(Akio Ejima)
(Hiroshi

d has stimulated a considerable development of the high
ar goods with superior resistance against sulfide stress
and collapse failure in hostile environments. The experimental
o steel casing have concluded that additions of Mo up to 1.0%, Nb
% C steels provide 90 ksi(63.3kgf/mm**2) yield strength pipes with
sistance. Multiple regression analysis has been made to estimete the
ous factors for the collapse of casing pipes and it is demonstrated that
ress of finished pipes is one of the most significant factors. This report
izes some metallurgical aspects in manufacturing process of these special
s of oil country tubular goods.

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耐硫化物応力腐食割れ性油井管および耐コラプス性油井管の開発

Development of Anti-SSC OCTG and Collapse Resistant OCTG

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Synopsis:

[redacted]

tubular goods with superior resistance against sulfide stress corrosion cracking (SSC) and collapse failure in hostile environments.

The experimental trials of modified Cr-Mo steel casing have concluded that additions of Mo up to 1.0 %, Nb and B to 0.2 to 0.3 % C steels provide 90 ksi (63.3 kgf/mm^2) yield strength pipes with superior SSC resistance.

[redacted]

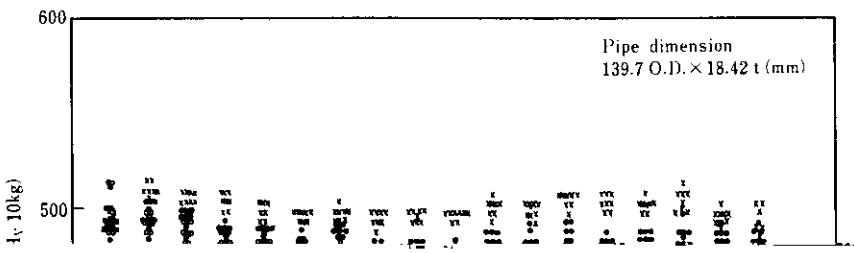
では，油井設計上の経済的および冶金的理由から，　である。

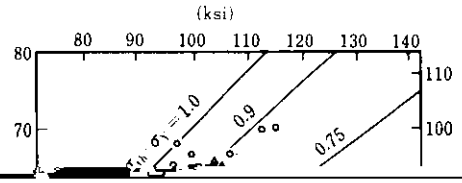
(0.415～1.200in.), 950℃焼入れで90%以上のマルテンサイト比であった。焼もどし条件は，化学

図からCr-Mo系低合金鋼における臨界応力は，降伏強さ70.3kgf/mm^2(100ksi)付近で最大で，

焼もどしまたはSR後の冷間矯正は不要であった。

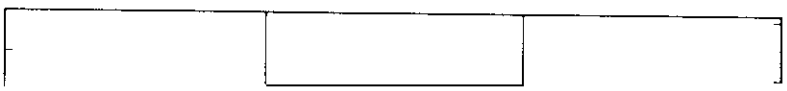
とがみとめられる。





2・4 実　績

耐SSCケーシングの化学成分，機械的性質の代表例を**Table 1**に示す。誘導加熱焼入，Mo，B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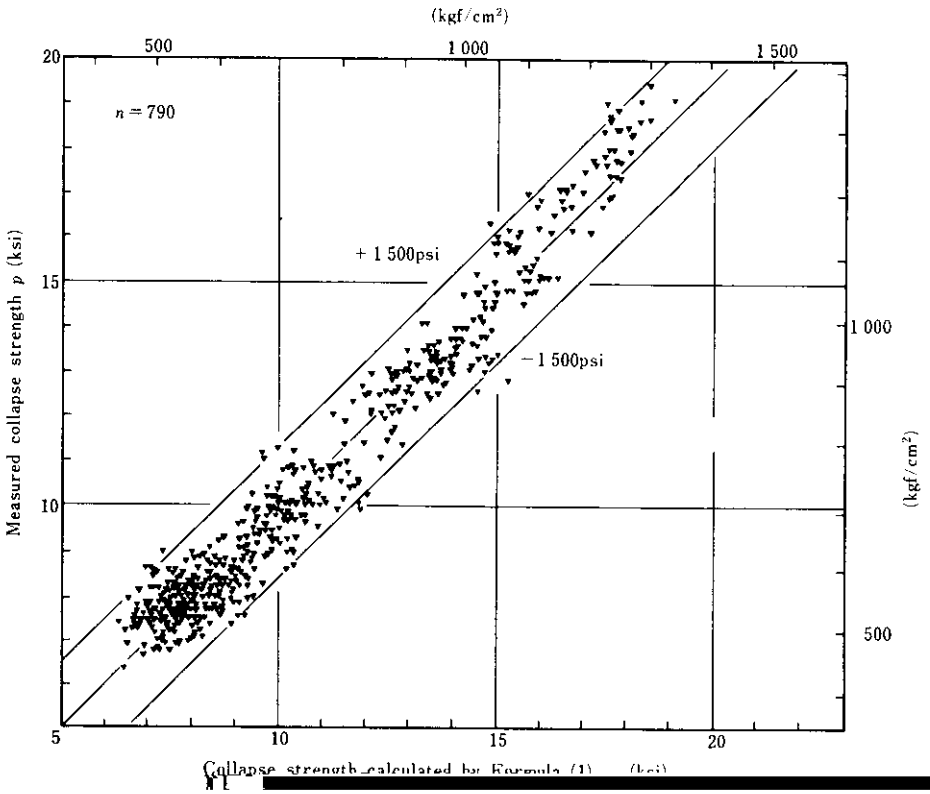

collapse resistance of pipes

Table 2 Multiple regression analysis of collapse strength

3・3 実　績

Table 3 Chemical composition and mechanical properties of high collapse resistant steel pipe

Pipe	Chemical composition (%)	Tension testing

びコラプス抵抗性の高い油井用鋼管では熱処理後の残留応力を少なくすることが重要であることなどが判明した。

今後はさらに厳しい堀削，使用条件に耐える高品質油井用鋼管の需要に対応するため，新材料の開発ならびに製造技術の進歩が課題である。

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