CLAIMS

1. A system configured to move a ram block in a blowout preventer, the system comprising:

a first bank of accumulators configured to provide a first pressure to move the ram block;

a second bank of accumulators configured to provide a second pressure to move the ram block, wherein the second pressure is greater than the first pressure; and

a controller configured to sequentially control the first bank of accumulators to apply pressure to move the ram block and to then control the second bank of accumulators to move the ram block after the first bank of accumulators has moved the ram block a first distance.

2. The system of claim 1, further comprising:

a sensing means in communications with the controller, the sensing means configured to determine a location of the ram block.

3. The system of claim 2, wherein the sensing means is at least one of a pressure sensor and a position sensor.

4. The system of claim 1, wherein the first distance is a distance traveled by the ram block from an initial open position to a position proximate to either a tool or a drill string.

5. The system of claim 1, further comprising:

a first valve configured to open and close the first bank of accumulators, wherein the first valve is in communications with the controller; and

a second valve configured to open and close the second bank of accumulators, wherein the second valve is in communications with the controller.

6. The system of claim 1, wherein the controller is located on a multiplexor (MUX) pod.

7. The system of claim 6, wherein the controller comprises:

a processor for executing software instructions for controlling the first and second banks of accumulators for moving the ram block; and

a memory which stores the software instructions.

8. The system of claim 1, wherein the second bank of accumulators are configured to be connected to an entire pressure system as to selectively allow use of the second bank of accumulators with other rams and well functions.

9. The system of claim 1, wherein the ram block is a shear ram block located in the blowout preventer.

10. A system configured to shear an object in a blowout preventer, the system comprising:

a pressure sensor configured to monitor a first pressure applied on a ram block of the blowout preventer and to transmit a signal representative of the first pressure to a controller;

a first bank of accumulators configured to provide a second pressure to move the ram block until the ram block is substantially in contact with the object;

a second bank of accumulators configured to provide a third pressure to move the ram block to shear the object, wherein the third pressure is greater than the second pressure; and

the controller is configured to sequentially control the first bank of accumulators to move the ram block until the first pressure reaches a predetermined value and to then control the second bank of accumulators to move the ram block to shear the object.

11. The system of claim 10, wherein the object is at least one of a tool or a drill string.

12. The system of claim 10, further comprising:

a first valve configured to open and close the first bank of accumulators, wherein the first valve is in communications with the controller; and

a second valve configured to open and close the second bank of accumulators, wherein the second valve is in communications with the controller.

13. The system of claim 10, wherein the controller is located on a multiplexor (MUX) pod.

14. The system of claim 13, wherein the controller comprises:

a processor for executing software instructions for controlling the first and second banks of accumulators for moving the ram block; and

a memory which stores the software instructions.

15. The system of claim 10, wherein the second bank of accumulators are configured to be connected to an entire pressure system as to selectively allow use of the second bank of accumulators with other rams and well functions.

16. The system of claim 10, wherein the ram block is a shear ram block located in a blowout preventer (BOP).

17. A system configured to shear an object in a blowout preventer, the system comprising:

a first bank of accumulators configured to provide a first pressure to move a ram block until the ram block is substantially in contact with the object;

a second bank of accumulators configured to provide a second pressure to move the ram block to shear the object, wherein the second pressure is greater than the first pressure;

a relief valve connected to a pressure line and configured to open when the first pressure reaches a predetermined amount; and

a conduit connected to the relief valve and configured to deliver a pressurized substance to open a pilot valve associated with the second bank of accumulators when the relieve valve opens.

18. The system of claim 17, wherein the first bank of accumulators are not fully charged.

19. The system of claim 17, wherein the second bank of accumulators are configured to be connected to an entire pressure system as to selectively allow use of the second bank of accumulators with other rams and well functions.

20. A system configured to shear an object in a blowout preventer, the system comprising:

a position sensor configured to monitor a position of a ram block in the blowout preventer and to transmit the position of the ram block to a controller;

a first bank of accumulators configured to provide a first pressure to move the ram block until the ram block is substantially in contact with the object;

a second bank of accumulators configured to provide a second pressure to move the ram block to shear the object, wherein the second pressure is greater than the first pressure; and

the controller is configured to calculate a velocity of the ram block and to sequentially control the first bank of accumulators to move the ram block until the velocity of the ram

block is substantially zero and to then control the second bank of accumulators to move the ram block to shear the object.

21. A system configured to shear an object in a blowout preventer (BOP), the system comprising:

a lower marine riser package (LMRP);

a multiplexor (MUX) pod attached to the LMRP and configured to provide functions to the BOP;

the BOP configured to shear the object with a ram block;

a position sensor configured to monitor a position of the ram block and to transmit the position of the ram block to a controller;

a first bank of accumulators configured to provide a first pressure to move the ram block until the ram block is substantially in contact with the object;

a second bank of accumulators configured to provide a second pressure to further move the ram block to shear the object, wherein the second pressure is greater than the first pressure; and

the controller is disposed in the MUX pod and configured to sequentially control the first bank of accumulators to move the ram block until the ram block is substantially in contact with the object and to then control the second bank of accumulators to move the ram block to shear the object.

22. A method for shearing an object in a blowout preventer, the method comprising:

determining a need to shear the object;

monitoring a position of a ram block of the blowout preventer;

transmitting the position of the ram block to a controller;

providing a first pressure from a first bank of accumulators to move the ram block until the ram block is in contact with the object;

providing a second pressure from a second bank of accumulators to move the ram block to shear the object; and

shearing the object.

CLAIMS

What is claimed is:

1. A system configured to move a ram block in a blowout preventer, the system comprising:

a source of pressurized fluid in selective communication with the ram block;

a position sensor in communication with an element coupled with the ram block; and

a controller in communication with the source of pressurized fluid and in communication with the position sensor, so that when the ram block moves into contact with a tubular and the position sensor communicates a signal to the controller indicating the element is at a designated position, the controller selectively increases a pressure of the fluid communicated to the ram block, wherein the controller estimates a velocity based on a duration of time from which the ram block moves from a first location and into contact with the tubular.

2. The system of claim 1, wherein the position sensor comprises a magnet in the element that moves with the element and the ram block, and a magnetostrictive sensor disposed stationary with respect to the magnet, so that a signal from the magnetostrictive sensor to the controller indicates an exact location of the ram block.

3. The system of claim 1, wherein the source of pressurized fluid comprises vessels having the pressurized fluid, and wherein a pressure in a one of the vessels is greater than a pressure in another one of the vessels.

4. The system of claim 1, wherein the tubular comprises one of a tool or a drill string.

5. The system of claim 1, wherein the ram block is a shear ram block located in the blowout preventer.

6. A system for use with a blowout preventer comprising:

a position sensor in locational communication with a ram block in the blowout preventer;

a low pressure accumulator containing a fluid that is in selective communication with the ram block;

a high pressure accumulator containing a fluid that is in selective communication with the ram block and at a pressure that is greater than a pressure of the fluid in the low pressure accumulator; and

a controller in communication with the position sensor, low pressure accumulator, and high pressure accumulator, so that when the controller estimates a velocity based on a duration of time from which the ram block moves from a first location and into contact with a tubular, the controller initiates communication between the high pressure accumulator and the ram block.

7. A method of operating a blowout preventer comprising:

monitoring a position of a ram block of the blowout preventer;

moving the ram block with fluid and towards a tubular in the blowout preventer;

estimating a velocity of the ram block based on a duration of time from which the ram block moves from a first location and into contact with the tubular; and

increasing a pressure of the fluid when the ram block is monitored to be at a designated velocity.

8. The method of claim 7, wherein the ram block is in contact with the tubular in the blowout preventer when in a designated location.

9. The method of claim 7, further comprising continuing to provide the fluid so that the ram block shears the tubular in the blowout preventer.

10. The method of claim 7, wherein the fluid is provided from vessels maintained at different pressures, so that the step of increasing a pressure of the fluid comprises providing fluid from a vessel having a higher pressure.