

Jet-Age (Continued)

years of microscopically detailed planning paid off in a performance as smooth as custard pudding. To get CAA certification for commercial use, Douglas plans to assign the first nine that come off the line to the rigorous Government testing program.

Of the three main contenders, Boeing got the earliest start. They flew the first 707 some four years ago, clocking it on a cross-country run at just under four hours. But last year the same ship improved the earlier average 592 mph eastbound by following regular airline routes at an average 612 mph coast-to-coast in well under four hours.

DURING the transitional period from prop-driven planes to jets, there's no doubt that a more foolproof system must be devised to guide jetliners through slower moving traffic without accident. In flight there will be no problem because they will fly well above the highest-flying prop-driven competition, but climbing and descending will present problems. When we reach the all-jet era sometime in the next seven years, the problems will be compounded. Radar presently geared to scout maverick thunderheads 200 miles away will have to be supplemented by safety guidance devices now in the experimental stage. When they are needed, they will be ready.

For now, you will be off to London or Paris for the week end in a jet whose engine has been proved as thoroughly as a new antibiotic for babies. General Electric, Pratt & Whitney, and Rolls-Royce are the big names in the new industry. They put their jets on mountaintops for sub-zero testing of the hot-air devices which keep ice from forming on the intake surfaces. They made sure that an accidentally absorbed stone, hunk of metal, or big bird would not

blow up or even foul a jet engine while airborne.

A sample of the reliability of these jet engines may be found in General Electric's standard test for airborne efficiency of its CJ-805. They put the engine in a jet fighter, run it above maximum safe altitude, give it cruel abuse via sudden throttle bursts and chops in mid-air, with instantaneous re-ignition, and find that it can go 150 hours like that without a part having to be changed or adjusted.

Super-thick aluminum alloy skins are used in all jetliners, with new indestructible welds and reinforcements at points of greatest stress. No Ameri-

cut to 20 inches. In addition, Convair dreamed up a hailstone gun to whang golfball-size ice balls off the wings at 575 mph. Damage: one small dent.

One jetliner will do the transport work of about three prop-driven aircraft like the DC-7 or Super-Constellation. On a one-for-three replacement basis, jet makers figure any airline can save itself \$11 million a year in operating costs—maybe more. Some 40 big and small foreign and domestic airlines have bought this argument, and upwards of 400 jetliners to prove it. Speedier airlifting of more people to faraway places on a near-commuter schedule



Once in final assembly, ships were subject to and their limits of stress. Cruellest tests of all followed when planes finally tried their wings in air.

can jet is going to come apart like an unduly flexed sardine-can lid. In addition, all jet makers have put their assembled body and wing sections through endurance tests far more rugged than anything flight conditions will require. Convair, for example, coaxes a 22,000-pound pressure device to pull its 880's wing apart by cutting a four-inch slit in the metal surface. Inspection would spot this in actual practice, but in the testing machine the wing didn't come apart even after days of tugging had widened the

should enable carriers to get back their billion-dollar investment relatively fast and bring jetliner fares, somewhat higher initially, to levels within the reach of practically anybody with a yen to travel.

Whether your destination is the continent or the islands, a tropical frolic or a heartfelt visit to "the old country," the watchword of jetliner travel guarantees you a thrilling trip with all the comforts of your own living room.

The watchword? "Relax!"

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← SHORT-CUT RING-A-LINGS

First Prize Winner in Pillsbury's 7th Grand National Recipe and Baking Contest by Mrs. Bertha E. Jorgensen, Portland, Oregon Adapted by Ann Pillsbury

BAKE at 375° for 15 minutes, then for 5 minutes. MAKES 1½ to 2 dozen rolls.

Soften.....2 cakes compressed yeast (or 2 packets active dry yeast) in ¼ cup warm water.

Combine.....½ cup butter or margarine and ¾ cup hot scalded milk in large bowl. Cool to lukewarm.

Add.....½ cup sugar
2 teaspoons grated orange rind
2 unbeaten eggs and the softened yeast.
2 teaspoons salt*

Add gradually.....4 to 4½ cups sifted Pillsbury's BEST All Purpose Flour* to form a stiff dough, beating well after each addition. Cover and let stand 30 minutes. Meanwhile, prepare Nut Filling.

Roll out.....to a 22 x 12-inch rectangle on floured surface. Spread half of dough along 22-inch side with Filling. Fold uncovered dough over filling.

Cut.....into 1-inch strips

(crosswise). Twist each strip 4 or 5 times. Then hold one end down on greased baking sheet for center of roll. Curl remaining strip around center on baking sheet as for a pinwheel, tucking other end under. Cover.

Let rise.....in warm place (85° to 90° F.) until doubled in size, 45 to 60 minutes.

Bake.....in moderate oven (375°) 15 minutes until light golden brown. Meanwhile prepare glaze of

¼ cup orange juice and 3 tablespoons sugar. Brush tops of rolls. Bake 5 minutes longer until deep golden brown. Remove from baking sheet immediately.

*This recipe developed for use with Pillsbury's BEST Self-Rising Flour by omitting salt.

Nut Filling

Cream ½ cup butter or margarine. Blend in 1 cup sifted confectioners' sugar thoroughly. Add 1 cup filberts or hazelnuts, ground or chopped very fine. (Other nuts may be substituted.)

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