster situation if the tanker was involved in a road traffic accident and fire broke out involving the vehicle.

If an overloaded tanker was in a fire situation with no pressure relief valve, the walls of the tanker could be subjected to not only gas pressures, but the hydraulic pressure from the expansion of the liquid could burst the tank allowing the liquid to run out unrestricted and vaporise, causing an unconfined vapour cloud explosion or a boiling liquid expanding vapour explosion. The fact that the Spanish tanker was corroded would not make much difference in this situation. I feel that this situation is quite feasible and one that our Regulations have done nothing about.

Secondly, I still feel quite strongly about the overloading possibility of LPG tankers in the U.K. regardless of the new Regulations. We still have manual loading at refineries and where we have the human element involved in this practice, overloading can occur. I do appreciate fully and have knowledge of the sophisticated equipment recently installed at a local refinery to overcome this overloading problem and I am also aware that the tanker should never leave the refinery in an overloaded state, but no-one can give me a categoric

assurance that this cannot in practice happen. I can quote one case where a tanker was overloaded with LPG liquid to such an extent that the liquid flowed out of the relief valves before it was noticed. When this occurs a disaster situation is always possible.

I fully appreciate that the Regulations will help and they are welcomed, but I am still not convinced a disaster situation involving LPG is not possible regardless of the new Regulations.

Perhaps Mr. Sewell would like to write an article for your Journal giving us his views on how impossible it is for an LPG disaster to occur in the U.K. now that we have the Dangerous Substance (Conveyance by Road in Road Tankers and Tank Containers) Regulations 1981 and which are now in force.

Yours faithfully

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(25 April, 1983)