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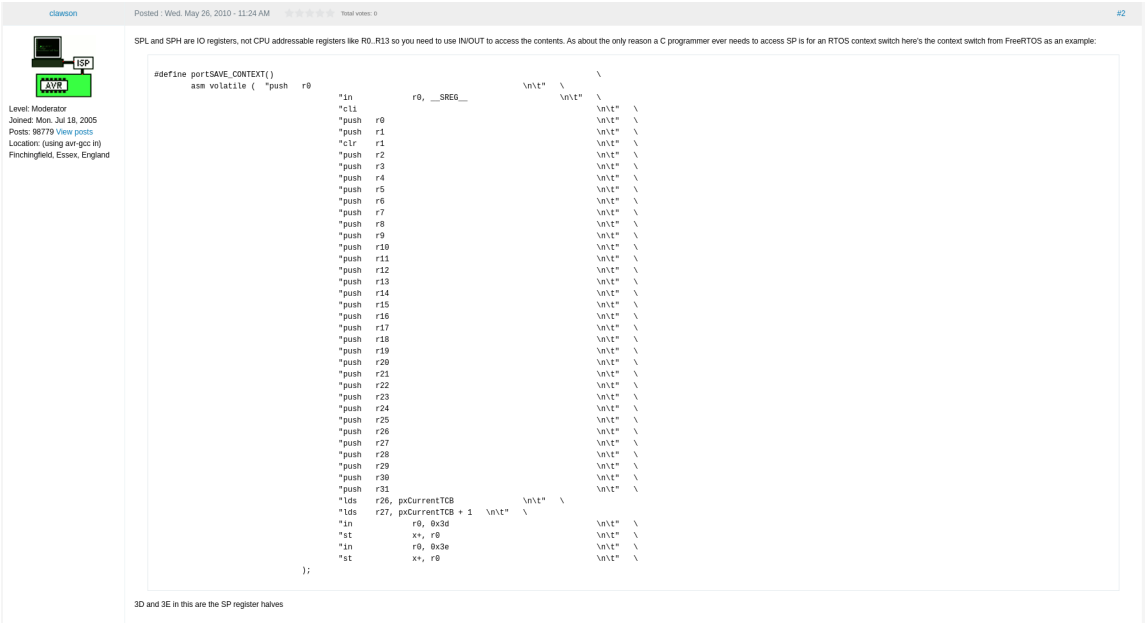

clawson — Posted : Wed. May 26, 2010 - 11:24 AM — Total votes: 0 — #2

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SPL and SPH are IO registers, not CPU addressable registers like R0..R13 so you need to use IN/OUT to access the contents. As about the only reason a C programmer ever needs to access SP is for an RTOS context switch here's the context switch from FreeRTOS as an example:

```
#define portSAVE_CONTEXT()                                                  \
        asm volatile (  "push   r0                                  \n\t"   \
                        "in             r0, __SREG__                \n\t"   \
                        "cli                                        \n\t"   \
                        "push   r0                                  \n\t"   \
                        "push   r1                                  \n\t"   \
                        "clr    r1                                  \n\t"   \
                        "push   r2                                  \n\t"   \
                        "push   r3                                  \n\t"   \
                        "push   r4                                  \n\t"   \
                        "push   r5                                  \n\t"   \
                        "push   r6                                  \n\t"   \
                        "push   r7                                  \n\t"   \
                        "push   r8                                  \n\t"   \
                        "push   r9                                  \n\t"   \
                        "push   r10                                 \n\t"   \
                        "push   r11                                 \n\t"   \
                        "push   r12                                 \n\t"   \
                        "push   r13                                 \n\t"   \
                        "push   r14                                 \n\t"   \
                        "push   r15                                 \n\t"   \
                        "push   r16                                 \n\t"   \
                        "push   r17                                 \n\t"   \
                        "push   r18                                 \n\t"   \
                        "push   r19                                 \n\t"   \
                        "push   r20                                 \n\t"   \
                        "push   r21                                 \n\t"   \
                        "push   r22                                 \n\t"   \
                        "push   r23                                 \n\t"   \
                        "push   r24                                 \n\t"   \
                        "push   r25                                 \n\t"   \
                        "push   r26                                 \n\t"   \
                        "push   r27                                 \n\t"   \
                        "push   r28                                 \n\t"   \
                        "push   r29                                 \n\t"   \
                        "push   r30                                 \n\t"   \
                        "push   r31                                 \n\t"   \
                        "lds    r26, pxCurrentTCB               \n\t"   \
                        "lds    r27, pxCurrentTCB + 1   \n\t"   \
                        "in             r0, 0x3d                    \n\t"   \
                        "st             x+, r0                      \n\t"   \
                        "in             r0, 0x3e                    \n\t"   \
                        "st             x+, r0                      \n\t"   \
                );
```

3D and 3E in this are the SP register halves