long. The length of the blades is greater than the wingspan of some of our top fighter planes, including the P-38J, P-40, P-47 and P-51. The two engines will thrust the craft through the air at a cruising speed of 90 to 100 miles an hour, according to Agnew E. Larsen, of Rota-Wings, Inc., the manufacturer, in a report (*American Aviation,* Jan. 1).

"The failure of one engine will not result in any appreciable change in the operating characteristics of the craft," Mr. Larsen remarked.

In the event of one engine failure it would take less than one-tenth of a second to switch over to single-engine operation.

The overall height of the proposed helicopter is 13 feet. It will weigh 4,450 pounds and carry a load of over a ton. Estimated cost, without engines or radio, is $37,000. Mr. Larsen states that the new craft can gain altitude at a rate of 1,400 feet a minute.

Construction of a mockup of the plane is beginning, and it is expected that the craft will be in production within a year.

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COMMUNICATIONS

Civilian "Walkie Talkie"

May become a part of your household equipment, following FCC approval. Bands set aside for industrial and medical radio to prevent interference.

➤ "WALKIE-TALKIE," the powerful one-man broadcasting station that provides reliable short-range communications between military units today, may become a part of your household equipment, just like your radio or refrigerator. Under the heading of "Citizens' Radio Communication Service" the Federal Communications Commission has allocated the portion of the radio spectrum between 460 and 470 megacycles to the new radio service.

The news about "walkie-talkie" for civilian use was released as a part of a preview of America's postwar radio spectrum in a proposed frequency allocation plan issued by the FCC.

Housewives will be able to keep in direct touch with their husbands, with "walkie-talkie" installed in automobiles and stores. Doctors, farmers and professional men can use "walkie-talkie" to keep in contact with their offices or homes while making calls. Department stores, dairies, laundries and other business organizations can use the service to communicate with their delivery vehicles.

No technical knowledge will be required by the FCC to operate one of these devices. "Walkie-talkie" equipment in one popular form consists of a small box containing transmitting and receiving devices, with a microphone and earphone built into a hand-set like a familiar telephone unit. It is powered by batteries, has a practical range of several miles and weighs about 35 pounds.

At FCC hearings in September, the railroads demonstrated that radio would contribute to the safety of life and property and should be of almost universal benefit to the public. Therefore the Commission has set aside several channels for such use.

Three bands have been assigned for industrial and medical radio equipment, to prevent interference with other radio services. This means that a diathermy machine operating nearby will not interfere with the reception of programs on your radio.

Rural telephone service, a new communication service to furnish a radio-telephone link for isolated communities, farmers, ranchers, miners and others who cannot be or are not served by regular telephone wire systems, will share the band of frequencies allocated to television by the FCC.

Commercial television is going to remain roughly where it is, thus settling for the time being one of the most controversial questions discussed at the allocation hearings, whether television should stay in the lower part of the spectrum, or move to higher frequencies. In its report, the FCC stated that commercial television should not be denied the public until a system in the ultra-high frequencies can be developed and proven, since the time that may elapse before such a system can be worked out is indefinite and depends upon the resourcefulness of industry in solving many technical problems. However, the FCC has set aside space in the ultra-high portion of the spectrum for experimental development of color pictures and wide-channel television.

This means that you can expect about the same kind of television pictures that were possible before the war, with some wartime improvements, and that television sets selling from $75 up will probably go on the market soon after the war.

You need not expect to see television at your local movie house for some time to come. Since theater television is still in the experimental stage, the FCC has not allocated any specific frequencies for the service.

Likewise, no specific allocation is made for subscription radio, the service which would carry no advertising but would be supported by rental of a device to eliminate a "pig-squeal" superimposed on the program being broadcast.

You may be able to have a newspaper printed in your own home by facsimile broadcasting, a system that permits the transmission of printed or typed material, drawings or pictures through the air to be reproduced on paper exactly as they are sent at the receiving end.

Since public interest requires that FM (frequency modulation), staticless radio, be established in a permanent place in the radio spectrum before a considerable investment is made by the listening public in receiving sets and by the broadcasters in transmitting equipment, the FCC has allocated 90 channels to FM, an increase of 50 channels over the present space held by the service, and has moved it up in the radio spectrum to a point between 84 and 102 megacycles.

About 160 educational institutions have expressed interest in non-commercial educational radio which may profoundly affect not only American education but our democratic institutions as a whole. Therefore, the FCC has allocated 20 of the 90 FM channels to this service.

Criminals of the future will find the way of the transgressor harder as the police build up radio communication networks with a greatly-increased number of frequencies allocated by the FCC. These channels will make possible facsimile networks for transmitting photos and fingerprints from one police department to another and to the FBI in Washington. Fire departments will also be able to use radio, since the FCC has increased the space allocated to this service.

G. I. Joe, returning from war and desiring to set up his own amateur station, will have plenty of spectrum to work in. The FCC has boosted the number of channels for this service which is one of the oldest in radio, whose development closely parallels that of the entire radio art.

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