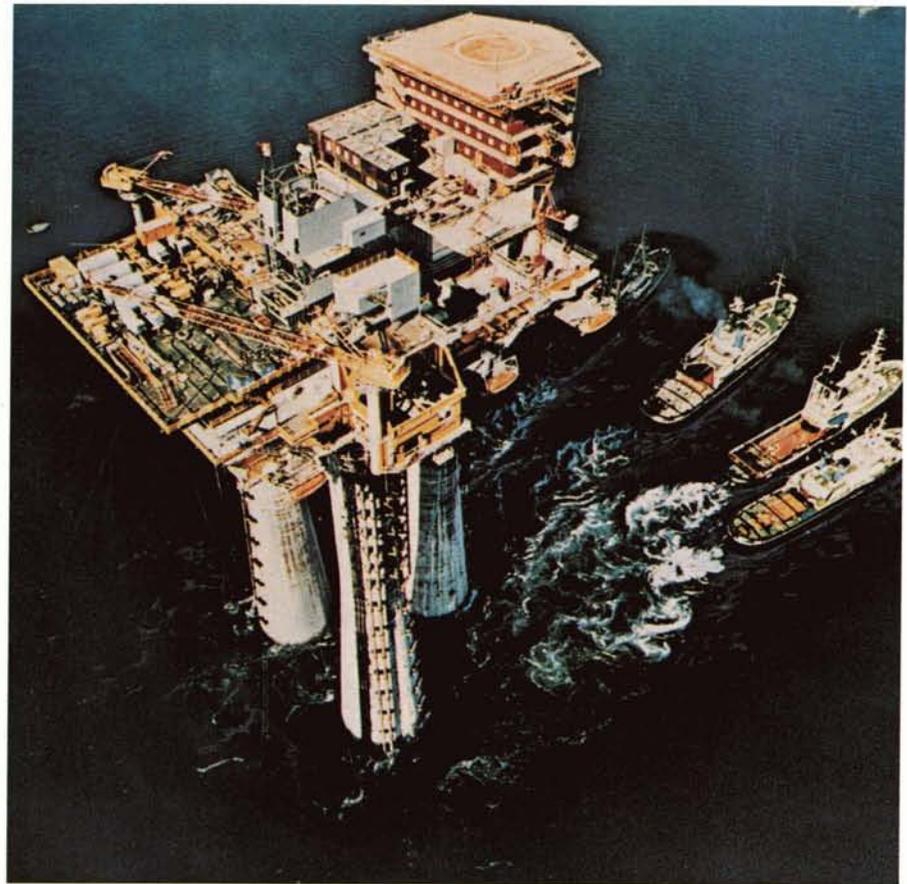


## Oil Industry Aids

The accompanying photos show two types of offshore oil platforms used by Exxon Corporation. In the upper photo is a leg-supported gravity platform; the other structure is a "jacket-type" platform, built in sections, towed to sea and assembled on-site. In construction of platforms like these, Exxon Production Research Company, Houston, Texas, conducts extensive structural investigations of decks, supporting members and other platform components, making use of the NASTRAN® (NASA Structural Analysis) computer program.

NASTRAN is a predictive tool which analyzes a computerized design and reports how the structure will react to a great many conditions it will encounter in its operational environment; in this case, NASTRAN studies the effects of waves, winds, ocean storms and other stress-inducing factors. NASTRAN allows Exxon Production Research to perform more complex and more detailed analysis than was possible with previous programs. The same program has also been used by Exxon Research and Engineering Company, Florham Park, New Jersey, in analysis of pressure vessels, turbine components and composite building boards.

NASTRAN is made available to the Exxon companies through NASA's Computer Software Management and Information Center (COSMIC), which routinely supplies computer programs developed by NASA and other government agencies to interested industrial firms. In addition to NASTRAN, several other COSMIC programs have found use among Exxon subsidiaries and affiliates. For example, Exxon Production Research has used the Ship Hull Characteristics Program (SHCP) to evaluate the stability and strength of drillships and barges, aiding company selection of vessels to be leased. The same company has also used a program called SMIPS (Small Interactive Image Processing System) to study the potential of satellite imagery in exploring for mineral and hydrocarbon deposits. Exxon Research and Engineering Company has incorporated a COSMIC subroutine into its Steam Network Program, employed in analyzing energy re-



quirements for production of petrochemicals. Exxon Company, U.S.A., Houston, Texas, has used COSMIC's SUPERMON to monitor and help improve the performance of the company's computing systems. Collec-

tively, use of COSMIC programs has resulted in savings to the Exxon group running into millions of dollars.

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