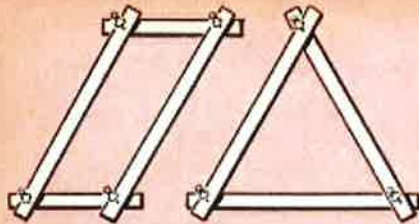


Why an A-Frame Is So Strong



PIN FOUR STRIPS OF CARDBOARD into a square and you'll see how easily they can be squashed flat, as at far left. Triangle at near left, however, can't be budged in any direction even though each corner is held by only a single pin. The reason: In a triangle, no angle can change without changing the length of the sides. Since the sides can't change, the shape can't change. In a square, the angles can change even though the sides remain the same.

Why the Big Boom in A-Frames?

High strength and low cost make these rakish designs top choice for a home-built vacation cabin

By Sheldon M. Gallager

THAT dream of a summer home may come true sooner than you think. A new concept for building vacation cabins now makes it possible to own your own beach cottage or mountain retreat for the price of a new car—in some cases, less.

The secret is a simple A-frame design, long known by architects to be one of the strongest, easiest, and most economical structures you can build. Used for generations by Indians and trappers in the heavy snow regions of the north, the rugged A-frame has now been slicked up and turned into a fascinating new type of "second home."

The A-frame is so flexible it can be whatever you want to make it—a summer fishing cabin, a winter ski lodge, a garden shelter, even a boat port. You can build it any size and in a variety of exciting shapes without changing its basic construction principles.

Strong, yet easy to build. An A-frame is simple—it's just a triangle. You can assemble all the frames for a cabin right on the ground and put them up in one operation. A good-size cabin may have as

few as four or five frames, connected only by the siding you stretch across them. Tricky gable-roof framing is eliminated.

An A-frame is actually a truss—the strongest-known construction principle. Its tall, sharp-peaked shape shrugs off snow, ice, and rain, making it an ideal foul-weather shelter in cold regions. In hot areas, the high roof keeps you cool. The steep sides are so weatherproof that they save you costly roofing. Often, the only roofing used is exposed boards.

Because of its built-in strength, an A-frame requires fewer and lighter structural members than a conventional house of the same size. The A-frames are also self-supporting—there are no interior posts or walls to interfere with living space.

If you want an upstairs, it's easy to run beams across the midpoint of the A-frames to provide a floor. A common practice is to leave the living-room area open to the roof and run a half-floor, or sleeping loft, over the rest of the cabin. Low-headroom areas are put to use in the same way as in an attic—by tucking closets, counters, bunkbeds, and other built-ins into them.

With a compact arrangement like this, you can squeeze a living room, bath, kitchenette, and one or two bedrooms into a floor space 20' by 22'. You can also build an A-frame in easy stages, add-

AUG. 1961



ROOMY INTERIOR shows cozy fireplace at right, compact kitchenette at rear. Low wall serves as both a lunch counter and room divider. Complete plans for the design, called "A-Frame Beach Cabin," are available from the Douglas Fir Plywood Association.

MODERN-STYLE A-FRAME, this swank beach or mountain cabin boasts a cantilevered sun deck and flying balcony. Only 24' square, it has a kitchen, bath, and large living room downstairs, two bedrooms upstairs. The roof-walls are simply two-by-sixes covered with 5/8" plywood panels and watertight batten strips. The floor is supported on nine piers made by filling 12" diameter sewer tiles with concrete.





THIS PREFAB CABIN comes as a kit, has no structural beams except in the foundation. Floor and walls are stressed-skin panels of plywood over two-by-four frames with built-in insulation. Standard size is 16' by 24' with 9'-by-12" sleeping loft for \$2,300. Additional panels are available for extending the cabin to any length. The kit is sold by Sandpoint Builders Supply, Mountlake Terrace, Seattle, Wash.

ONE OF THE EASIEST TO BUILD, this garden shelter or pool cabana uses light, two-by-four studs, needs no floor or foundation. Studs rest on small individual piers and are covered with redwood siding, making roofing unnecessary. The canopy of corrugated plastic lets in light but sheds rain. Free plans for the garden shelter are available from the Simpson Timber Co.

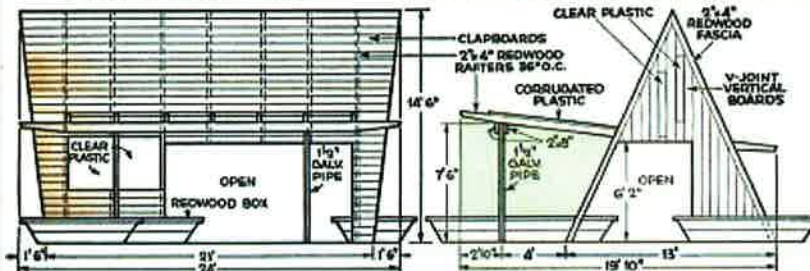
ing extra frames as you need more space.

How A-frames are built. The most common shape is a triangle with 60-degree angles at base and peak. This makes all three sides the same length, simplifying the ordering and fitting of lumber. Often you can size the cabin to take advantage of stock lengths and eliminate cutting. For greater headroom, the base angles can be increased to 65 or 70 degrees, providing a taller triangle.

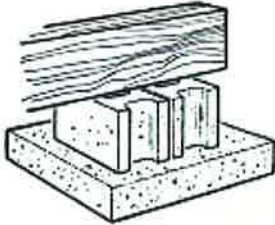
Because of the sloping sides, the overall height of an A-frame must be somewhat greater than that of a conventional design. One-story cabins are generally 12' to 18' tall at the peak, two-story cabins 20' to 22'. These taller sides offer a bigger wind target than an ordinary house and may flex a bit. To avoid this, designers recommend adding cross-braces in high-wind areas, similar to attic collar beams. In a two-story cabin, the upstairs floor serves the same purpose.

The roof and floor beams are generally heavier than those in conventional construction, but are spaced farther apart.

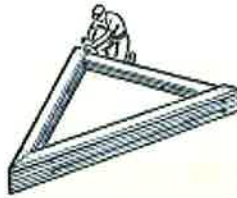
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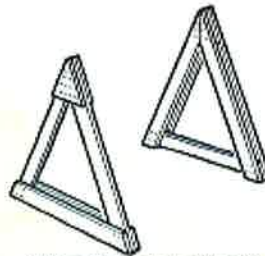
Why an A-frame goes up so fast



SIMPLE FOUNDATION requires only a few main beams supported on concrete-block piers. The blocks, usually two side by side, rest on concrete footings that go below the frost line.



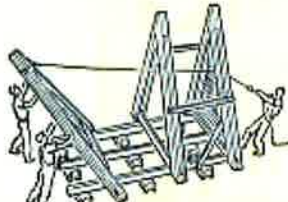
A-FRAMES CAN BE PREFABRICATED on the ground unless very heavy beams are used. Each completed frame then serves as a pattern to insure fast and accurate alignment of next one.



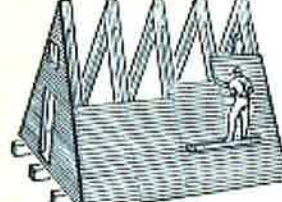
TWO EASY WAYS to get strong, interlocking joints: At left, single wall beams are straddled by doubled floor beams. At right, doubled wall beams straddle a single floor beam.



IND GABLES can also be pre-assembled, complete with siding and door and window openings. This makes it easy to frame openings accurately without climbing around in mid-air.



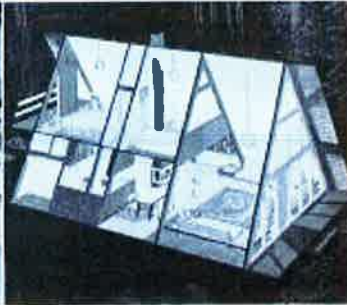
FRAMES ARE HOISTED UP one at a time and held temporarily in place by diagonal braces. Two persons with a third helper pulling on a line can raise all but the heaviest A-frames.



WITH FRAMES IN PLACE, exterior panels or siding are nailed on to complete the shell in as little as six hours. Temporary cleats nailed to roof let you walk up the steep sides.

YOU GET A BUILT-IN BOAT PORT and an over-water deck in this unusual shoreside design. Despite its size—about 32' by 36'—materials cost only an estimated \$2,500 to \$3,000. Note that here the A-frames are unbalanced, with legs at the rear longer than those in front. This gives extra headroom over the living area, with low-ceiling sleeping space in back. Plans for this "Shoreside Homarina" are available from Douglas Fir Plywood Association for 25 cents a copy.

SLEEPING LOFT squeezes two extra bedrooms into this compact A-frame only 24' by 36'. Note striking wall of glass at one end, cantilevered balcony at other. Wide spacing of frames is made possible by using extra-thick wood decking on walls and floor. Plans (No. 426), designed for Potlatch Forests, Inc., are available from [Home Building Plan Service](#).



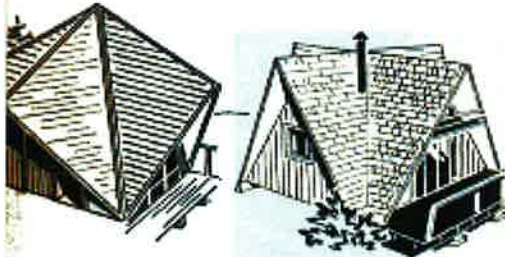
Many shapes are possible with a basic A-frame



OPEN-SIDED VERSION creates a porch along full length of cabin with sheltering roof overhang above it. Plans (No. 418-1) are available from **Home Building Plan Service**.



ADDING TWO SHED-TYPE WINGS to a central A-frame provided the unusual roomy design above. Plans for this "Douglas Fir" model are available from **Vacationland Homes Plans**.



INTERSECTING A-FRAMES produce these eye-catchers. Vertical walls increase headroom. Plans available from **Vacationland Homes Plans** (left) and **Home Building Plan Service** (right).



VERTICAL SIDES give this design a conventional look, yet retain strength and simplicity of A-frame design. Plans (No. 419-1) are available from the **Home Building Plan Service**.

EXTENDING A-FRAMES beyond the main cabin adds convertible outdoor space—open for sun or shaded by canvas panels. Plans ("The Ranger") are from **Douglas Fir Plywood Assn.**



Roof rafters are frequently two-by-eights or two-by-tens, doubled to give a 4" thickness; floor joists are doubled two-by-tens or two-by-twelves. The most common spacing is 4'.

In most designs, the roof rafters are tied directly into the floor joists by overlapping the ends and side-bolting or nailing through the laps. The result is an absolutely rigid structure.

How you can get an A-frame. Complete architect's plans are available for most of the designs shown here. You can also buy complete cabins as kits. Parts are all pre-cut—you just put them together. Heat, plumbing, and other facilities are added by local contractors.

By doing the work yourself, you can often keep the cost to \$2,000 or under on a small cabin. Newly created "second-home" loans are making it possible to finance up to the full cost.

More than 100,000 vacation homes were built last year alone, many of them A-frames. This year's crop is expected to hit half a million. Builders are predicting that the second home will soon become as important a part of leisure living as today's second car. Add up what you spend on yearly vacation trips and you can see why owning your own year-round resort makes sense. ■ ■

Where you can get plans for A-frame vacation cabins

Douglas Fir Plywood Association, 1119 A St., Tacoma 2, Wash. Catalogue available for 25¢. Individual architect's plans also available for 25¢ each.

Parktek Forests, Inc., Lewiston, Idaho. Catalogue available for 50¢. For full plans, see **Home Building Plan Service** below.

Home Building Plan Service, 2464 N. E. Sandy Blvd., Portland 12, Ore. Architect's plans for \$27.50 to \$37.50.

Simpson Timber Co., 2042 Washington Bldg., Seattle 1, Wash. Free plans for A-frame garden shelter.

Western Pine Association, Young Bldg., Portland 4, Ore. Catalogue available free. For full plans, see **Vacationland Homes Plans** below.

Vacationland Homes Plans, P.O. Box 4379, Portland 8, Ore. Architect's plans for \$5 each.