IADC has developed an eight-point boring classification system to allow drillers and bit manufacturers to assess the performance of the drill. This eight-point system is described below and is used in both tricone and fixed cutter bits, but does not apply to tungsten bits. Internal cutting structure - The wear of the internal cutting structure is also observed in the number from 0 to 8, when 0 is without wear and 8 - total wear. Tricone and fixed cutter are the only types of bit in which the internal cutting structure is used in both tricone and fixed cutter bits, but does not apply to tungsten bits:

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- Internal cutting structure: The wear of the internal cutting structure is also observed in the number from 0 to 8, when 0 is without wear and 8 - total wear.

Steel tooth bits - A measure lost tooth height due to wear and/or damage. 0 – No loss of tooth height 8 – Complete loss of tooth height.

Insert Bits - A measure of reduction of the inserts due to wear and/or damage. 0 – No lost inserts 8 – All inserts are lost.

Boring classification characteristics - Boring characteristics allow bit sellers or drillers to determine the general, distinctive aspect of dull drilling bit condition. Boring characteristics are divided into four sections:

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2. Internal cutting structure - The wear of the internal cutting structure is also observed in the number from 0 to 8, when 0 is without wear and 8 - total wear. Tricone and fixed cutter are the only types of bit in which the internal cutting structure is used in both tricone and fixed cutter bits, but does not apply to tungsten bits:

3. Location - The place describes where the damage is in the cone. N = Nose row M = Middle row G = Gauge row A = All verses Brandon, B.D.,* and Cerkovnik, Jerry,** Eastman Christensen; Koskie, Earl, DBS; Bayoud, B.B.,* Eastman Christensen; Colston, Fred, Smith Diamond; Clayton, R.I.,* Security; Anderson, M.E., Eastman Christensen; Smith Industries; and Niemi, Ralph,* Cliffs Drilling Co. Abstract This document is one of two describing changes to the IADC classification and boring classification system for fixed cutter bits. The dull classification system fixes, described here, have been implemented to improve the use and efficiency of the dull classification system. Improved bit technologies and applications required changes to the classification system and are described in detail in joint document SPE 23940. Introduction IADC Fixed Cutter Working Group this year audited the 1987 Fixed Cutter Dull Classification System and found that some improvement was needed. As with the introduction of a flat-rate boring classification system in 1987, the purpose of this review was to facilitate the creation of a mental image of worn bits of physical condition by standardizing certain bit characteristics. Wherever possible an industry-wide standard according to which the bit standards of degree should be interpreted as little as possible in order to allow for future standardization. The committee discussion focused on two specific areas: the definition of the height of the cutter to be used, as it relates to the assessment of the wear of the PDC cutter, and minor improvements in wear and tear of the PDC cutter and minor improvements to the abrasion codes. SYSTEM IMPROVEMENTS The boring classification chart format shown in Figure 1 has not changed in this view. Eight losses are recorded: the first four columns describe the wear and location of the wear and location of the cutting structure. The other two sections are dedicated to other bit-related losses. Additional improvements include adding a dull character code BF to distinguish between the bond failure between the bond failure and the bond failure. It was found that the definition of the height of the cutter to be used, as it relates to the assessment of the wear of the PDC cutter, and minor improvements in wear and tear of the PDC cutter and minor improvements to the abrasion codes.

Changes since 1987:

- Outer Cutting Structure: Definition will change to All cutting elements that touch the side of the cutter to be used.
- Grade Add: N - For Can't Grade
- Location: G is the gage area replacing H.
- Additional improvements include adding a dull character code BF to distinguish between bond failure and bond failure. It was found that the definition of the height of the cutter to be used, as it relates to the assessment of the wear of the PDC cutter, and minor improvements in wear and tear of the PDC cutter and minor improvements to the abrasion codes. Additional improvements include adding a dull character code BF to distinguish between bond failure and bond failure. It was found that the definition of the height of the cutter to be used, as it relates to the assessment of the wear of the PDC cutter, and minor improvements in wear and tear of the PDC cutter and minor improvements to the abrasion codes.

APPLICATION OF THE DULL CLASSIFICATION SYSTEM When assessing the cutting structure immediately row, Sections 1 and 2 Using a three scale from 0 to 8, as before, the value for the depreciation of cutters in both the inner and outer rows of the cutter is given. Classification numbers increase with a depreciation amount, with 0 representing not wearing it, and 8 means not using cutters left. Class it shows 50% depreciation. For the terms determined by the surface, the cutter’s outer scale shall be determined by comparing the initial height of the cutter with the remaining volume of the cutter height used. P. 835 SPE member price: $5.00 SPE non-members price: $28.00 Abstract This document is one of two describing changes to the IADC classification and boring classification system for fixed cutter bits. The dull classification system fixes, described here, have been implemented to improve the use and efficiency of the dull classification system. Improved bit technologies and applications required changes to the classification system and are described in detail in joint document SPE 23940. Introduction IADC Fixed Cutter Working Group this year audited the 1987 Fixed Cutter Dull Classification System and found that some improvement was needed. As with the introduction of a flat-rate boring classification system in 1987, the purpose of this review was to facilitate the creation of a mental image of worn bits of physical condition by standardizing certain bit characteristics. Wherever possible an industry-wide standard according to which the bit standards of degree should be interpreted as little as possible in order to allow for future standardization. The committee discussion focused on two specific areas: the definition of the height of the cutter to be used, as it relates to the assessment of the wear of the PDC cutter, and minor improvements in wear and tear of the PDC cutter and minor improvements to the abrasion codes. SYSTEM IMPROVEMENTS The boring classification chart format shown in Figure 1 has not changed in this view. Eight losses are recorded: the first four columns describe the wear and location of the wear and location of the cutting structure. The other two sections are dedicated to other bit-related losses. Additional improvements include adding a dull character code BF to distinguish between the bond failure between the bond failure and the bond failure. It was found that the definition of the height of the cutter to be used, as it relates to the assessment of the wear of the PDC cutter, and minor improvements in wear and tear of the PDC cutter and minor improvements to the abrasion codes. Additional improvements include adding a dull character code BF to distinguish between the bond failure between the bond failure and the bond failure. It was found that the definition of the height of the cutter to be used, as it relates to the assessment of the wear of the PDC cutter, and minor improvements in wear and tear of the PDC cutter and minor improvements to the abrasion codes. Additional improvements include adding a dull character code BF to distinguish between the bond failure between the bond failure and the bond failure. It was found that the definition of the height of the cutter to be used, as it relates to the assessment of the wear of the PDC cutter, and minor improvements in wear and tear of the PDC cutter and minor improvements to the abrasion codes.
| Column 1 - Structure Inner Row (I) | Report the condition of the cutting structure. The boring characteristics listed above are taken for granted. A more detailed description of the two-letter codes can be obtained from bit companies. The following are examples of some boring features. Column 4 - Location of the cutting structure (L) | Report on the main boring characteristics of bit cutting structure, based on the table below. The dull state of drilling reports. Meanwhile, major bit performance studies have shown a higher slight depreciation economic impact and a close relationship with some selection and performance practices. The industry standard for reporting dull bit was clearly needed. The first tedious classification standard was established in 1961 by the American Association of Drilling Contractors (AADC) for Weight/Speed/Penetration Subcommittee. P. 819^ File size 1 MB Number one cone is the center cutting element. Cones two and three follow sitting on the pin. In column 1 and 2, a linear scale of 0 to 8 is used to classify the dull state of the bit. Column 3 - Cutting structure, Worn and/or broken inserts | Column 2 - Structure Outer Row (O) | Report the state of the cutting structure on the field. 1/3 bit of roller cone bit and outer 1/3 rds radius of fixed cutter bit. In column 1 and 2, a linear scale of 0 to 8 is used to classify the dull state of the bit. | Column 4 - Location of the cutting structure (L) | Report on the main boring characteristics of bit cutting structure, based on the table below. The dull state of drilling reports. Meanwhile, major bit performance studies have shown a higher slight depreciation economic impact and a close relationship with some selection and performance practices. The industry standard for reporting dull bit was clearly needed. The first tedious classification standard was established in 1961 by the American Association of Drilling Contractors (AADC) for Weight/Speed/Penetration Subcommittee. 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