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Chinese Nuclear Testing: Racing Against a Comprehensive Test Ban

Joint Intelligence Memorandum

5 OCT 1994

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Joint Intelligence Memorandum

Office of Scientific and Weapons Research

30 September 1994

Chinese Nuclear Testing: Racing Against a Comprehensive Test Ban

China is expected to conduct at least six more underground nuclear tests through 1996 in order to complete its nuclear weapons modernization program.

China's modernization objectives include completing warhead development for ICBMs and SLBM systems and programs to enhance confidence in warheads that are planned for the enduring stockpile. If China is successful in completing its modernization program objectives on schedule, it will probably support concluding a Comprehensive Test Ban Treaty (CTBT) in 1996. However, a failure or delay of the remaining tests could result in additional tests, which could delay China's acceptance of a CTBT.

The Chinese are exploring ways to make their warheads smaller and safer.

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Introduction

The Chinese have recently embarked on what for them is a series of aggressive nuclear testing as part of its nuclear weapons modernization program. The underground testing is scheduled to continue at least through the next two years. The likely objectives of the Chinese nuclear weapons modernization program are completing warhead development for new delivery systems and establishing safety and confidence in the reliability of the enduring stockpile if and when it decides to adhere to a Comprehensive Test Ban Treaty (CTBT). Other objectives of the modernization program probably include developing safer warheads, increasing the understanding of yield-scaling laws, determining vulnerabilities through effects testing, improving the safety of existing warheads, and possibly developing smaller thermonuclear warheads for future delivery systems. []

The accelerated pace in China's nuclear testing is likely a direct response to the likelihood of a CTBT. Because China's nuclear weapons are the least sophisticated of the five declared nuclear weapons states (NWS), its modernization program would be affected the most under a future CTBT. China has conducted fewer nuclear tests than the other weapons states and probably has the smallest number of warhead designs available in its stockpile. Although Beijing continues to publicly support the successful conclusion of a CTBT, it is likely to continue testing until national security goals have been accomplished at which time we believe China probably will adhere to a CTBT. []

To date, Beijing's position in the CTBT negotiations at the United Nations Conference on Disarmament in Geneva have been largely designed not only to assert its longstanding nuclear arms control agenda but also to prolong conclusion of a CTBT. China is aware that the other NWS are not in agreement on several key aspects of a test ban, and it is expected to maneuver to keep its options open as long as possible. The Chinese delegation has sought to include provisions such as no-first use of nuclear weapons by the NWS and assurances of non-use of nuclear weapons against all non-NWS that are considered as being only marginally related to a CTBT. Other Chinese proposals such as the right to conduct peaceful nuclear explosions, creating an international satellite system for detecting nuclear explosions in the atmosphere and space, and restricting the use of national technical means to monitor for CTBT violations are clearly opposed by the rest of the NWS. []

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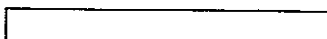
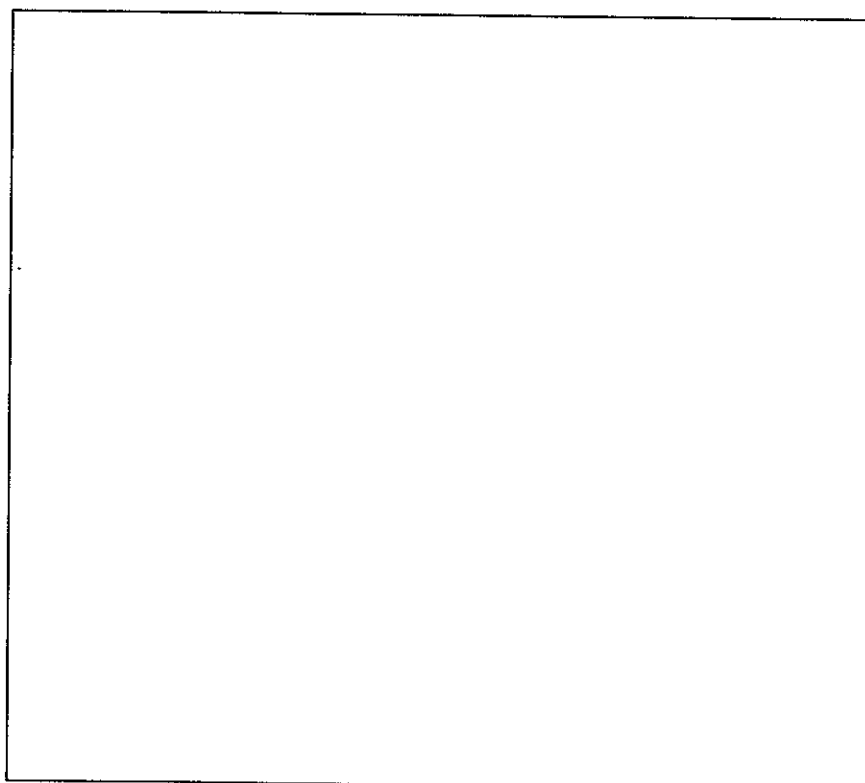


Nuclear Test Activity

Through June 1994 the Chinese have conducted 39 nuclear tests

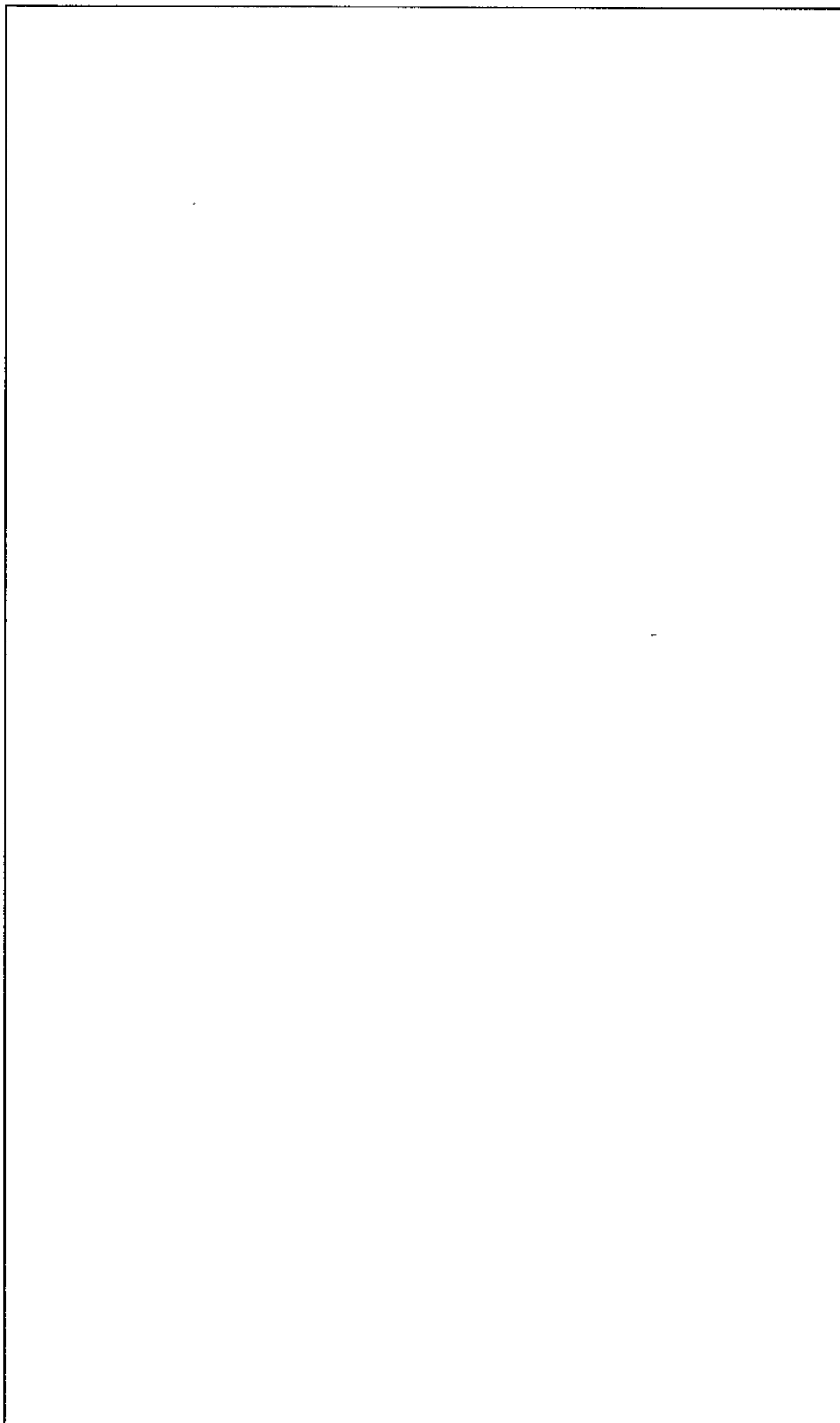


Nuclear tests conducted over the past few years seem to indicate that China is probably modernizing its nuclear stockpile.



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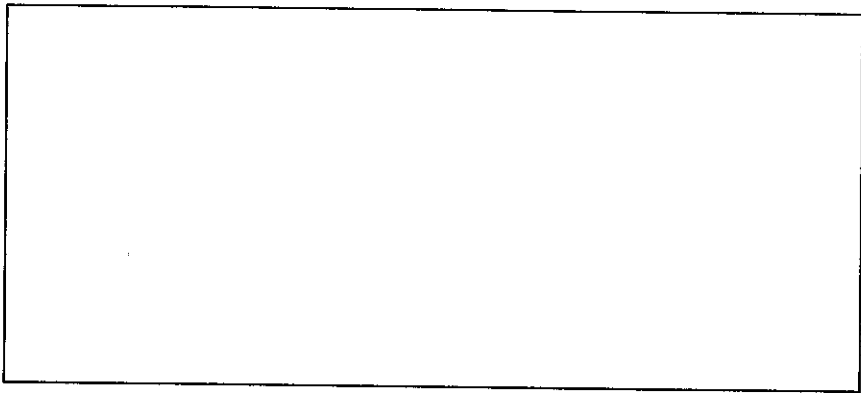
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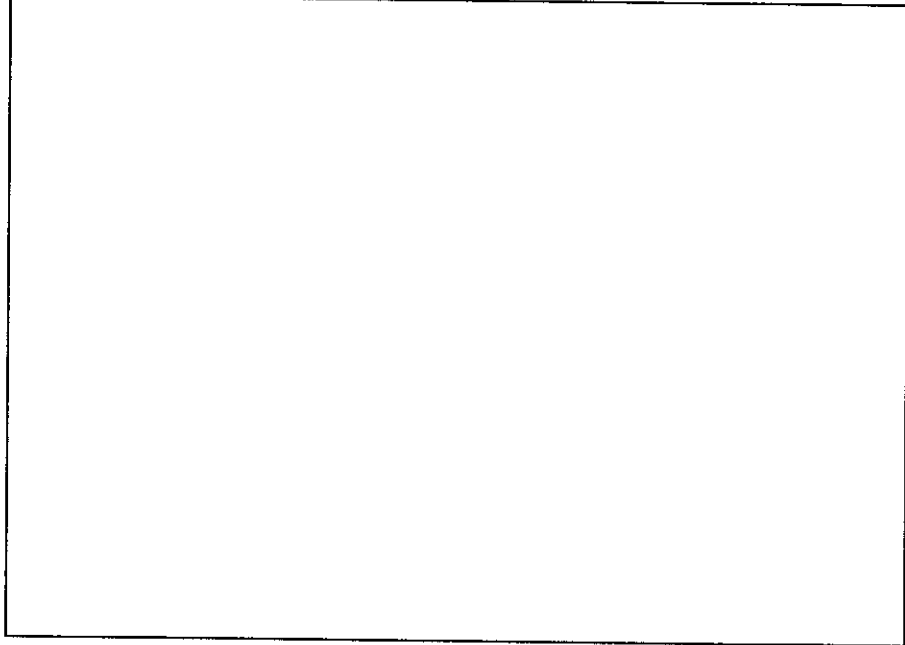
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Modernization of the Nuclear Force

Although the specific purpose of each Chinese test is unknown, our analysis indicates the Chinese have several modernization goals.



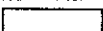
The Chinese have expressed a strong interest in improving the safety and reliability of their nuclear stockpile. [Redacted]





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technology and would require multiple tests to gain confidence in the design. Since most of China's nuclear warheads are currently targeted against soft targets, yield enhancement (typically a doubling of warhead yield in submegaton warheads) of cralloid warheads would have a negligible effect on targeting effectiveness. 

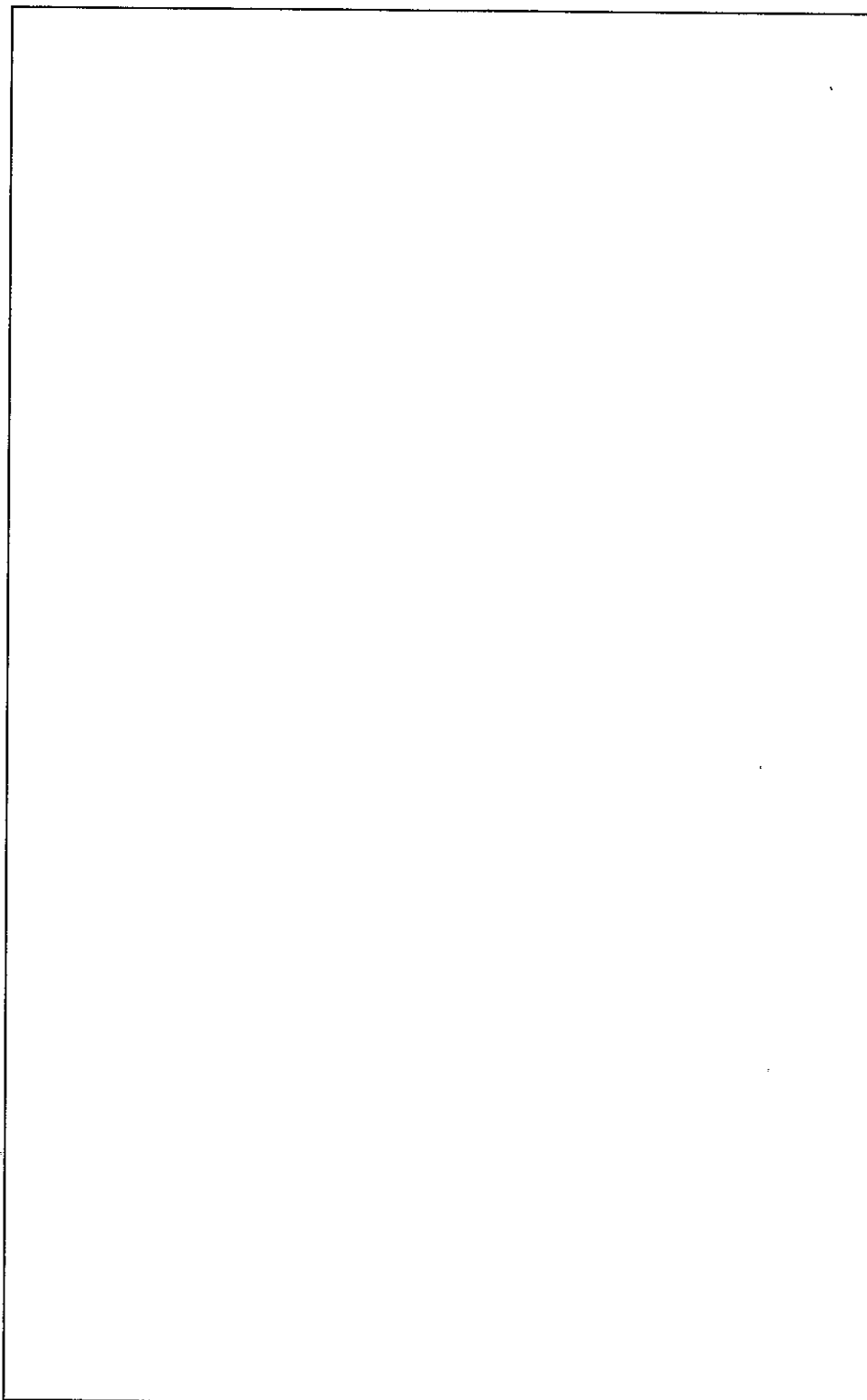
Outlook

The Chinese apparently believe they can achieve their modernization program objectives in the six remaining tests, assuming the tests are successful. We believe that China's first priority is to complete new warheads for a number of systems under development, most notably . If significant problems occur in the remaining tests, China is likely to postpone adherence to a CTBT in 1996 to ensure its confidence in the reliability of the enduring nuclear weapons stockpile. The new warheads that China is developing may use more advanced concepts such as aspherical primaries and possibly a type of IHE. An insufficient number of tests remain for incorporating all these concepts into the existing stockpile. 

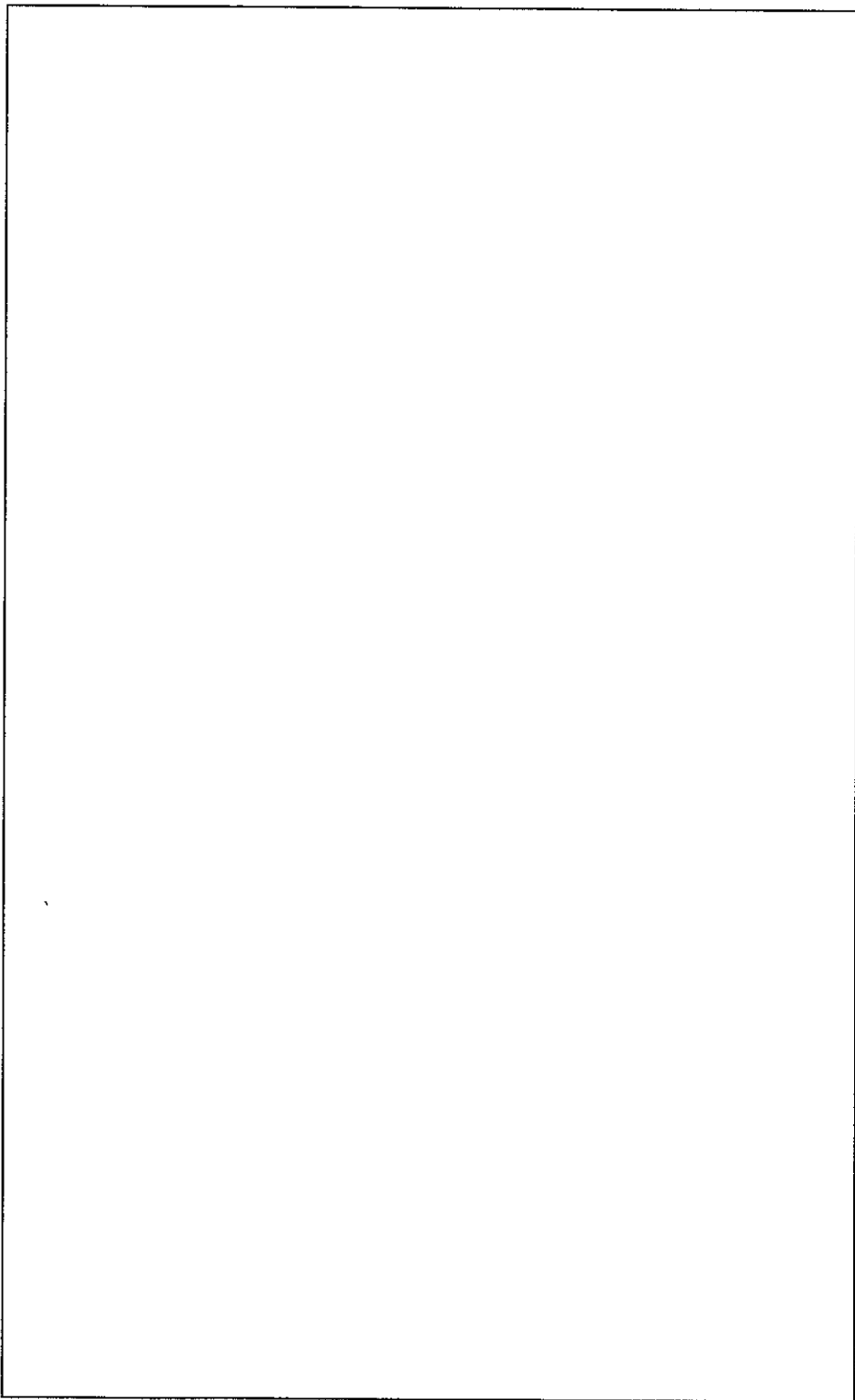


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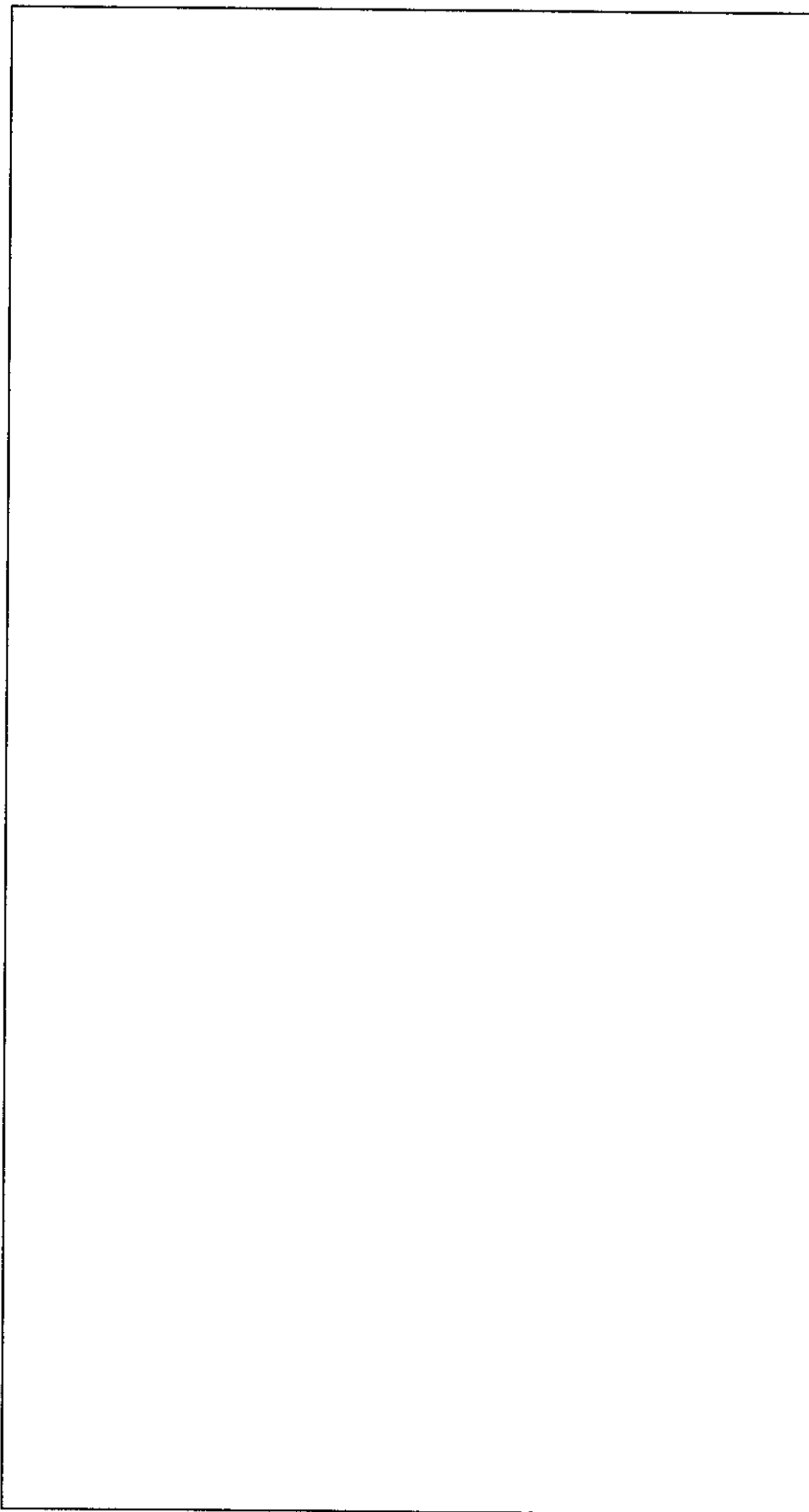
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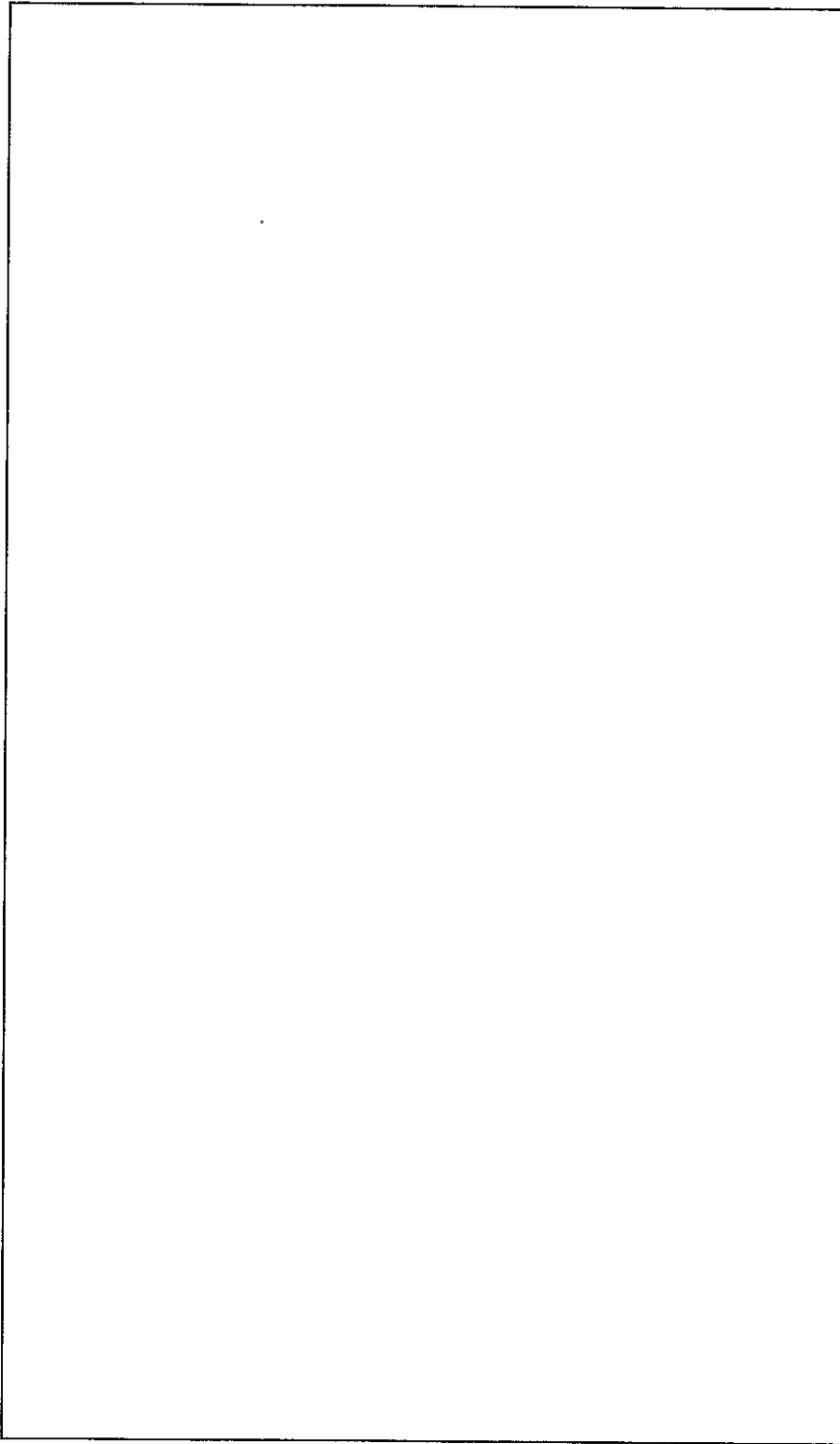
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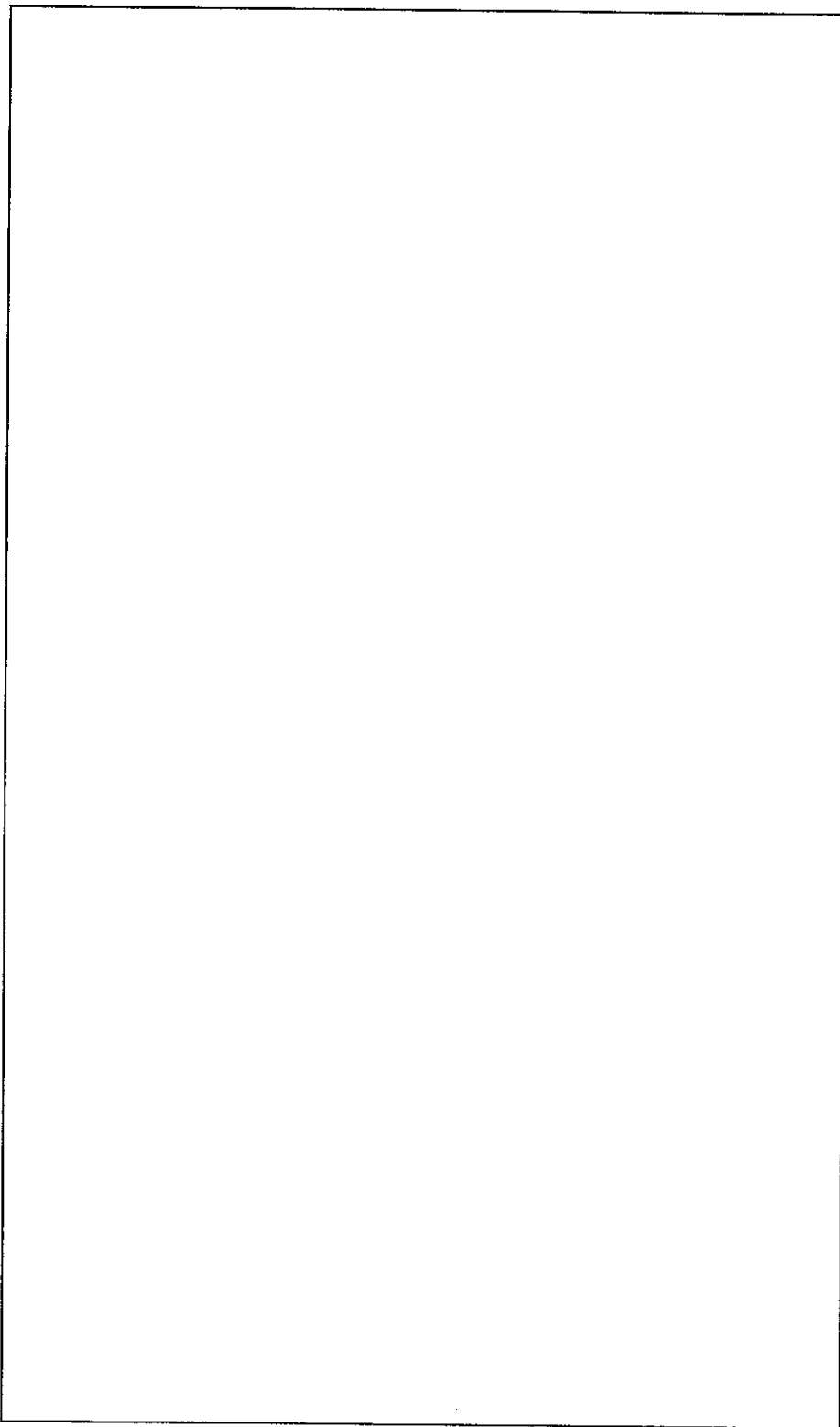
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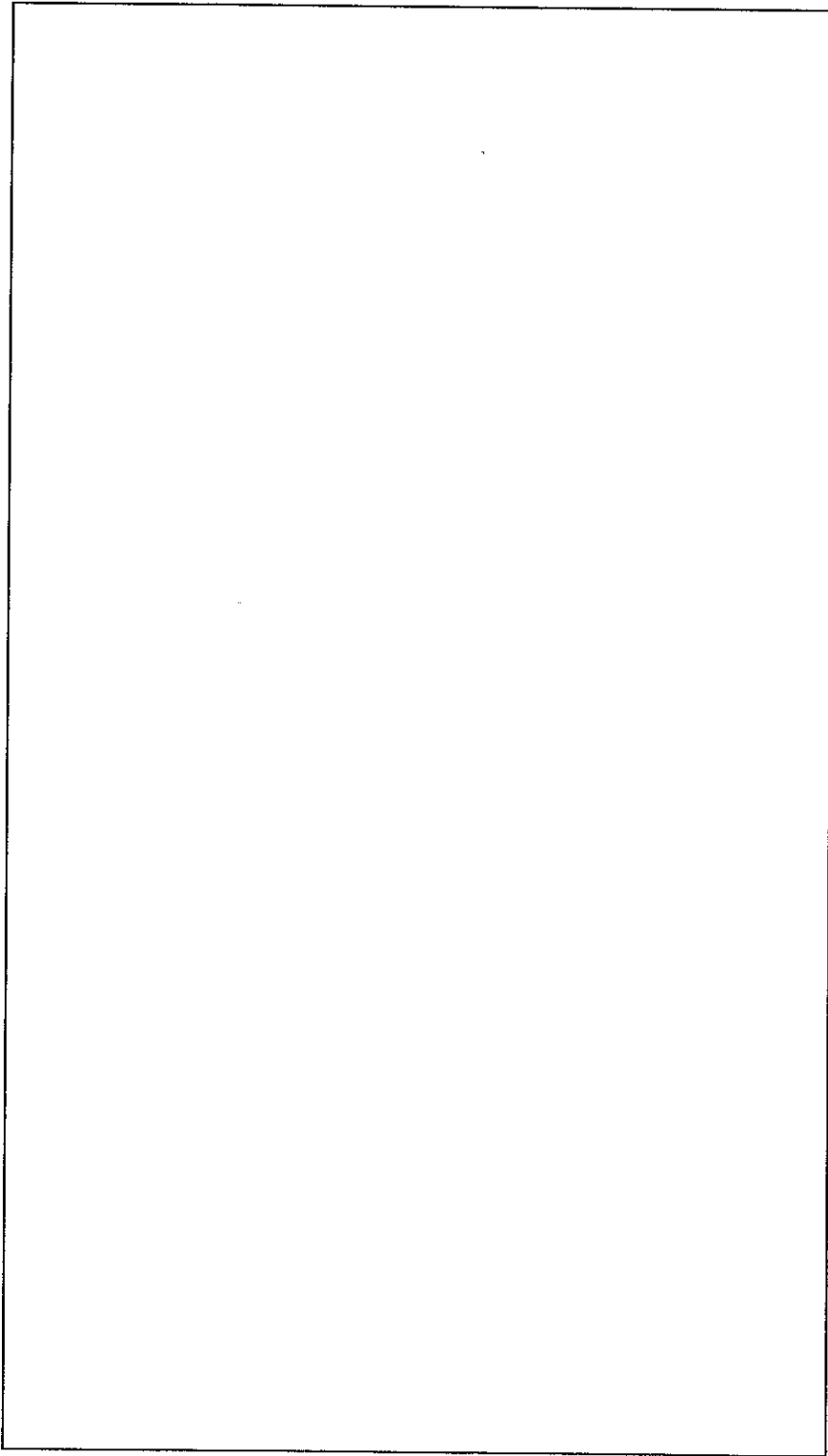
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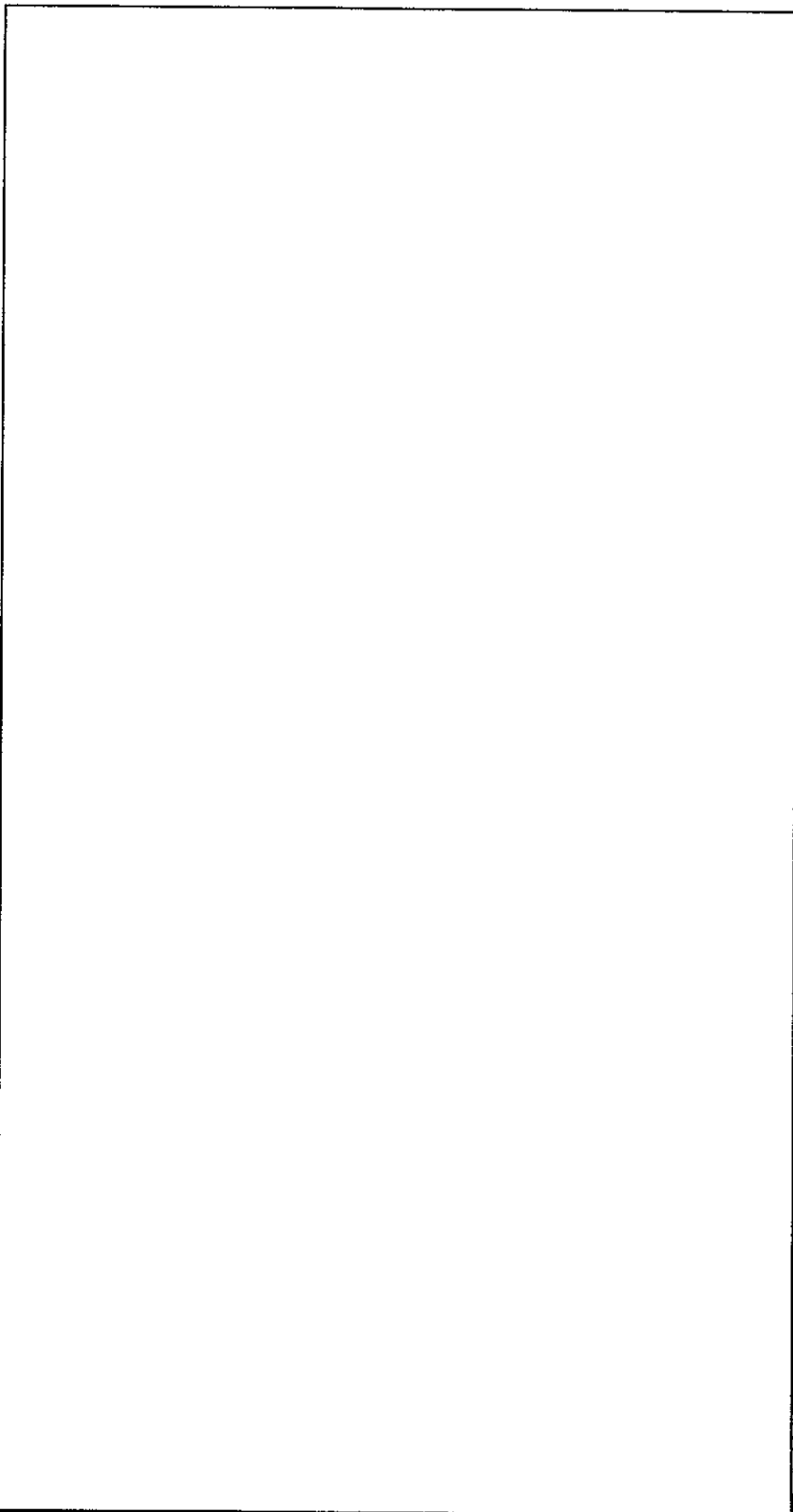
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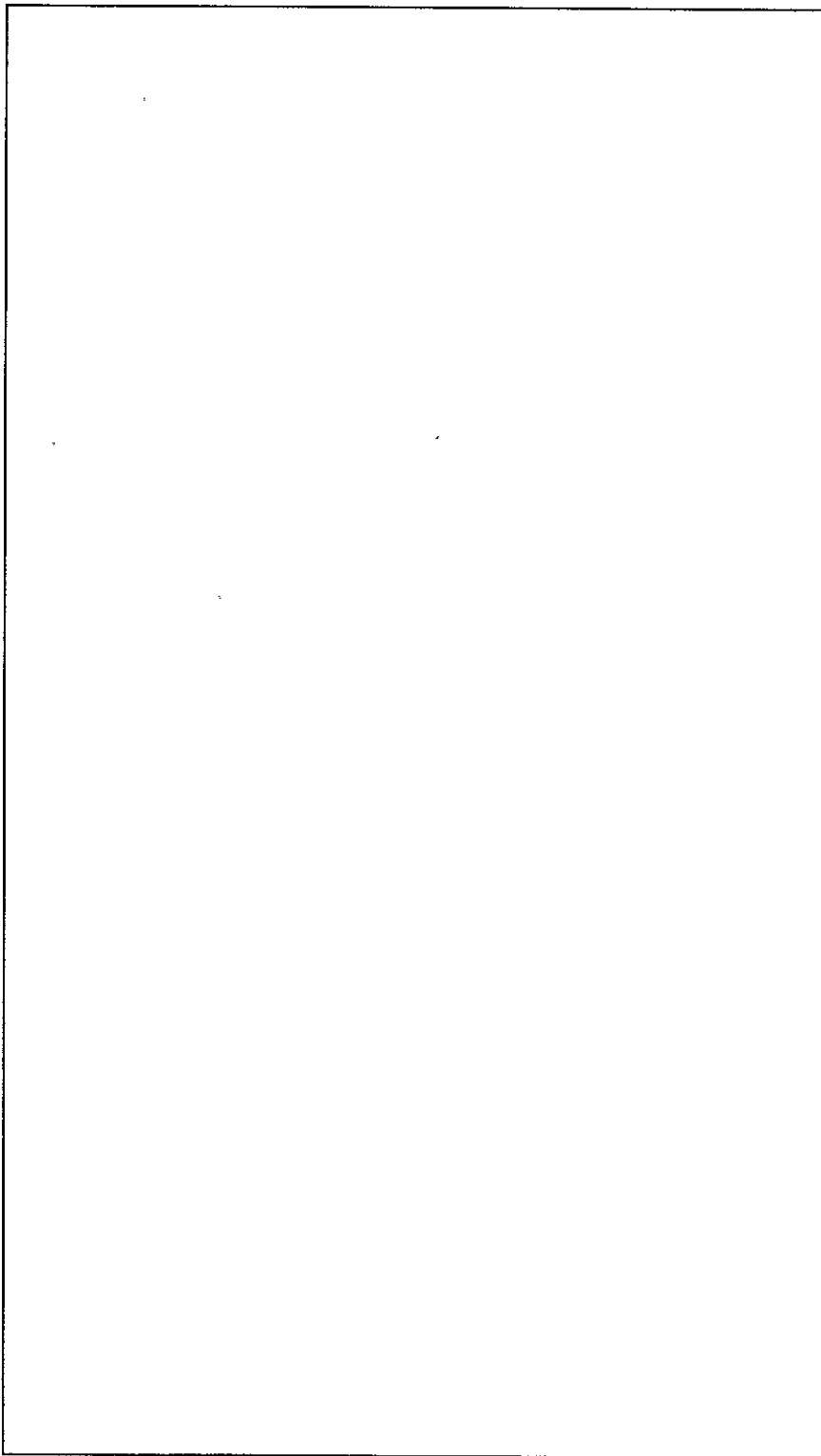


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