CORRESPONDENCE

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Bilateral Uterine Displacement Device

To the Editor:—To prevent aortocaval compression during cesarean section, several inflatable devices have been described. Redick proposed the use of a 3-l urologic irrigation solution bag connected to a sphygmomanometer bulb. Wagner and Graner suggested a similar device that allows oxygen from the anesthesia machine to inflate the bag via the regular iv-administration set. The fact that left uterine displacement (LUD) and occasionally right uterine displacement (RUD)* is physiologically preferred to the supine position was considered by us in creating the bilateral uterine displacement device.

Our apparatus consists of two 3-l bags, stiff tubing (such as the type used for urologic or arthroscopic fluids), and a connector from an endotracheal tube #7 (fig. 1). The use of two bags, one under each hip, allows for quick LUD or RUD conveniently toward the side on which the operator stands. The connector allows immediate oxygen inflation of the selected bag directly from the anesthesia machine; therefore, the need of the sphygmomanometer bulb suggested in the past is completely eliminated.

In addition, the use of stiff tubing protects it from accidental occlusion or kinking by the patient lying on it.

We also believe that our application could be used intraoperatorily, not only in obstetrics but also in the case of morbid obesity or large abdominal or pelvic tumors, to counteract similar pathophysiologic changes induced by the supine position.

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Alarms: Help or Hindrance?

To the Editor:—The increase of intraoperative monitoring devices has been accompanied by an increase in the number of audible alarms in the operating room environment. Most audible alarms are loud, produce continuous noxious signals that cannot be adjusted or silenced, and are mostly designed for use in the intensive care unit, where signals audible some distance from the patient might be useful. The potential hazards associated

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with several loud alarms signalling in close proximity to 
one another and the confusion that this can create in 
tensive care unit personnel has been recognized by Hayes 
and Kerr.\textsuperscript{1} Alarms of this type are out of place in the 
operating theater, where an anesthetist attends to only 
one patient and needs no signal audible at a distance. An 
audible alarm that quickly rather than loudly calls atten-
tion to a problem, that can be adjusted to signal over the 
desired range of the parameter measured, and that has a 
volume control and a temporary silencing mode is one 
that will be used routinely and not circumvented. In times 
of emergency it is more effective for anesthesiologists to 
 immediatly deal with a problem called to their attention 
by a pleasant sound than it is to waste effort in silencing 
a noxious signal.

Presently, manufacturers of monitoring equipment can 
incorporate any quality of sound in audible alarms regard-
less of whether that sound is used in other equipment. 
Confusion occurs regularly in our operating theater in 
trying to distinguish the audible signal of our continuous 
infusion pumps from that of our oxygen analyzers. Con-
fusion increases as the number of pieces of equipment 
with audible signals increases. During one recent opera-
tion for aortic reconstruction, 12 audible alarms on an-
esthetic and operating room equipment were counted, of 
which only 8 could be identified by the staff anesthesi-
ologist present. Aircraft industry studies have shown that 
humans do not learn and remember the significance of 
more than six to seven sounds.\textsuperscript{1} This suggests that the 

number of audible signals used in the operating room 
should be limited to only certain physiologic functions 
and equipment. The quality of those audible signals should 
be standardized. For example, the alarm that signals 
"failure to ventilate" should be different from that which 
signals "delivery of a hypoxic gas mixture," and both 
should be readily recognizable to all anesthesiologists.

The increase in new monitoring equipment used in the 
surgical suite may be impairing the function of the most 
important monitor, the anesthesiologist. We suggest that 
standards for operating room alarm systems be developed 
to insure the effective application of new monitoring 
technology and to prevent the introduction of systems 
that create problems due to the cacophony associated with 
their use.

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\textbf{Alarms that Speak}

\textit{To the Editor}—The recent letter by Samuels,\textsuperscript{1} which 
relates to the cacophony of noises generated by multiple 
alarm systems, is a forecast of future problems. As 
more and more monitoring equipment is advertised 
in the pages of \textit{ANESTHESIOLOGY}, one can only look for-
ward to more beeps and banshee howls, to the bafflement 
of the anesthesiologist and the irritation of the surgeon. 
I own an alarm clock that talks, and one company manu-
factures a "user friendly" camera that speaks—in English. If a small camera can contain enough memory to 
remind me verbally to advance the film, put in new film, 
or use a flash, surely it is not beyond the capability of 
biochemical engineering to use the same principle to warn 
me of decreasing \(F_{102}\) or hypotension. In addition, if Dr. 
Samuels really wants to hear "Galway Bay," then I am 
sure a suitable vocal arrangement is also possible.

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