

RADIO-CRAFT

Incorporating

RADIO & TELEVISION

"RADIO'S GREATEST MAGAZINE"

. . . "Let's not have any more of this nonsense."—
Wendell Willkie . . .

CENSORSHIP VS. RADIO PROGRESS

By the Editor — HUGO GERNSBACK

ONE of the greatest anomalies during modern war is the fact that technical progress is both advanced and retarded. Strange as the statement may sound, it is perfectly true and logical, as the following consideration readily shows. During war time, any progress that has to do with the implements of war and all that goes with it, advances sharply. Developments which normally take decades to achieve, are often compressed into a few months. In war—and particularly in modern, technical war—speed is the paramount factor. At the same time, technical progress, by which war does not benefit, is slowed up and frequently disappears altogether. As our esteemed contemporary, the London WIRELESS WORLD, puts it, "War has a tendency to drive radio progress underground."

No one can find any fault whatsoever that technical progress for war purposes is paramount and that all efforts of all technicians should be bent on concentrating on it. Once the war is won, peace may well take care of itself; so what matters it if a little time is lost in shifting back from the war to the peace effort?

We are, however, very much concerned with censorship which not only drives future peace-time radio progress underground, but also makes it almost impossible for students and others who are just getting started in their technical profession to obtain necessary and often vital information through the press, whether it is a newspaper, weekly or technical magazine.

We have viewed with growing concern for some time the wholly unintelligent and often downright stupid censorship in our own country when it comes to dealing with technical problems. Normally, the censor is not a technician, he knows little or nothing about technical matters and cannot usually distinguish between what is antique, and what is so new that it might be of benefit to the enemy. The technical press is particularly irritated no end with the heavy restraint put upon it; and it becomes most difficult to publish worthwhile technical magazines at all in the United States today. A magazine of standing cannot forever rehash old matter, or print only such irrelevant material that no reader with any intelligence wishes to read. Every editor knows that really new inventions, for the most part, are taboo. The large manufacturing organizations and research laboratories have little worthwhile news to give out today, because they themselves are under a strict censorship. In consequence the technical magazines and the daily press get only a pitifully small amount of worthwhile technical information.

The magazine editor when he is not sure about the status of certain information, is required to submit such material to the censor who often holds it for days and weeks before releasing it.

To be sure, the entire United States Press today is under voluntary censorship; and as far as is known, the technical press to date has not violated the self-imposed trust. Radio magazines, however, appear to be in the most difficult position these days because there is hardly anything published that does not draw the immediate fire of the censors. Radio, admittedly, is one of the major implements of war, which is one reason that

the censor views everything published by the radio press with suspicion and often alarm.

I doubt if there is a single technical editor or publisher in the United States who does not know the difference between military radio and peace-time radio. Admittedly, a radio receiver can be used for both peace and war, but this is begging the question because, after all, we are concerned only with what a potential enemy can use against us, if we made the invention first and, he finding out about it, then turned it against us.

The important point is that technical editors know their business and know exactly how far they can go. The reason is simple; no technical editor worth his salt would long be an editor unless he was internationally minded. Year in and year out, exchange magazines and technical papers in every language flow over his desk. He therefore has a very accurate idea what the enemy already knows and what he doesn't know. Technical progress in such things anyway is usually pretty much an evolutionary and well-ordered process. Radio principles are the same all over the world. Admittedly, there are refinements; admittedly there are also sharp radio advances during war time for war purposes only. These, every editor knows through grapevine channels and he is careful not to publish such information; certainly when it does come to a supposedly revolutionary radio invention, he would be the last one to print it.

But when different censors have different ideas of U. S. censorship and often put publishers to great expense for no sensible reason, this then becomes vicious censorship; and, using Wendell Willkie's words on the subject—and we fully agree with him when he says—"Let's not have any more of this nonsense." For, mind you, there is not just one censor to whom a radio editor, for instance, can go; there is an Army censor, a Navy censor and an Air Corps censor. There is also a general censor and, on top of this, we have an "export" censor.

If these various and assorted censors would concern themselves with new military developments, we would be the last to take issue with them; but when such a censor invokes his ban on ancient material, then such censorship becomes ridiculous.

An example. The November issue of RADIO-CRAFT was two weeks late because a censor in one of the departments of our armed forces insisted upon killing a certain story and a cover picture, after the complete cover for the entire issue of RADIO-CRAFT had been printed, thus creating a great monetary loss to the publisher. And what was the offensive picture and article? A radio device well known to every country all over the world. A device several years old which had been done to death in the radio and technical press in practically every radio and other technical magazine throughout the entire world. An article on this subject numbering several pages ran in 1941 in the *Saturday Evening Post*, which has a circulation of over three million copies a week. The offending picture, incidentally, also ran in the *New York Times* in August of this year. All of this, however, did not deter the censor from insisting that the story

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CENSORSHIP VS. RADIO PROGRESS

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must be killed, even after it had been pointed out that the Nazis and Japanese have used and are using the identical device. The censor made the weak excuse that the American device could perhaps be used in "a different manner" than similar devices, now used by the enemy. This certainly again is under-estimating the technical intelligence of our two major enemies, who in the past have shown that when it came to radio devices, they certainly could match anything that we have.

Other censors act in this pattern because, as a rule, they do not have the technical training required to distinguish between what is new and what is ancient. Magazines of the type of RADIO-CRAFT, as is well known, are read closely in all foreign countries. Most first-class radio magazines have a good-sized foreign subscription list. This brings us to the "export" censor, who knows all this quite well; yet he has banned RADIO-CRAFT back numbers, going back as far as 1940, despite the fact that such copies have been sent all over the world before Pearl Harbor. So what happens? We have a long list of items which we must tear out of copies of old magazines before they are allowed to be shipped abroad! For some reason, the same censor seems to have his face set dead against anything whatsoever with the words "frequency modulation" in it. Yet, if there is one radio subject on which there has been published a veritable torrent, not only here, but abroad, it is the subject of frequency modulation. Once Professor Edwin H. Armstrong had explained the principles and technical data of frequency modulation, there was little that any one could add to it, except routine developments; consequently, articles which RADIO-CRAFT has been publishing on the subject cannot in any way be considered revolutionary news. They are merely routine observations by various writers, serving information, etc.

The same is the case of television on which no major recent developments have been made and certainly not much practical information has or can be published because, for the time being, television, for all purposes, stands still. Nevertheless, the export censor does not allow certain articles on television to leave the country either, even if the information is well known in every country the world over.

Then there is the matter of U. S. patents which are under a particularly powerful taboo by the censors. Now then, as every one knows, the *United States Patent Gazette* publishes all new patents each and every week so anyone interested in any patent whatsoever can see and read for himself. Wisely, the patent office often refrains in war times from publishing certain inventions known to have a war aspect. That leaves the other routine inventions open for the inspection of all. The export censor may tell you that the *Patent Gazette* can probably not be sent abroad, but that is not the point. If an Axis Intelligence operator sees an invention which he thinks has merit to his country, he will find ways and means to send it out of the U. S.—censorship or no censorship. The censor himself knows this well but he will tell you that he must make it as tough as possible for the enemy so that no information of this type shall leave the country.

All of this is indeed, beside the point, because we doubt that there is anything printed in the *Patent Gazette* vital to the enemy; and, for this reason, patent information printed by a magazine only copies such material from the *Patent Gazette*; there-

fore it can do little harm elsewhere.

We appreciate the fact that perhaps we have not been at war long enough so that the various censors can distinguish between military and non-military technical information. The simple remedy seems to lie in a technical censorship board who intelligently can deal quickly with a technical problem whenever it comes up; and that is really all that the technical publishers of America desire.

SEVEN NEW RADIO TUBES

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individual tubes, or by utilizing a combination of these two methods.

TABLE VI—6AG5

R.F. Amplifier	
Heater Voltage (A.C. or D.C.)	6.3 volts
Heater Current	0.3 amps.
Plate Voltage	300 max. volts
Screen Voltage	150 max. volts
Plate Dissipation	2 max. watts
Screen Dissipation	0.5 max. watt
Typical Operation and Characteristics—Class A1	
Amplifier:	
Plate Voltage	100 125 250 volts
Screen Voltage (Grid No. 2)	100 125 150 volts
Cathode-Bias Resistor	100 100 200 ohms
Plate Resistance (approx.)	0.3 0.5 0.8 megohm
Transconductance	4750 5100 5000 micromhos
Grid Bias for Plate Cur. = 10 μ amp.	-5 -6 -8 volts
Plate Current	5.5 7.2 7 milliamp.
Screen Current	1.6 2.1 2 milliamp.

TABLE VII—6J6

A.F. Amplifier	
Heater Voltage (A.C. or D.C.)	6.3 volts
Heater Current	0.45 amps.
Plate Voltage	150 max. volts
Plate Dissipation (each unit)	1.5 max. watts
Characteristics—Class A1 Amplifier—Each Unit	
Plate Voltage	100 volts
Cathode Bias Resistor*	50** ohms
Plate Current	8.5 milliamp.
Amplification Factor	32
Plate Resistance	6000 ohms
Transconductance	5300 micromhos

R-F Power Amplifier and Oscillator—Class C Telegraphy

D-C Plate Voltage	150 max. volts
D-C Grid Voltage	-40 max. volts
D-C Plate Current (per unit)	15 max. milliamp.
D-C Grid Current (per unit)	8 max. milliamp.
D-C Plate Input (per unit)	2.25 max. watts
Plate Dissipation (per unit)	1.5 max. watts

Typical Operation at Moderate Frequencies in

Push-Pull—Both Units***

(Key-down conditions per tube without modulation)

D-C Plate Voltage	150	volts
D-C Grid Voltage		
From a fixed supply of	-10	volts
From a grid resistor of	625	ohms
From a cathode resistor of	220	ohms
D-C Plate Current	30	milliamp.
D-C Grid Current (approx.)	16	milliamp.
Driving Power (approx.)	0.35	watt
Power Output (approx.)	3.5	watts

*Under maximum rated conditions, the resistance in the grid circuit should not exceed 0.5 megohm with cathode bias. Operation with fixed bias is not recommended.

**Value is for both units operating at the specified conditions.

***Approximately 1.5 watts can be obtained

RADIO

CATALOG NO. 50

164 PAGES

SETS-PARTS

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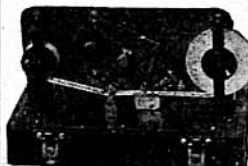
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OSCILLOSCOPE AND OTHER RADIO PARTS wanted for cash. Send list with prices to John Hart, 1123 Broadway, New York, N. Y.

FOR SALE—Equipment, Stock. Al's Radio, 10-11 49 Avenue, Long Island City.

BURNED OUT RADIO TRANSFORMERS CAN BE salvaged. We rewind all types of transformers. Write for list. Transformer Rewinding Service, 1302 West Hill, Valdosta, Georgia.

when the 6J6 is used at 250 mc. as a push-pull oscillator with a plate voltage of 150 volts, with maximum rated plate dissipation and with a grid resistor of 2000 ohms common to both units.