



### Pipelaying Barges

The vessel pictured is the *Hugh Gordon*, a pipelaying barge designed and built by Brown & Root, Inc., Houston, Texas. The largest engineering and construction firm in the United States, Brown & Root is engaged in such activities as construction of chemical and petroleum plants, pulp and paper plants, highways and bridges, and offshore petroleum facilities. The computer program SHCP (Ship Hull Characteristics Program) is used by Brown & Root engineers as a tool in designing barges, such as the one shown, for offshore pipelaying projects. Made available to industry by NASA's Computer Software Management and Information Center (COSMIC), SHCP is a composite program designed to solve basic naval architecture problems and to assess the structural integrity and stability of a vessel design; it is used extensively by marine industry designers.



### Solar Systems

The solar collectors shown are elements of domestic solar hot water systems produced by Solar One Ltd., Virginia Beach, Virginia. Design of these systems benefited from technical expertise provided Solar One by NASA's Langley Research Center. The company obtained a NASA technical support package describing the design and operation of solar heating equipment in NASA's Tech House, a demonstration project in which aerospace and commercial building technology are combined in an energy-efficient home. Solar One received further assistance through personal contact with Langley solar experts. The company reports that the technical information provided by NASA influenced Solar One's panel design, its selection of a long-life panel coating which increases solar collection efficiency, and the method adopted for protecting solar collectors from freezing conditions.

