



Flame and Fury

by Gil Dowdall-Brown

Although we now know that Hitler had no serious intent to invade Great Britain in 1940, Home Forces, without the benefits of hindsight and in anticipation of the worst possible case, could not have known that, and sought by every means to provide defences against invasion. The stunning success of the Panzer divisions in the subjugation of France and the Low Countries posed a particular threat and called for particular measures in anti-tank defence.

Apart from the more conventional defences such as all the varied types of obstacle and the existing anti-tank weaponry, Home Forces came up with some unconventional ones too. Of these, we are concerned in this article with flame. Most interested readers will know the stories of charred and blackened corpses of German soldiers washed up on the East Anglian shores at Shingle Street, victims of a failed invasion attempt. Actually, during the entire war, four German corpses in all washed up at Shingle Street and they were the remains of Luftwaffe crewmen shot down over the sea. The stories of scores of charred bodies were just that - stories. The Psychological Warfare Department had concocted the black propaganda by way of encouraging the reluctant Wehrmacht. They might however, have suffered the same gruesome end if they had actually invaded. For burning beach systems did exist, lengths of piping just beyond the tide line together with flame barrages inland. For the record, these systems were operated by the Army, while the Admiralty had its own set of systems for the defence of ports and harbours against surface vessels. I am indebted to Roger Thomas of English Heritage for information about the flame defences at the port of Barry, South Wales. There were twin-nozzle installations at the quay ends, and single-nozzle flame guns at other points along the quayside. They had ninety degrees of traverse and thirty degrees of elevation and depression. However, a more detailed description is outside my remit.

Anti - vehicle flame weapons were of two main

types: the barrel flame trap and the flame fougasse. The word fougasse is french and in military terms actually means a small mine; however colloquially it means a dirty or underhand trick. Not inappropriate one might think.

Both weapons relied for success on concealment together with suitable siting, which differed according to the weapon of choice. Also, both used the same principle of an explosive charge, to expel burning fuel from a drum at a target. The difference lay with the drum, which in the case of the fougasse remained in situ, whereas in the barrel trap the drum was flung into the air and towards the target rather like a gigantic mortar bomb. The object of these incendiary devices was to engulf the enemy vehicle in fire so as to incinerate or suffocate the occupants, or at least to make them abandon the vehicle. Therefore it was crucial to site the devices where the vehicle would have to slow down, or even stop. A roadblock or other obstacle would do, or a bend in the road. It is axiomatic that any obstacle must be covered by fire (of course the trap would be fired by remote control), so there would be field defences or a pillbox close by. In any case, escaping crewmen must be dealt with. The other factor was concealment, especially in the case of the fougasse.

The two weapons used the same sort of steel drum with which we are familiar today; they can be seen at any roadworks which is what some of the barrel types were purporting to be. They contained 40 gallons of inflammable liquids, ideally 40% petrol to 60% gas oil, but whatever mixtures of petrol plus creosote, diesel oil and other types of fuel oil were available, were used. The barrel trap shot up into the air, split open and released a sheet of flame over the target, while the fougasse spurted out a jet of flame at the target like a flame thrower. In both cases the charge consisted of a guncotton primer together with an igniting element wrapped in rubber inside a tin. A former Home Guard told me that to protect the charges against moisture, the products of Messrs Durex and The London Rubber

Company were used. They used to hope that the Wehrmacht would arrive either on a Saturday or a Sunday, so as to give an appropriate answer to the traditional barber's question "something for the weekend, sir?". Sadly, they proved to encourage condensation and had to be replaced. Both types of trap were fired remotely using cables.

There were two types of barrel flame trap, the demigasse and the hedgehopper. In the former, the drum was laid on its side, one round end facing the enemy; the rear rib was directly over a hole containing the charge and detonator. On firing, the drum would catapult into the air, split and release a sort of catherine wheel of blazing fuel over the target and drop on or in front of the vehicle, spreading a lake of fire in the road.

The flame fougasse was more complicated in that it required much more digging and concealment. They were intended to be earth-set or encased in a purpose-built concrete block and incorporated into a roadblock or similar. I am not aware of the survival of any examples of the latter, but if any member of RMARG or PSG does, would he or she please write in with its location. Earth-set locations are unlikely to have survived in numbers but were of four types. As the end result was directional it was essential that the drum was firmly embedded into the ground so that the stream of fire went where it was meant to (see diagram). The four types were:

The totally enclosed type had the business end covered by earth. It was charged and ready for use at all times.

The open ended type was similarly buried but the end was concealed only by camouflage materials. The charge was at the rear and well backed up by packed earth. This also was primed for use at all times.

The tunnelled type was used in an existing bank or cutting where a tunnel was dug to take the fougasse, with a little hole at the end to take the charge. The tunnel was then refilled with earth and the opening concealed. Again this fougasse was charged and primed for immediate use.

The safety type was dug in as usual, but minus its charge. Provision for this was a pipe going vertically down the back of the drum into which the charge could be inserted at need. The pipe was damp proofed at top and bottom. When fired, the fougasse squirted out a jet of flame some 6 feet wide for about 25 yards. Its firing point was sited about 100 yards away, in the open but much less if there was a trench, or better yet a pillbox.

Both flame traps and fougasses were to be sited in batteries. Four barrels was the minimum number in a group, with a distance of at least four feet between each. This was to obviate barrels colliding in flight and veering off target in the case of the hedgehopper, and also for the concentrated effect. It was crucial that fougasses were sited to within 10 yards of the targetted area, since a greater distance reduced the effective fuel splash by half.

In the close country of Devon and Cornwall with its narrow lanes lined by tall banks and hedges (very similar to the Normandy bocage), the Home Guard had their own devices of pipes let into the banks under the lee of an obstacle. Tank-fed petrol would be sprayed onto the halted vehicle and ignited. Tests were entirely successful.

In the early days, experiments had been conducted with a primitive stirrup-pump type of manual flamethrower. This must have been in the highest degree dangerous to the operator, and the experiment was soon abandoned. Another hand pump device, the Harvey Flamethrower followed, which was apparently more sophisticated, although the pressure pumping of flame still lay in the future. The Harvey Flamethrower was in turn succeeded by the devices described above, which were intended to be remotely fired from some safe distance. Again I have no details of these hand-held weapons and would be grateful if any reader could supply them, care of the editor.

All these flame weapons were to be operated by the Home Guard. There are those historians who maintain that the Home Guard was as one Devon HQ said at the war's end,... "one gigantic bluff". Rather like pillboxes, it was "visible manifestation

that something was being done to reassure the populace. If Hitler had invaded, they would have been swept aside". No doubt true in part, but I do not wholly agree with the premise. What I do think is that it would have taken a lot of flame weapons to deter a Panzer Division in full cry, and it was just as well for the men serving them that they were never put to the test.

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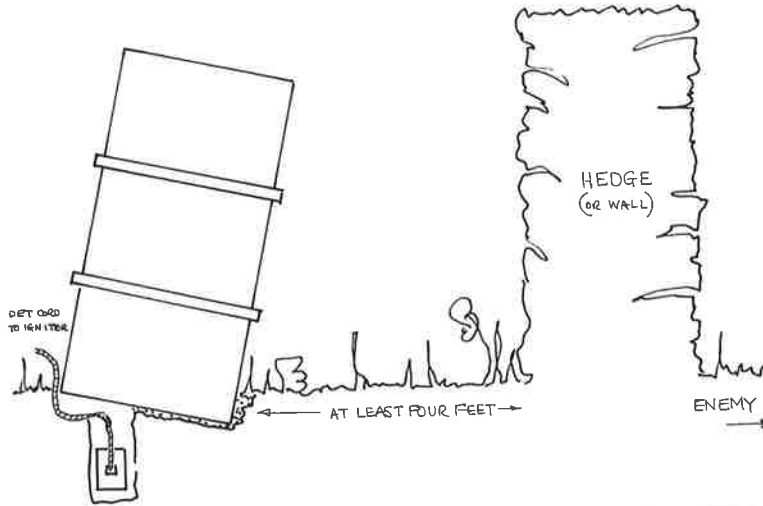
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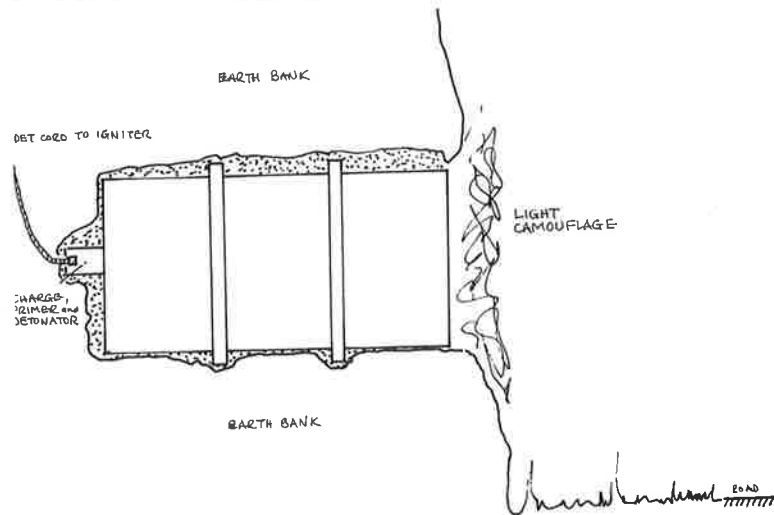
Drawings based on 20th Century Fortifications in England, Vol. II.

(CBA)

The Hedgehopper



Flame Fougasse



Demigasse

