

THE STANCIL-HOFFMAN CORPORATION

921 NORTH HIGHLAND AVENUE · HOLLYWOOD, CALIFORNIA 90038



February 16, 1966

Mr. T. Nelson  
Vassar College  
Poughkeepsie, New York 12601

Dear Mr. Nelson:

I greatly appreciated receiving your recent card relative to magnetic film equipment.

Enclosed is a brochure on the S7 and the ARP70 electronics section along with our A70 series of amplifiers used in the electronics.

For your further information, I have enclosed an article on Interlock motors that may be of interest to you.

Further enclosed is a description of our Model R70 recorder which has been so widely used in radio stations for both the normal speed recordings with standard specifications and the very low speed recording for reference and logging purposes.

Please let me know if we may be of further assistance.

Cordially yours,

STANCIL-HOFFMAN CORPORATION

William V. Stancil,  
President

WVS:kb  
Encl.



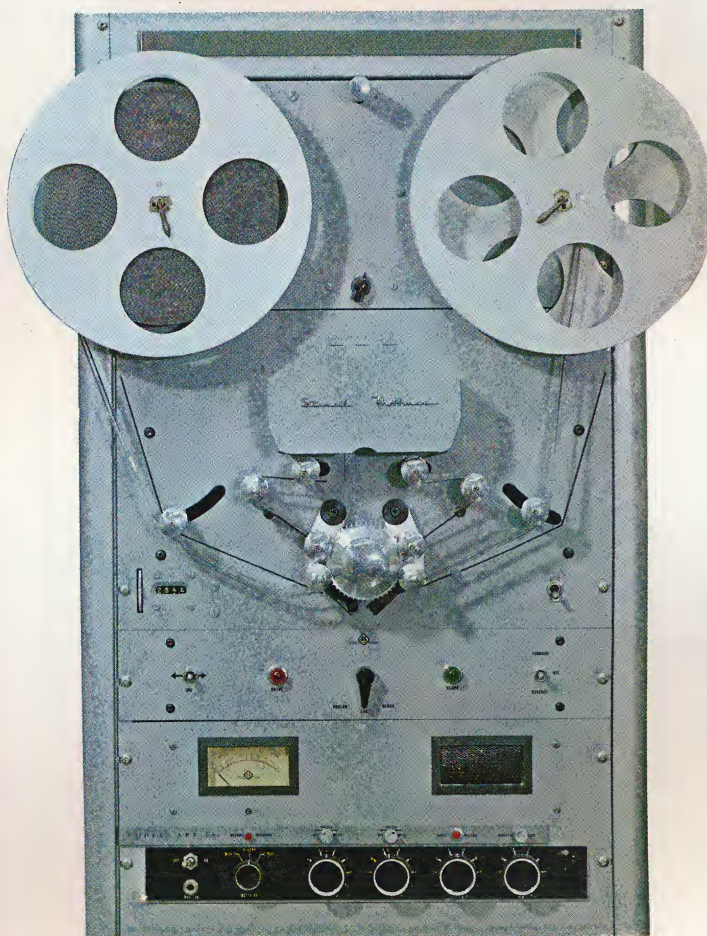
**FEATURES THAT MAKE THE  
STANCILO-HOFFMAN S-7 YOUR  
BEST BUY!**

- Finest professional quality with unequalled convenience.
- Most efficient use of completely transistorized electronics.
- Remote control without relays.
- Equipped for either local or remote control and synchronous and/or interlock drive.
- Handles single or multi tracks with film capacities up to 8,000 feet.
- Extra large single film sprocket offering lowest flutter rate.
- Simple and fast threading, with automatic cut-off in case of film breakage.
- Automatic rewind and automatic cut-off with dynamic braking.
- High speed cueing both forward and reverse.
- Optical kit available for 16mm or 35mm optical playback.
- Magnetic clutch drive.
- Accepts either "A" or "B" film wind.

The Stancil-Hoffman Model S-7 Magnetic Film Recorder-Reproducer equipment has been specifically designed to fulfill the need for a heavy duty, highly reliable portable or fixed installation for master recording, reproducing, "transfer", re-recording, and optical reproduction, on all standard film sizes and speeds. In spite of its extreme versatility, Model S-7 is automatic in operation, yet uses no relays for either local or remote operation. Capable of providing the finest quality recorded sound, Model S-7 is easy to thread and operate, and its magnetic clutch-driven single film sprocket permits rapid cueing with positive synchronous drive.

**INTRODUCING A NEW ERA OF OPERATIONAL  
QUALITY AND CONVENIENCE!**

# **MODEL S-7 SERIES MAGNETIC FILM RECORDER-REPRODUCER**



- COMPLETELY TRANSISTORIZED
- AUTOMATIC OPERATION
- MAGNETIC CLUTCH DRIVE

THE MARK OF QUALITY

**STANCILO-HOFFMAN**

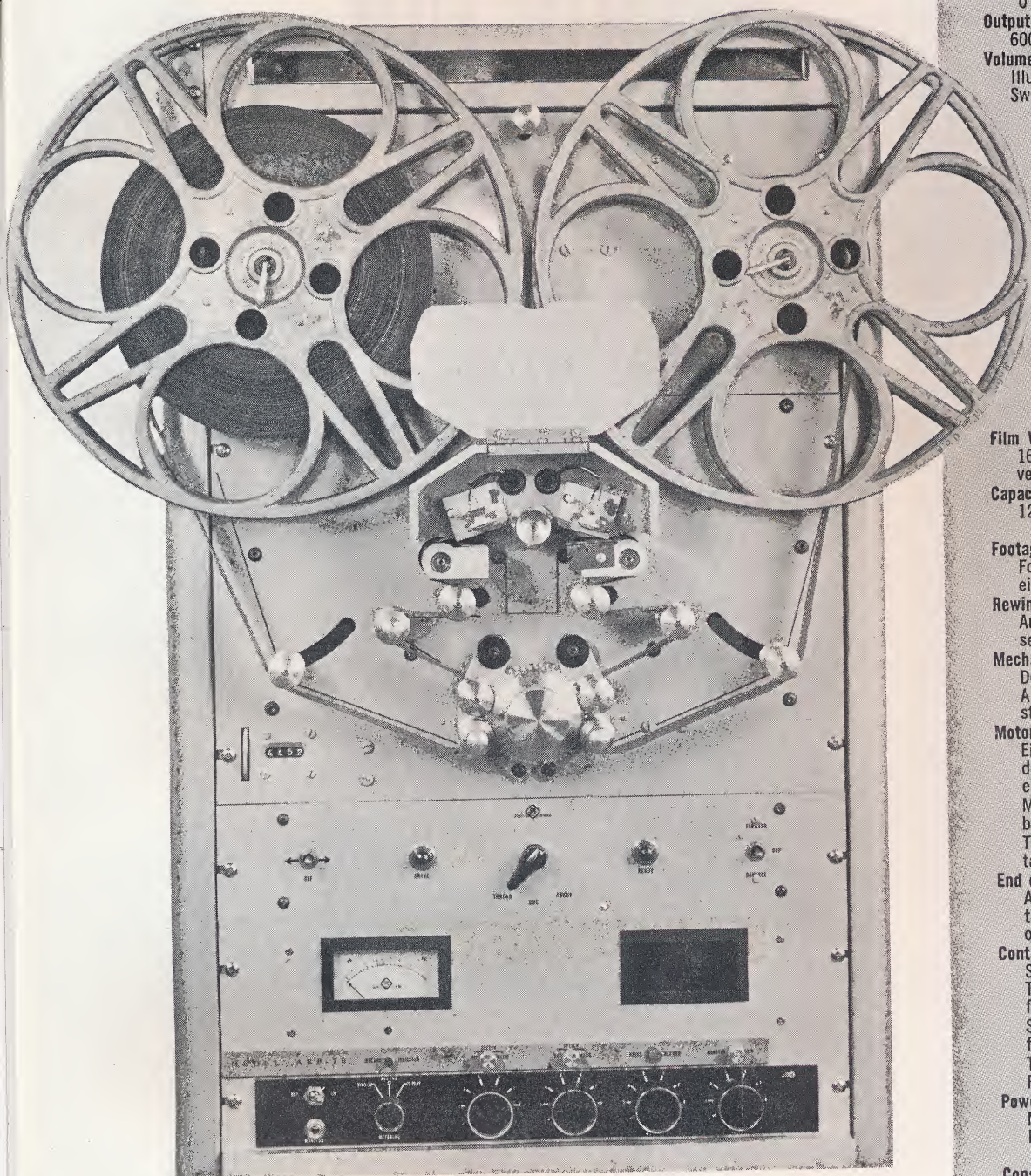
921 N. HIGHLAND AVENUE

HOLLYWOOD, CALIF. 90038

Cable Address: STANHOFF

Manufacturers of professional quality magnetic recording systems for motion picture, broadcasting, communications and instrumentation.





## SPECIFICATIONS

### Frequency Response

35 MM  $\pm$  2 DB to 15000 cycles  
16 MM  $\pm$  2 DB to 12000 cycles

### Distortion

1.5% Total Harmonic

### Signal to Noise Ratio

Better than 60 DB

### Wow and Flutter

0.1% RMS

### Input Level (without mixer)

Two Microphones and two high level Bridging

### Output Level

"0" V.U. (+ 4 DBM) nominal

### Output Impedance

600 Ohm Transformer

### Volume Indicator

Illuminated. Calibrated in V.U.

Switching provisions:

1. LIVE OR TAPE
2. AUDIO OR BIAS

### Film Widths

16 MM, 17.5 MM & 35 MM as ordered. (Conversion kits available to handle all 3 film sizes.)

### Capacity

1200 feet or 2000 feet standard as ordered.

### Footage Counter

Four digit coupled to film sprocket to read either forward or reverse.

### Rewind

Automatic high speed with dynamic braking and sensing for end of film.

### Mechanical Filtering

Double flywheel, precision bearing suspension. Air piston damping. Front panel adjustment of stabilizer arms.

### Motor Drive

Either single or three phase hysteresis as ordered. Space provisions for interlock motor for either sync and/or interlock.

Magnetic clutch coupling from precision gear box to single large film sprocket.

Two large torque sensitive motors for feed and take-up reels.

### End of Reel Sensing

Automatic cut-out switches in film "tight loop" to detect incorrect threading, splice breakage, or end of reel.

### Controls

Single selector switch for modes of operation of THREAD, CUE and READY. No relays. Terminated for full remote control.

Search toggle switch to jockey film high speed forward or high speed reverse.

Toggle switch for synchronous FORWARD or REVERSE.

### Power Consumption

Model S7, 315 watts.

Model ARP70, 20 watts.

### Construction

19" panels, unit assembly.

Transport panel, Model S7, 12 $\frac{1}{4}$ " x 19".

Control panel Model CU7, 3 $\frac{1}{2}$ " x 19".

Reel panel Model FT 1000 (1200' capacity)

8-3/4" x 19"

Reel panel Model FT 2000 (2000' capacity)

8-3/4" x 19"

Electronic panel Model ARP70, 7" x 19".

Designed for either rack cabinet or carrying case combinations.

NOTE: Basic Model S7 includes CU7 and FT reel panel.

### Weight

Model S7 complete, 81 pounds.

Model ARP70, complete, 15 pounds.



## MODEL S-7 MAGNETIC FILM RECORDER/REPRODUCER

The Film Transport contains the record and playback heads, the sprocket drive system, and a motor panel at the rear for mounting a synchronous motor and/or an interlock motor. Normally, Stancil-Hoffman motors are supplied with the equipment although sufficient space is provided to accommodate any of the types of motors used in motion picture recording equipment. In re-recording installations, a synchronous motor and an interlock motor are normally provided on each transport, and no motor distribution system is required. Each synchronous motor has reserve power sufficient to drive a 16mm projector through the interlock system; however, on 35mm projectors, a synchronous motor and an interlock motor would be required unless a motor distribution system is utilized.

The motors are coupled to the sprocket system by means of a loop of silent chain. When a change in drive speed is desired, or when changing to a supply voltage of different frequency, it is only necessary to change the size of the drive sprocket pulley. To insure fast threading and long film life, a single film sprocket 2 $\frac{7}{8}$ " in diameter is used, with 48 teeth for 35mm and 17.5mm film and 30 teeth for 16mm film. The film sprocket is coupled to the motor drive by means of a magnetic clutch to permit fast, easy cueing. As soon as the synchronous motor or interlock motor is energized, the clutch locks and insures positive drive. During those periods when the drive motors are not energized, the film sprocket is free-wheeling and it is possible to run fast forward with the film threaded to locate a

start mark. The footage counter is coupled directly to the film sprocket so that accurate footage measurements are maintained at all times, including those periods when the sprocket is in "free-wheeling" condition.

Designed for "master" recording, Model S-7 incorporates a most effective mechanical filter system. Two large and critically balanced flywheels provide rock-solid tone with negligible flutter, and two self-centering stabilizing arms, one coupled to a pneumatic dashpot, stabilize the tape motion very quickly during the start period. The stabilizing arms minimize the effects of splices or damaged film, and also provide automatic stop in the event of film breakage, or at the end of film supply.

## MODEL ARP-70 RECORD/PLAYBACK AMPLIFIER

For utmost reliability and minimum operating maintenance, the electronic sections of Model S-7 incorporate the latest transistorized design. Each transistorized electronic unit (record amplifier, playback amplifier, bias oscillator, etc.) is self-contained on a compact printed-circuit card which plugs into the electronic chassis, and can be in-

stantly replaced in the rare event of component failure. The plug-in feature permits greater system versatility at minimum cost increase, since amplifiers with differing operating characteristics can be interchanged to meet individual system requirements without the need for design modifications. Aside from their long-life characteristic, the

small size of the transistors and associated components plus low power consumption and subsequent lower heat generation affords the advantage of assembly of the electronic section in much smaller space than heretofore possible. Noticeably absent, too, are the hum, microphonics, and noise common to vacuum tube designs.

## FT SERIES REEL PANELS

FT Series Reel Panels are supplied in several progressive sizes to accommodate reels of desired film capacity to 8,000 feet. Two Stancil-Hoffman Model T3-6 torque motors are mounted to the reel panel, which also includes an automatic rewind idler, and a screwdriver-adjustable switch for selecting either "A" or "B" film wind. The automatic

rewind feature saves considerable operator time, particularly in multiple installations. The operator need only thread the film from the take-up to the supply reel, and the rewind sequence starts automatically. At the end of the film supply, the sequence automatically stops and dynamic braking is applied to both reels to prevent damage to

film ends. All functions other than the automatic rewind are supplied from the CU-7 Control Panel. During the threading and cueing operations, dynamic braking is automatically applied to prevent film spillage. In the "Ready" condition the correct running voltages to both take-up and supply reels are automatically applied.

## RECORD AND PLAYBACK HEADS

Standard models of the S-7 Transport are supplied with single track heads. When 16mm film is specified, the heads can be supplied for either edge or center track re-

coding. When 17 $\frac{1}{2}$ mm or 35mm film is specified, the heads are furnished with the desired industry-standard track placement. Model S-7 can also be supplied with multi-

track heads on special order, with a maximum of 8 tracks on 16mm film, 6 tracks on 17 $\frac{1}{2}$ mm film, and 16 tracks on 35mm film.

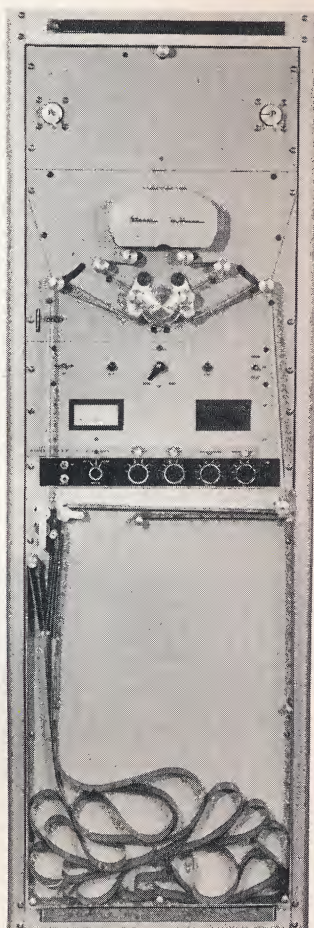
## CONTROL PANEL CU-7

Operating controls have been held to a minimum, and no relays are used for either local or remote operation. All electrical operating controls are located on the CU-7 Control Panel. The bar knob in the center of the panel has three positions, and is the only control used in setting up Model S-7 for operation. When set to the "Thread" position, a low DC voltage is applied to the reel motors to provide a slight dynamic braking, and the film may be threaded eas-

ily. In the "Cue" position, a small amount of AC is applied to the reel motors to keep the film taut, and the film sprocket may be rotated by hand to locate a start mark. For fast forward or reverse in "Cue" position, it is only necessary to deflect the switch at the left of the CU-7 panel in the desired direction, while manually assisting the start at the film sprocket or take-up reel. When the bar knob is in the "Ready" position, the transport is set to be driven by either the

synchronous motor or the interlock motor, and the green "Ready" light will be illuminated if the film is correctly threaded. On models having a synchronous motor, the switch to the right of the panel or the remote control switch can be thrown to "Forward" or "Reverse" depending on the desired direction of operation, the magnetic clutch will engage, the drive will be operative, and the red "Drive" light will be illuminated.

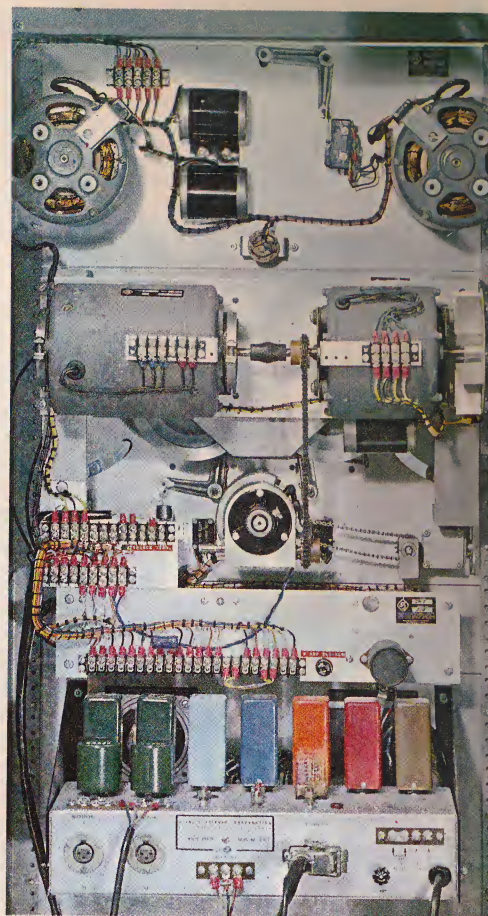




#### OPTIONAL LOOP RECORD-REPRODUCER

Model S-7 can be supplied for synchronized loop recording at nominal additional cost. The system can be operated with synchronous motor drive on both the recorder and projector; however, the most convenient and effective operation will be obtained through the use of an interlock system. For operation as a loop recorder/reproducer, the standard playback head is removed, an erase head is installed, and a control circuit is added to permit the record head to be connected for alternate use as a playback head.

With the film loops running, Model S-7 can be switched instantly from record to playback to check dialogue synchronization. If it is not satisfactory, recording can be instantly restarted and the cycle continued until the dialogue is satisfactorily synchronized. The dual use of the record head for playback in the loop system insures absolute playback register, which would not be possible if a separate offset playback head were used. Although there is a noticeable loss of high frequencies when the film is played back in this manner, the actual quality of the recorded material is not affected. When the recorded film is played back through the regular S-7 playback head, or on other quality equipment, the full recorded range will be reproduced. Model S-7 can be easily and quickly returned to normal operation in a few minutes' time by removal of the erase head and reinstallation of the standard playback head.



#### REAR VIEW S7/ARP70

The two motors at top are heavy duty direct drive reel torque motors.

The two lower motors are the interlock motor on the left and the hysteresis synchronous motor on the right coupled by a precision chain drive to the gear box.

ARP70 Electronic chassis at bottom.

#### MODEL D-7 FILM PLAYBACK

Model S-7 Transport is supplied with playback head and playback amplifier only for use as a Film Phonograph or Dummy in re-recording installations. Several units can be interlocked with a projector; generally, one unit is used for dialogue, one for music, and one for sound effects. Consoles are also available to control the operation of as many as six Dummies and one projector with provisions for mixing as many as six inputs, with program and dialogue equalizers and high and low pass filters. Further information on these systems is available on request.

#### ACCESSORY OPTICAL REPRODUCER

For added convenience, optical reproduction facilities are available with Model S-7. In operation, it is only necessary to thread the film above an idler for magnetic sound, or below the idler for optical sound. The optical reproducer attachments, which consists of an exciter lamp and power supply, a lens system, a photo cell, and a preamplifier, can be installed at the factory or is available in kit form for simple field installation at a later date.

THE STENCIL-HOFFMAN CORPORATION

921 NORTH HIGHLAND AVENUE • HOLLYWOOD, CALIFORNIA 90038

(Code 213) 464-7461

Specifications subject to change without notice.



**PRICE SCHEDULE**

**MAGNETIC FILM RECORDER  
SERIES S-7**

**SERIES S-7** MAGNETIC FILM RECORDER/REPRODUCER, SINGLE CHANNEL, 117 VOLTS, A.C., SINGLE PHASE <sup>(1)</sup>, COMPLETE WITH ELECTRONICS, 2,000 FT. FILM CAPACITY.

MODEL/MOUNTING	FILM WIDTH	FILM SPEED	LINE FREQ.	CATALOG #	PRICE	
<b>S-7-U UNMOUNTED</b>	16 mm	36 fpm	50 cps	7631	\$ 2,750.00	
			60 cps	7632		
	17.5 mm	45 fpm	50 cps	7741	2,750.00	
			60 cps	7742		
		90 fpm	50 cps	7791	2,750.00	
			60 cps	7792		
		2 Speed 45 and 90 fpm	50 cps	7793	2,875.00	
			60 cps	7794		
		35 mm	45 fpm	50 cps	7341	2,795.00
				60 cps	7342	
	90 fpm		50 cps	7391	2,795.00	
			60 cps	7392		
	2 Speed 45 and 90 fpm		50 cps	7393	2,920.00	
			60 cps	7394		
<b>S-7-R MOUNTED IN 66 1/2" RACK CABINET</b>	16 mm	36 fpm	50 cps	7635	2,850.00	
			60 cps	7636		
	17.5 mm	45 fpm	50 cps	7745	2,850.00	
			60 cps	7746		
		90 fpm	50 cps	7795	2,850.00	
			60 cps	7796		
		2 Speed 45 and 90 fpm	50 cps	7797	2,975.00	
			60 cps	7798		



MODEL/MOUNTING	FILM WIDTH	FILM SPEED	LINE FREQ.	CATALOG #	PRICE
<b>S-7-R</b>	35 mm	45 fpm	50 cps	7345	2,895.00
			60 cps	7346	
		90 fpm	50 cps	7395	2,895.00
			60 cps	7396	
		2 Speed 45 and 90 fpm	50 cps	7397	3,020.00
			60 cps	7398	

### SERIES S-7 OPTIONAL ACCESSORIES

MODEL	DESCRIPTION	CATALOG #	PRICE
ILM-1	INTERLOCK MOTOR, factory installed. (Specify voltage, phase & distributor speed)	7901	\$ 160.00
LR-2	LOOP RACK, for 200 ft. film loop for mounting in rack cabinet beneath film transport. (Specify film width) Dimensions: 29-3/4"h x 19"w.	7902	325.00
OSR-16	OPTICAL SOUND REPRODUCER KIT, 16 mm, including exciter lamp, photo cell & amplifier..	7906	295.00
OSR-35	OPTICAL SOUND REPRODUCER KIT, 35 mm, including exciter lamp, photo cell & amplifier..	7907	295.00
RC-1	RACK CABINET, 61-1/4" x 19" rack space. Overall dimensions: 66-1/2"h x 22"w x 17-1/2"d.	7903	150.00
PC-1	PORTABLE CASE, for film transport and control panel. Mounting space: 26-1/2" x 19".	7904	85.00
PC-2	PORTABLE CASE, for electronics. (For one ARP-7 and one AM-7) Mounting space: 14" x 19".	7905	67.00

- NOTES:
- (1) For 230 volt, 3 phase operation, add \$150.00. (Includes all parts factory installed)
  - (2) Multi-channel equipment available - prices on request.
  - (3) For additional accessories, please see GENERAL ACCESSORIES PRICE SCHEDULE.
  - (4) All prices are F.O.B. LOS ANGELES, CALIFORNIA and SUBJECT TO CHANGE without notice.





**PRICE SCHEDULE**

**MAGNETIC FILM REPRODUCER  
SERIES D-7**

**SERIES D-7**

MAGNETIC FILM REPRODUCER ONLY, SINGLE CHANNEL, 117 VOLT, A. C., SINGLE PHASE <sup>(1)</sup>, COMPLETE WITH REPRODUCE ELECTRONICS, 2000 FT. FILM CAPACITY.

MODEL/MOUNTING	FILM WIDTH	FILM SPEED	LINE FREQ.	CATALOG NO.	PRICE	
<b>D-7-U UNMOUNTED ONLY (31 3/4" X 19")</b>	16 mm	36 fpm	50 cps	7101	\$ 2,150.00	
			60 cps	7102		
	17.5 mm	45 fpm	50 cps	7103	2,150.00	
			60 cps	7104		
		90 fpm	50 cps	7105	2,150.00	
			60 cps	7106		
		Two Speed 45 & 90 fpm	50 cps	7107	2,250.00	
			60 cps	7108		
		35 mm	45 fpm	50 cps	7109	2,195.00
				60 cps	7110	
	90 fpm		50 cps	7111	2,195.00	
			60 cps	7112		
	Two Speed 45 & 90 fpm		50 cps	7113	2,295.00	
			60 cps	7114		

- NOTES: (1) For 230 volt, 3 phase operation, add \$150.00. (Includes all parts - factory installed.)  
 (2) Multi-channel equipment available - prices on request.  
 (3) For additional accessories, please see GENERAL ACCESSORIES PRICE SCHEDULE.  
 (4) All prices F.O.B. LOS ANGELES, CALIFORNIA, and SUBJECT TO CHANGE without notice.





MODEL	DESCRIPTION	CATALOG #	PRICE
ILM-1	INTERLOCK MOTOR, factory installed. (Specify voltage, phase & distributor speed.)	7901	\$ 160.00
LR-2	LOOP RACK, for 200 ft. film loop for mounting in rack cabinet beneath film transport. (Specify film width) Dimensions: 29-3/4" h x 19" w.	7902	325.00
OSR-16	OPTICAL SOUND REPRODUCER KIT, 16 mm, including exciter lamp, photo cell & amplifier.	7906	295.00
OSR-35	OPTICAL SOUND REPRODUCER KIT, 35 mm, including exciter lamp, photo cell & amplifier.	7907	295.00
RC-1	RACK CABINET, 61-1/4" x 19" rack space. Overall dimensions: 66-1/2" h x 22" w x 17-1/2" d.	7903	150.00





# THE STENCIL-HOFFMAN CORPORATION

## PRICE SCHEDULE EFFECTIVE JANUARY 10, 1962

## MAGNETIC FILM EQUIPMENT GENERAL ACCESSORIES

MODEL	DESCRIPTION	CATALOG#	PRICE
AM-7P	MIXER, 4 position, 6 input, in portable case	6901	\$ 900.00
AM-9P	MIXER, 2 position, 2 input, in portable case	9909	355.00
EV-666	MICROPHONE, wide range DYNAMIC, cardioid, Lo - Z	6903	185.00
EV-524	WINDSCREEN, for EV-666 microphone	6904	5.00
SP-5	BOOM, FISHPOLE, telescopic 5 ft. to 10 ft., with 360 degree swivel	6914	99.50
EV-366	BOOM HANGER, for EV-666 microphone	6905	30.00
DHS-1	HEADPHONES, wide range DYNAMIC, 600 ohms	6906	45.00
ED-300	HEADPHONES, wide range SEALED CRYSTAL, Hi - Z	6907	32.00
MC-1	CABLE, microphone extension, 2 conductor shielded, 50 ft., with Cannon XL connectors	6916	22.75
MC-2	CABLE, microphone extension, 2 conductor shielded, 50 ft., with Cannon P-3 connectors	6917	27.50
TC-1	CABLE, AUDIO TRANSMISSION, 3 shielded pairs, 50 ft. with Cannon P-6 connectors	6918	49.50
TC-2	CABLE, CAMERA POWER & CONTROL, 6 wire #16 rubber jacketed, 75 ft. with Cannon P-6 connectors	6919	56.50
N3-2	CONVERTER, ROTARY, 24 vdc to 230 v. 60 cps. 3 phase	6908	400.00
N3-2A	CONVERTER, ROTARY, 24 vdc to 230 v. 50 cps. 3 phase	6909	400.00
N3-R2	CONVERTER, ROTARY, 24 vdc to 117 v. 60 cps. 1 phase	6910	400.00
N3-R2A	CONVERTER, ROTARY, 24 vdc to 117 v. 50 cps. 1 phase	6911	400.00
CC-5V	CONTROL, CAMERA SPEED, 60 cps.	6912	117.50
CC-5VA	CONTROL, CAMERA SPEED, 50 cps.	6913	117.50
HD-1	DEMAGNETIZER, HEAD, 117 v. 50/60 cps	6915	10.00
BE-3	DEMAGNETIZER, BULK, HI FLUX, film or tape, for reels up to 10-1/2 in. x 35 mm. max., 117 v. 50/60 cps.	9911	125.00
BE-3A	DEMAGNETIZER, BULK, HI FLUX, film or tape for reels up to 10-1/2 in. x 35 mm. max., 230 v. 50/60 cps.	9912	125.00



MODEL	DESCRIPTION	CATALOG#	PRICE
DF-16	PRECISION REEL, detachable flange, 16 mm 1200 ft. capacity	6920	\$ 24.00
DF-17	PRECISION REEL, detachable flange, 17.5 mm., 1200 ft. capacity	6921	24.00
DF-35	PRECISION REEL, detachable flange, 35 mm., 1200 ft. capacity	6922	24.00

STANDARD FREQUENCY and AZIMUTH ALIGNMENT FILMS,  
on plastic core. (Each SFA film is equalized to SMPTE  
standards and contains an azimuth adjust signal of one minute  
duration and standard frequency test tones.)

MODEL	FILM WIDTH	FILM SPEED	TRACK POSITION	CATALOG#	PRICE
SFA-1	16 mm	36 fpm	Both center & edge	6990	\$ 39.00
SFA-2	17.5 mm	45 fpm	ASA track one	6991	45.00
SFA-3	17.5 mm	90 fpm	ASA track one	6992	55.00
SFA-4	35 mm	45 fpm	ASA track one	6993	60.00
SFA-5	35 mm	90 fpm	ASA track one	6994	75.00

NOTES:

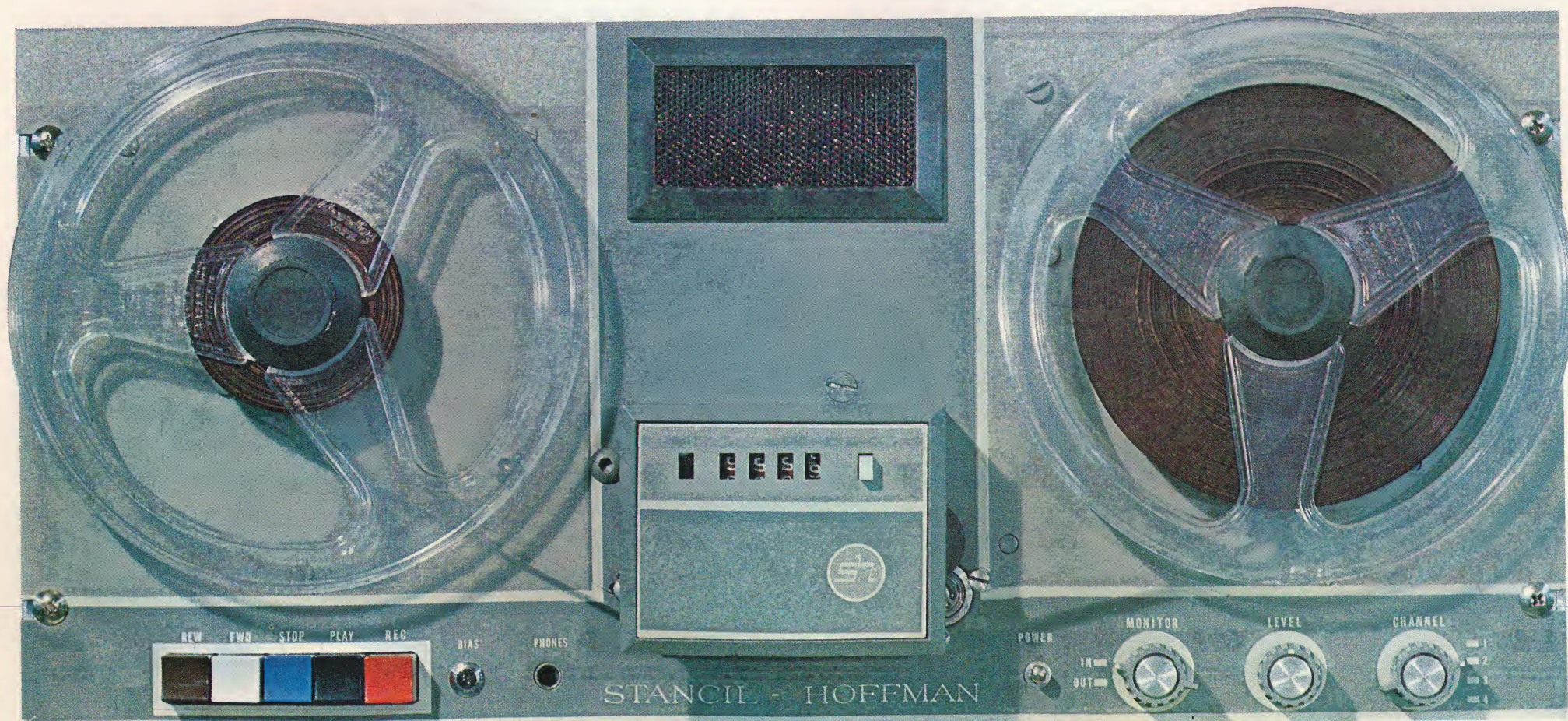
- (1) Accessories peculiar to only one machine model are listed on that specific product price list.
- (2) When ordering, please order by CATALOG NUMBER and DESCRIPTION.
- (3) All prices are F.O.B. LOS ANGELES, CALIFORNIA, and are SUBJECT TO CHANGE without notice.





# MODEL R-70 SERIES MAGNETIC TAPE RECORDERS

A new concept in magnetic recording and reproducing equipment is now offered by the Stancil-Hoffman Corporation. In cooperation with leading communication and broadcast engineers, a basic model transport has been designed for wide range recording in Broadcast, Motion Picture, and Professional recording, or, using very low tape speeds, for Police, Fire, Legal, Airport, and "Logging" recording. While the packaging is new, every mode of operation—every component has been proven by years of continuous 24 hour a day operation. The Stancil-Hoffman R70 Series represent the culmination of 17 years experience in the design and manufacture of magnetic recording equipment with every advance incorporated—temperature immune transistor electronics, gentle handling of the triple play or thinnest tapes, and all features for automatic recording and playback.





# MODEL R-70 SERIES MAGNETIC TAPE RECORDERS

**ELECTRONICS** ■ The one design transport is mated with either integral electronics for a compact self-contained assembly with preset gain controls (Electronic Chassis ARP76) or external electronics offering microphone and high level mixing (Electronic Chassis ARP70). Using the integral electronics, ARP76, from one to four tracks of record, playback, automatic gain control (AGC), monitor and voice or signal operation are included on a single chassis using the A70 Series of plug-in modules. These modules provide reliability based on over 10 years of dependable application of transistors. Stancil-Hoffman was the first company in the United States to commercially produce all transistor electronics for magnetic recording. ■ **CONSTRUCTION** ■ All motors and chassis are directly mounted on a rugged  $\frac{3}{4}$ " dural panel. The basic R70 transport includes the drive motor, torque motors, pushbutton controls, counter, monitor switches and head assemblies. Any component subject to wear is in the open for inspection or preventive maintenance. A heavy duty solenoid operates the pinch wheel through a self-compensating spring linkage eliminating adjustments and noise. The same movement is coupled to the tape lift member in the head assembly. ■ **CONTROL CHASSIS** ■ To handle the various modes and terminations of operation and provide D.C. power for the solenoid and dynamic braking, a control unit chassis is located on the rear side of the transport. When using the integral electronics, control unit CU76 contains the regulated power supply, bias oscillator, plug-in mode relay and all of the automatic control circuitry and connectors. The CU70 is used with the self-contained ARP70 external electronics eliminating duplication of the amplifier power supply and bias oscillator. ■ **AUTOMATION** ■ The integral electronics, ARP76 and CU76, offer the widest applications of magnetic recording. The units may be clock operated, signal operated or remotely operated for delayed broadcast, monaural or stereo, and logging. Complete circuitry is furnished for automatic transfer from one unit to a second unit, pause or reversal. Only one mode relay is used. Operated from transistors, this plug-in relay immediately starts/stops the motor system in either record or playback from photo cells, tones, switches, or voice. ■ **MOTION MEMORY SENSOR** ■ Covered by Stancil-Hoffman patent number 3,141,626, the

MMS positively prevents tape damage regardless of the sequence of operation. On one of the torque motor shafts is a ceramic disc magnet which induces flux into a pick up coil when the reel is in motion. Now you can safely switch from high speed rewind directly into "play" without stress on the thinnest tape. The reels come to a gentle stop then proceed to the next mode. Differential braking is accomplished by a leaf spring contact assembly which "feels" the tape direction to balance the power to either the feed or take-up motors. ■ **THREE MOTOR SYSTEM** ■ Two cool running special 4 pole torque motors direct drive the reels for velvet smooth take up and hold back tension, high speed winding and dynamic braking. There are no mechanical brakes or clutches to get out of adjustment! The drive motor is resilient cradle mounted and belt coupled to heavy flywheels. The special fabricated flat belts are "space tested" for long life and flutter-free motion. Capstan renewal can be made without the high cost of motor replacement. ■ **PUSHBUTTON SWITCHES** ■ All modes of operation are electrically established by pushbutton, leaf actuated, heavy contacts. Each set of contacts is independently screw mounted to permit simple replacement if damage should ever occur. A firm mechanical interlock prevents mal-operation and a "built in" safety electrical interlock prevents double or accidental recording. ■ **CAPACITY AND TIME** ■ Designed to handle up to 8 $\frac{1}{2}$ " diameter reels — 6900 feet of the triple play tape — the R70 Series will record continuously for two days at  $1\frac{1}{2}$  IPS or three hours at  $7\frac{1}{2}$  IPS. (Using our interlaced tracks, the tape may be "turned over" to double this time.) ■ **HEAD ASSEMBLY** ■ Laminated, micro-gap heads hyperbolically shaped to operate without pressure pads are used for separate record and playback. To prevent wear, the tape is lifted in winding modes. The heads are mounted on a precision plate to simplify replacement. Erase heads are optional. ■ **ELECTRICAL SAFETY** ■ All power cabling uses Underwriters Approved wire. The A.C. cable is 3 wire U.L. grounded pin. The only exposed connections are the audio input and output barrier strips. Separate enclosed fuse holders are used for the A.C. and D.C. circuit protection.



# TECHNICAL SPECIFICATIONS

**TAPE AND REEL SIZE:** 1/4" width, maximum 6900 feet on 8 3/4" reel; 7" reel—3600 feet. NOTE: 6750 feet of triple play tape is required for 24 hours at 15/16 IPS.

**TIME CAPACITY:** By turning the tape reels over at mid-point time, the 8 3/4" reel of "triple play" tape offers 4 days of 4 channel recording at 15/32 IPS. Using one track at a time, a single reel would offer 16 days of recording.

**HEADS:** Monaural or stereo and multi track in line.

**TAPE SPEED:** Any single speed 15/32 IPS to 7 1/2 IPS.

**MOTORS:** Three. Capacitor start and run. Fully insulated plug-in cable connectors.  
a) Two special direct drive torque motors.  
b) One drive motor (reversible).

**CAPSTAN DRIVE:** Two balanced flywheels, precision belt, double reduction. (Single reduction at 3 3/4" and 7 1/2").

**CAPSTAN SIZE:** All speeds, 0.250" diameter.

**NUMBER OF CHANNELS:** One, two or four (eight on special order).\*

**TRACK WIDTH:** Single channel using full track (0.250") or half track (0.080").  
Two channel (0.043") in line or two channel (0.80") in line.  
Four channel (0.037") in line.  
Eight channel (0.024") four track interlaced.

**MULTI-CHANNEL CROSSTALK REJECTION:** Better than 35 db @ 1000 cycles.

**FREQUENCY RESPONSE:** 15/32 IPS ± 3 db 250 to 2500 cycles.  
Better than 30 db S/N.  
15/16 IPS ± 2 db 250 to 3500 cycles.  
Better than 35 db S/N.  
1 7/8 IPS ± 2 db 250 to 5000 cycles.  
Better than 40 db S/N.  
3 3/4 IPS ± 2 db 50 to 8000 cycles.  
Better than 45 db S/N.  
7 1/2 IPS ± 2 db 50 to 12000 cycles.  
Better than 50 db S/N.

**DISTORTION:** Less than 5% total harmonic at 1 7/8 IPS and below.  
Less than 2% total harmonic at 3 3/4 IPS and above.

**ELECTRONICS:** All silicon transistor plug-in electronics. Integral electronic chassis up to four tracks—Model ARP76. External electronic chassis, single channel—Model ARP70. (Two ARP70's with interlocked bias for stereo).

**RECORD INDICATOR:** Front panel bias indicator lamp.

**FLUTTER AND WOW:** Less than 0.5% RMS @ 15/32 IPS with decreasing amounts at higher speeds.

**START TIME:** Less than 10 milliseconds at the lower speeds.

**BRAKING:** Electro-dynamic with differential switch braking control as a function of tape direction.

**STOP TIME:** Less than 50 milliseconds on lower speeds.

**FAST WIND TIME:** 3600 feet, less than 2 minutes.

**MODE CONTROL:** Five pushbuttons for FAST REWIND, STOP, FAST FORWARD, PLAY and RECORD. (RECORD electrically interlocked with PLAY). Motion Memory Sensor (MMS) permits instantaneous change from any mode to any other without tape damage.

**CHANNEL SELECTOR:** Selective monitor of any track in the multi-channel models.

**LIVE-TAPE MONITOR:** Front panel switch permits monitor of either input signal or reproduced signal on any selected channel.

**REFERENCE COUNTER:** Four digit, pushbutton reset.

**POWER REQUIREMENTS:** 117 volts A.C. Standby—115 watts; Playback—140 watts; Record—145 watts.

**DIMENSIONS:** Panel—8 3/4" x 19" x 1/4" (slotted for rack mounting). Distance in front of panel for head cover and reels—1 3/4". With ARP76 integral electronics, depth behind panel with all amplifiers inserted—11 1/2". Depth without amplifiers—8 1/2".

**WEIGHT:** Unmounted; 32 pounds net with all amplifiers for four channels. 28 1/4 pounds without amplifiers.

\*Two Model ARP76 electronic chassis are used for eight tracks.

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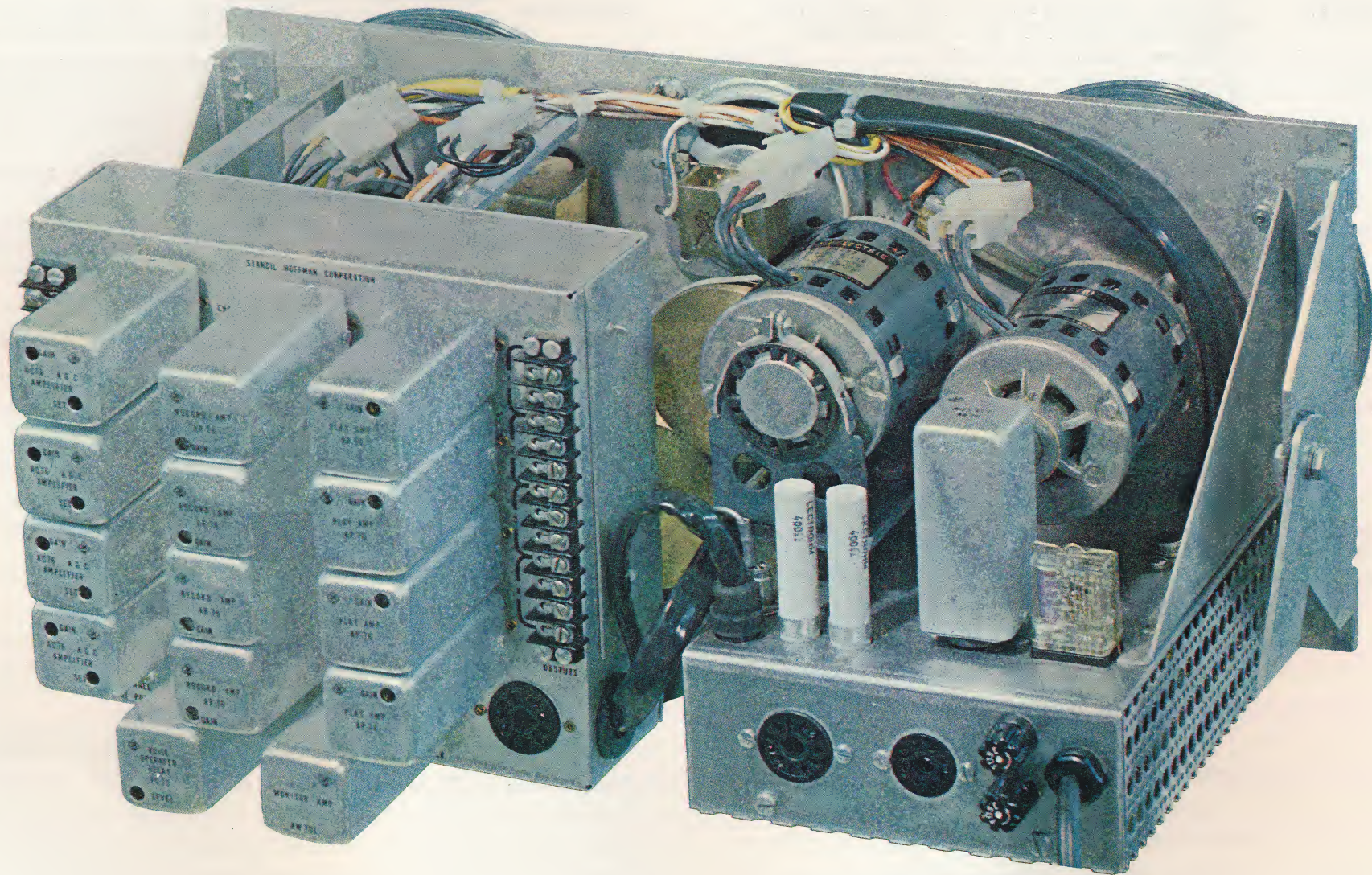
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Specifications subject to change without notice.



*REAR VIEW R70/APR76 ■ Four channels of record and playback with Automatic Gain Control on each channel. Also plug-in amplifiers include monitor and voice operated relay control.*



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**MAGNETIC RECORDERS AND REPRODUCERS  
MODELS R70/ARP76 & R70/APD76**

A compact 1/4 inch tape transport at any single speed from 7 1/2 IPS to 15 1/2 IPS with integral electronics, 8 3/4" high x 19" wide x 11 1/2" deep. Designed for the finest in stereo and multi tracks with the dependability required for airport and police recording including these many features: Pushbutton all-electrical control • Plug-in amplifiers and oscillator • Only one relay—plug-in • 24 hours continuous recording • MMS to prevent tape breakage • 4 digit reference counter with pushbutton reset • Safety handles thinnest tape • Simultaneous playback • 3 motor drive • Instant start on voice operated relay control • Dynamic differential braking • Exceeds all standards at any speed • Heads exposed for threading, editing and cueing • No pressure pads on record or playback heads • Tape lift in winding modes • Voltage regulated power supply • U.L. approved wire and connectors • Accessory plug-in amplifiers for microphone, automatic gain control, linear and bridging • Temperature stable all silicon amplifiers and rectifiers • Local, remote and automatic control • Uses standard tape • Adjustable bias • Handles 9 1/4" diameter reels • Rack mount, console or carrying case.

MODEL	HEAD TYPE	CATALOG NO.	PRICE
RECORD/REPRODUCE SINGLE CHANNEL R70/ARP76(1)	Full Track	13111 23111 33111 43111 53111	\$790.00
	Half Track	13112 23112 33112 43112 53112	\$775.00
RECORD/REPRODUCE TWO CHANNEL STEREO R70/ARP76(2)	Half Track Stereo	13122 23122 33122 43122 53122	\$870.00
	Quarter Track Stereo	13123 23123 33123 43123 53123	\$860.00
RECORD/REPRODUCE FOUR CHANNEL R70/ARP76(4)	Four Track In Line	13144 23144 33144 43144 53144	\$1215.00
RECORD/REPRODUCE FOUR CHANNEL R70/ARP76(4) Single Reproduce Amplifier Switchable to any Track	Four Track In Line	14144 24144 34144 44144 54144	\$1075.00



# MAGNETIC RECORDERS AND REPRODUCERS MODELS R70/ARP76 & R70/APD76

## CATALOG NUMBERING KEY:

First Digit—Speed

- 1 = 7 1/2 IPS
- 2 = 3 3/4 IPS
- 3 = 1 7/8 IPS
- 4 = 1 3/16 IPS
- 5 = 1 1/32 IPS

Second, Third and Fourth Digits

Type and Features

Fifth Digit—Heads

- 1 = Full Track
- 2 = Half Track
- 3 = Quarter Track
- 4 = Four Track In Line
- 5 = Four Track Interlace  
for Eight Total Tracks

Track Width

- 0.250"
- 0.080"
- 0.042"
- 0.037"
- 0.024"

## REPRODUCERS

MODEL	HEAD TYPE	CATALOG NO.	PRICE
<b>REPRODUCE ONLY SINGLE CHANNEL R70/APD76(1)</b>	Full Track	13411 23411 33411 43411 53411	\$692.50
	Half Track	13412 23412 33412 43412 53412	\$685.00
<b>REPRODUCE ONLY TWO CHANNEL STEREO R70/APD76(2)</b>	Half Track Stereo	13422 23422 33422 43422 53422	\$755.00
	Quarter Track Stereo	13423 23423 33423 43423 53423	\$750.00
<b>REPRODUCE ONLY FOUR CHANNEL R70/APD76(4)</b>	Four Track In Line	13444 23444 33444 43444 53444	\$915.00
<b>REPRODUCE ONLY FOUR CHANNEL R70/APD76(4) Single Reproduce Amplifier Switchable to any Track</b>	Four Track In Line	14444 24444 34444 44444 54444	\$790.00

Prices subject to change without notice

Available with 50 cycles on order. Add Suffix "A" following catalog number.

FOB Los Angeles, California

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OPTIONAL ACCESSORIES  
R70 Series

MODEL	DESCRIPTION	CATALOG NUMBER	PRICE
VI76	Illuminated V. U. Meter in "picture frame" with associated meter/monitor amplifier, AH76V, mounted in center of panel.	3920	49.50
FTE	Erase Head, full track, for single or multi track.	3922	17.50
TTE	Erase Head, half track, for half track mono or two track stereo.	3924	15.50
QTE	Erase Head, quarter track, stereo.	3826	15.50
AW76S	Monitor Speaker matched with monitor amplifier, AW70L, mounted in center of panel.	3928	45.00
AC76L	Automatic Gain Control amplifier, plug-in, 10,000 ohm bridging input. Holds constant recording level -20 to +15.	3930	52.50
AC76M	Automatic Gain Control amplifier, plug-in, 50/200 microphone. Holds constant recording level for conference or close talking.	3932	64.50
VO70	Voice operated relay amplifier, plug-in, bridges up to four inputs to immediately start recorder when signal appears on any input.	3934	37.50
CUT	Warning, end of tape, arm riding on tape reel furnishes contacts for remote indication.	3919	32.50
CU60	Cut off, photo optical, stops recorder when reel ends.	3936	12.50
CU59	Changeover, automatic, photo optical to transfer from one recorder to another at reel end.	3938	87.50
AL70T	Microphone preamplifier, preset gain, plug-in, 50/200 ohm input.	3940	51.50
AL76	High Gain preamplifier, preset gain, plug-in, 10,000 unbalanced input.	3942	37.50
SFT()	Alignment tape, 3" reel with high frequency for head alignment and 1 KC tone for level set. Designated (1) 7-1/2 IPS; (2) 3-3/4 IPS; (3) 1-7/8 IPS; (4) 15/16 IPS; (5) 15/32 IPS.	9950	6.50
RC-1	Rack Cabinet, 61-1/4" x 19" rack space. Overall dimensions 68-1/2" h x 22" w x 17-1/2" d.	7903	150.00
RC-2	Rack Cabinet, for desk top use. Overall dimensions: 9-1/2" h x 24" w x 15" d.	7904	62.50
TSSD	Tape Splicer, designed to splice multi track 1/4" tape.	9930	10.20
ST-500	Splicing Tape, 1/2" x 100". Extra rolls.	9931	.50
HD-6	Head Demagnetizer. A necessary tool for periodic maintenance, 117V 50/60 cycles.	6915	10.00
ME-99	Bulk Tape Eraser. Completely erases full reel of tape in one quick operation.	9915	34.00
TT-2430	TIMETAPE, Automatic Reproducing unit to furnish voice time announcements every 30 seconds 24 hours continuous. Attractive desk top cabinet. Output level +4 DBM, 600 ohms.		1250.00

NOTES:

- 1) Please order by Catalog Number and Description
- 2) All prices are F.O.B. Los Angeles, California, and are subject to change without notice.



## ACCESSORIES FOR AUTOMATIC OPERATION OF MODEL R70 RECORDER

In designing the Model R70 Series of recorders, almost every type of automatic control was considered. Internal wiring has been included to add certain accessory controls either by factory installation or subsequent field installation.

Below are listed 3 optional accessories and a brief description of their functions.

### MODEL CUT

As a means to anticipate the end of a reel of tape, the CUT attachment "feels" the diameter of the feed reel to signal at a predetermined time. Consisting of a arm lightly riding the tape on the feed reel, an adjustable eccentric member can be set to operate contacts when a certain minimum diameter of tape is remaining. The contact closure is brought out to terminals which in turn may be connected to energize indicator lamps, bells, or even effect transfer from one recorder to standby recorder.

### MODEL CU60

One of the important patented features of Stancil-Hoffman recorders is the sensing circuit to prevent tape breakage or damage to the tape through mal-operation of the mode control switches. The heart of the system is a transistor amplifier controlling the sense relay. The Model CU60 consists of a photocell placed on the back side of the tape in the head cover housing. Light from the pilot lamp is brought down to the tape path by means of conducting plastic rod. When the tape is properly threaded, the light path to the photo cell is obstructed, but should the tape break or reel end, light will strike the photocell and the resultant signal is amplified by the sense amplifier in turn operating the sense relay. This relay information may be used to stop the recorder or transfer to a standby unit. It also may be connected to aural warnings or energize indicator lamps.

### MODEL CU59

Both the Model CUT or CU60 can be used to transfer from one unit to a second unit at a predetermined time or in case of reel end. The Model CU60 is the necessary kit to effect the interchange circuitry for the transfer. The kit consists of a metal enclosure housing a relay and with two connecting cables and octal plugs which are inserted into the CU76 control unit of the two recorders. The CU76 on the R70 Series is wired for this automatic feature. Besides end of reel sensing or the anticipating sensing contacts to effect changeover, both bias failure or power supply DC failure may also be used to effect transfer to a standby recorder using the CU59 kit. While it is not listed as an accessory at this time, it is also possible to use a tape foil contact method of transfer from one machine to a second machine.

### TAPE & REELS

Recognizing the long time need for a compact recorder with maximum tape capacity, the Model R70 recorder has been designed to handle reels up to 9-1/4" diameter. The reeling motors were especially designed to handle the weight and size to solidly but gently wind the thinnest of tapes.

Using triple play tape (.0005" base), the reel holds 6900' offering 48 hours of continuous recording in one direction at 15/32 inches per second, or, 24 hours at 15/16 IPS.

	<u>1 - 49</u>	<u>50-99</u>	<u>100-249</u>	<u>250 &amp; Up</u>
Empty Reels	\$ 6.75	\$ 6.10	\$ 5.75	\$ 5.40
Reels & 6900' Splice Free, Triple Play, Lubricated Tape	22.50	20.25	19.15	18.00



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## QUESTIONS ASKED ABOUT R70

- 1) Q. Does the frequency response at the very low tape speed of 15/32 inches per second have the crispness and intelligence to identify voices and adequately furnish a reference or logging recording?  
A. Definitely yes! While the specification indicates a frequency response to 2500 cycles, the recorders check out to 3300 and down not more than 5 db at 3500 cycles. Reference recorded material has been rebroadcast by leading network stations as the speech quality was that good.
- 2) Q. At 15/32 inches per second, what size reel do I need for 24 hours of recording?  
A. Standard plastic 7" diameter reel holding 3600 feet of triple play tape.
- 3) Q. To get 24 hours, do I have to rewind or reverse the tape?  
A. No. This is 24 hours continuous recording in one direction.
- 4) Q. With the 24 hour capacity, how many different tracks may I record?  
A. Four in the standard R70. Eight on special order.
- 5) Q. Can I play back any and/or all of the four tracks while recording?  
A. Yes.
- 6) Q. If I only need one track of recording at this time, can I order the R70 designed for more tracks to add to the facility later?  
A. Yes. You may order the two or four track models and order only as many plug in amplifiers as initially needed. At any later date you may order additional plug in amplifiers to the full capacity.
- 7) Q. In the four track models, is it possible to record on track number one, on say, Monday. Track number 2 on Tuesday, three on Wednesday, and four on Thursday?  
A. Yes. In catalog numbers 15144 to 55144 (tape speeds of 7 1/2 IPS to 15/32 IPS) the front panel selector switch transfers a single set of electronics from track to track. These catalogue numbers are priced at \$995.00.
- 8) Q. What is the 7" diameter reel overhang beyond the 8 3/4" x 19" panel?  
A. 3/8" on each side and 1/2" above the panel.
- 9) Q. How about the 9 1/4" reel?  
A. The 9 1/4" reel extends 1 1/2" beyond each side and 1 5/8" above the top of the panel.
- 10) Q. Is there any warning system if the recorder fails?  
A. Accessories are available to sense bias, power supply and tape breakage or end of reel. Further, an accessory panel is available with a signal operated relay which monitors the playback from the play head and if there is no audio for a preselected period (it can be from a few seconds to a minute -- such as a silence period during a ball game broadcast) the relay will furnish contacts to energize lights or alarm. This system can effectively monitor "off the air" to indicate transmitter performance.



- 11) Q. If the response is so good at 15/32 IPS for logging recording, when would I need the 9-1/4" diameter reel?  
A. Many broadcast stations are ordering the R70 for 2 track stereo at 7-1/2 IPS and this reel size offers nearly the same capacity as the 10-1/2" NAB reel, or, 4500 cycle response is desired for 24 hour reference recording at 15/16 IPS.
- 12) Q. What is the start time when using the voice or signal operated relay?  
A. Less than 10 milliseconds -- fast enough to pick up any type of intelligence.
- 13) Q. If I order two R70's, can I change over from the active to the standby unit?  
A. Yes. The CUT accessory kit can be set to transfer at a chosen preset time -- 5 minutes, 10 minutes, or as desired before the end of the reel. Also, a time clock is available to transfer at a predetermined hour.
- 14) Q. What is anticipated maintenance?  
A. Mechanically, there are few running parts. The GE motors are life time lubricated, but GE advises us that three to six drops of oil per motor every six months could be added as insurance. Due to the very light loading, the drive belts should last for years and perhaps, yearly they should be inexpensively changed. Using any of the standard magnetic tapes, the head wear is negligible -- particularly, at 15/32 IPS, some users report over 3 years of head life so far. To decrease head wear, the tape is automatically lifted from the heads in the high speed winding modes. There are no clutches or any components that have to be adjusted due to wear.
- Electronically, there is little to be maintained. The silicon transistors apparently never deteriorate. The power supply is accurately regulated so there is no occasion of damaging current surges to break down components. If a channel is ever suspect, an inexpensive spare amplifier may be inserted in seconds.
- 15) Q. Are erase heads standard?  
A. No. To prevent possible alteration in reference or logging recordings, the erase head is left off. They are inexpensively available as an accessory.
- 16) Q. How can I find a particular time of day in a 24 hour recording?  
A. We have charts to interpolate from the 4 digit reference counter. We also have a voice time announcer, the TIMETAPE which issues voice announcements every 30 seconds and this may be recorded on an available track.
- 17) Q. Is the equipment American made?  
A. We are very pleased to have designed and built the entire R70 in Hollywood, California. All major components, -- motors, heads, transistors, solenoids, -- are American made by reputable companies.
- 18) Q. Is it possible to immediately review a message just recorded?  
A. Yes! The drive and reel motors are reversible and their connections are brought out in an octal socket. To remotely back space from a console requires a 3 pole double throw switch. Parts and schematics are available.
- 19) Q. If I use the thinnest tapes will the machine damage or stretch the tape?  
A. The Model R70 is designed for optimum performance using "triple play" tape. The "motion memory sensor" prevents tape breakage or stretch in fast switching from any mode.

Incidentally, order the tape under the nomenclature of "triple play" and not 1/2 mill base. A 7" reel will have 3600 feet of tape.

In changing from one make tape to another, you may re-adjust the bias for maximum response and dynamic range. The "triple play" tape will generally furnish 1 or 2db more level as well as 3 or more db response at the extreme high end.

## DESCRIPTION

The AL-70 microphone preamplifier is a compact, plug-in unit having extremely low noise and distortion. High gain, through a broad linear response, is obtained in a stable, three stage circuit employing superior silicon transistors. Hum and microphonics are completely absent. Careful design and choice of components assure maintenance-free operation. An integral control allows presetting the gain to match any microphone application. All circuits terminate in a standard octal plug.

When used with professional microphones, a separate input transformer is required.

The AL-70 microphone preamplifier uses a printed epoxy circuit board of the highest quality. Connections are hand soldered and tested for maximum reliability. Components are standard and easily accessible should service be necessary.

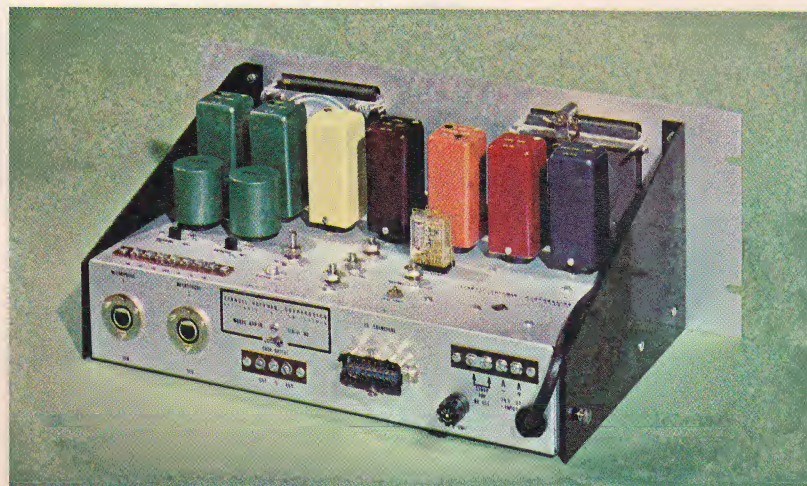
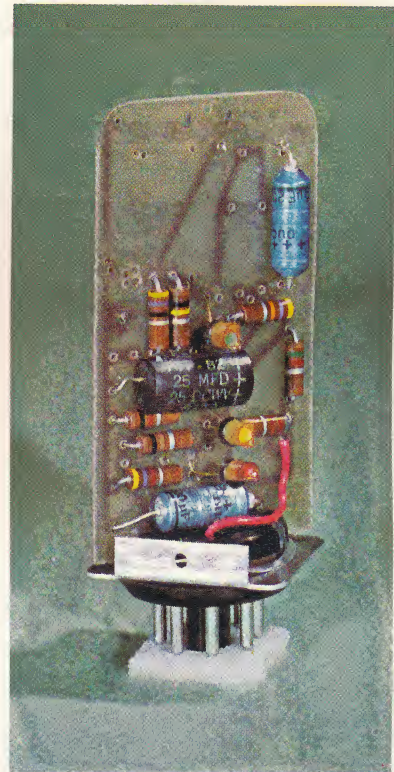
## APPLICATION

The outstanding performance, compact and rugged design, ease of installation and low power requirements of the AL-70 microphone preamplifier well suit it for installations involving:

- A. Custom studio consoles
- B. Compact portable mixers

## FEATURES

- Low noise silicon transistors (lower noise than most premium vacuum tubes)
- High temperature stability
- No microphonics
- Low distortion
- Plug-in versatility
- Small, lightweight
- Adjustable gain
- Shielded and protected, in color coded aluminum case
- Compatible with other 70 series amplifiers, for easy system assembly



An illustration in the use of the model 70 series module is the new Stancil-Hoffman ARP-70 mixer-record-playback unit. From left to right are two AL-70 microphone preamplifiers, the AP-70 preamplifier, the AH-70H line amplifier, AR-70 record amplifier, AO-70 bias oscillator and the AW-70L monitor amplifier which feeds a built-in speaker.

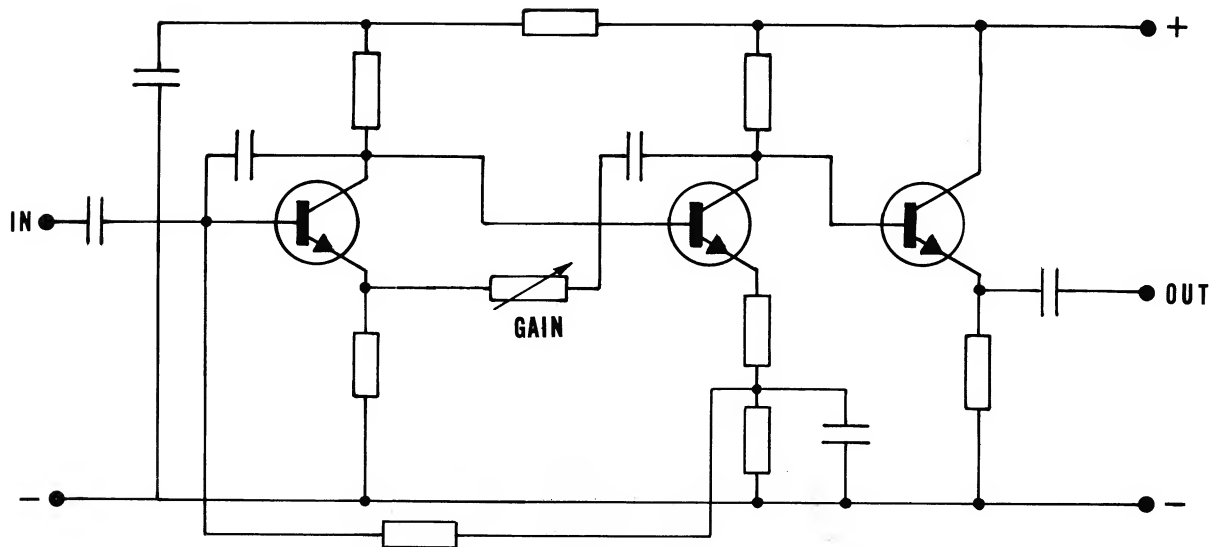


# AL-70 MICROPHONE PREAMPLIFIER

## SPECIFICATIONS

<b>Input impedance:</b>	50,000 ohms. 50/200 ohms with accessory transformer.
<b>Input level:</b>	Accepts standard professional microphones.
<b>Output impedance:</b>	5,000 ohms.
<b>Output level:</b>	-10 dbm.
<b>Distortion:</b>	Less than 0.5% THD.
<b>Gain:</b>	62 db, plus gain of input transformer.
<b>Noise:</b>	-128 dbm, equivalent input.
<b>Frequency response:</b>	$\pm 1$ db, 50 cycles to 15 kc with transformer.
<b>Power required:</b>	20 volts d.c. 3 ma.
<b>Adjustments:</b>	Gain, 36 to 62 db.
<b>Temperature range:</b>	Storage and operating, 0°F to 170°F.
<b>Dimensions:</b>	1 $\frac{1}{16}$ " x 1 $\frac{1}{16}$ " x 3 $\frac{1}{4}$ " plus base $\frac{5}{8}$ ".
<b>Weight:</b>	2 oz.
<b>Case:</b>	Drawn aluminum, light green color.
<b>Mounting:</b>	Octal base to engage standard octal socket.

**Accessories:** Plug-in input transformer, 50/200 ohms primary, 50,000 ohm secondary. 90 db. shielding. Regulated power supply.



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## DESCRIPTION

A solid state, plug-in module, the AH-70H line amplifier will deliver +20 dbm, across 600 ohms, with negligible distortion. The use of silicon transistors and the careful selection of other components, make this a reliable, stable circuit, capable of maintaining its high gain and low noise characteristics through a long maintenance-free life. Class B output assures efficient, cool operation and low power requirements; only 20 volts d.c. at 50 milliamps, full signal load. All circuit connections terminate in a standard octal plug.

## APPLICATION

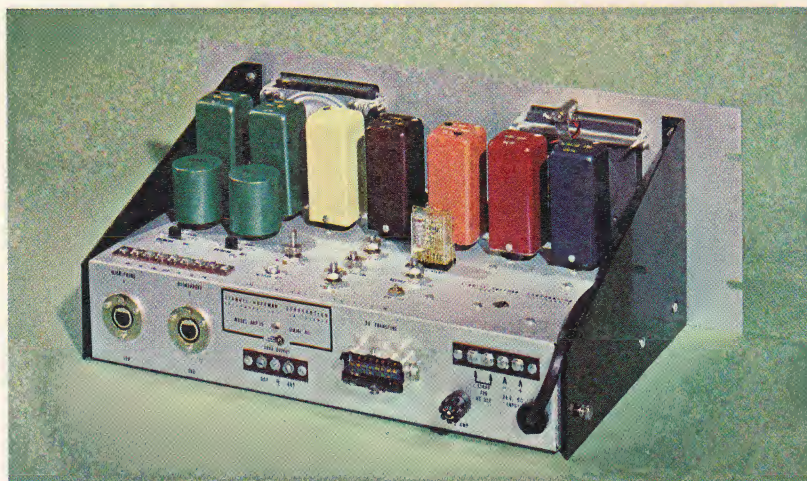
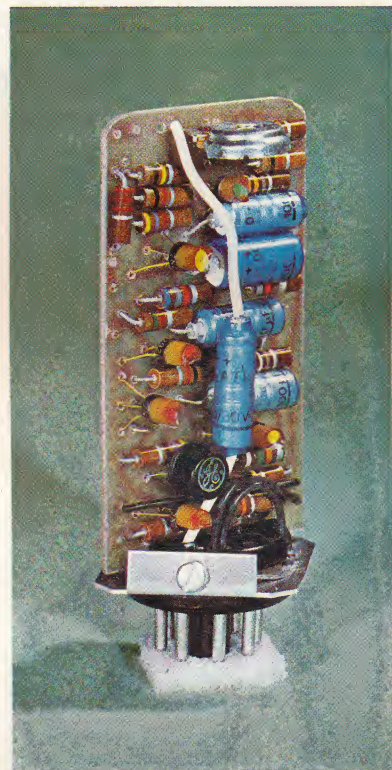
The compact AH-70H line amplifier will fulfill many radio-television broadcast, motion picture and other commercial audio requirements. Because of the low current drain, the AH-70H lends itself to battery operation too.

- A. Custom consoles
- B. Custom recording decks
- C. Remote amplifier
- D. Adding channels to existing equipment
- E. Audio distribution systems
- F. Overcoming loss of passive equipment
- G. Booster amp for long line applications
- H. Volume indicator amplifier

## FEATURES

- 45 db of gain, adjustable
- +20 dbm output
- Better than 65 db, signal-to-noise
- Push-pull emitter-follower
- Class B, low power drain
- Solid state circuitry, silicon transistors
- Low distortion
- Temperature compensated
- Small, compact, lightweight
- Plug-in versatility
- Shielded and protected, in color coded aluminum case.
- Compatible with all other 70 series amplifiers, for easy system assembly

The AH-70H line amplifier uses a printed epoxy circuit board of the highest quality. Connections are hand soldered and tested for maximum reliability. Components are standard and easily accessible should service be necessary.



An illustration in the use of the model 70 series module is the new Stancil-Hoffman ARP-70 mixer-record-playback unit. From left to right are two AL-70 microphone preamplifiers, the AP-70 preamplifier, the AH-70H line amplifier, AR-70 record amplifier, AO-70 bias oscillator and the AW-70L monitor amplifier which feeds a built-in speaker.

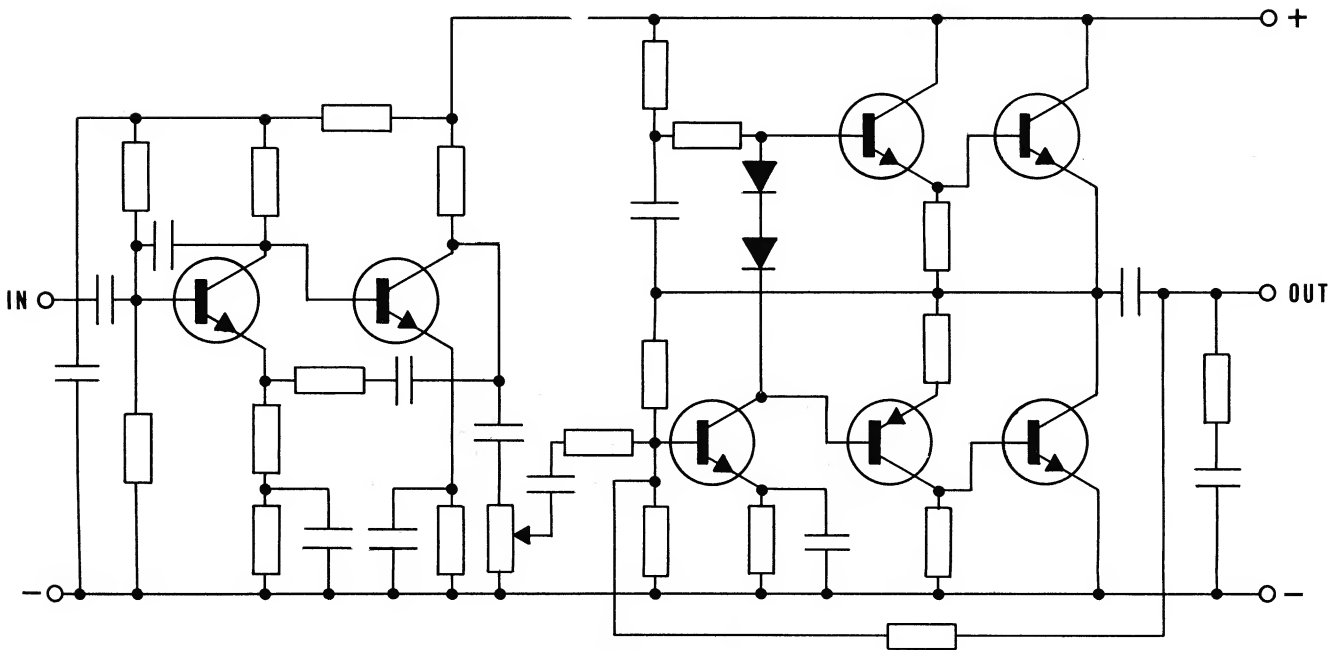


# AH-70 LINE AMPLIFIER

## SPECIFICATIONS

<b>Input impedance:</b>	10,000 ohms unbalanced.
<b>Output impedance:</b>	0.5 ohm, emitter-follower, 600 ohm transformer.
<b>Output level:</b>	+20 dbm.
<b>Distortion:</b>	Less than 0.5% THD.
<b>Gain:</b>	45 db.
<b>Noise:</b>	Better than 65 db. signal-to-noise.
<b>Frequency response:</b>	$\pm 1$ db. 40 cycles to 20 kc. with transformer. 5 cycles to 50 kc without transformer.
<b>Temperature range:</b>	Storage and operating, 0°F to 170°F.
<b>Power required:</b>	20 volts d.c. at 50 ma, full load.
<b>Dimensions:</b>	1 $\frac{1}{8}$ " x 1 $\frac{1}{8}$ " x 3 $\frac{1}{4}$ " plus base $\frac{5}{8}$ ".
<b>Weight:</b>	2 $\frac{1}{2}$ oz.
<b>Case:</b>	Drawn aluminum, blue color.
<b>Mounting:</b>	Octal base to engage standard octal socket.

<b>Accessories:</b>	Input transformer, bridging, 10,000 ohm. Plug-in output transformer, primary impedance 20 ohms, output impedance, 150/600 ohms. Regulated power supply. Volume indicator. Motor rel.
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## DESCRIPTION

This small, solid state monitor amplifier delivers 750 milliwatts, at less than 0.5% distortion, directly into a speaker voice coil. Efficient operation is assured by the use of a push-pull class B output stage, reducing the no-signal current drain to a minimum. Designed for close listening, monitoring applications, this amplifier utilizes plug-in construction for ease in mounting. All circuits terminate in a standard octal plug.

The AW-70L monitor amplifier uses a printed epoxy circuit board of the highest quality. Connections are hand soldered and tested for maximum reliability. Components are standard and easily accessible should service be necessary.

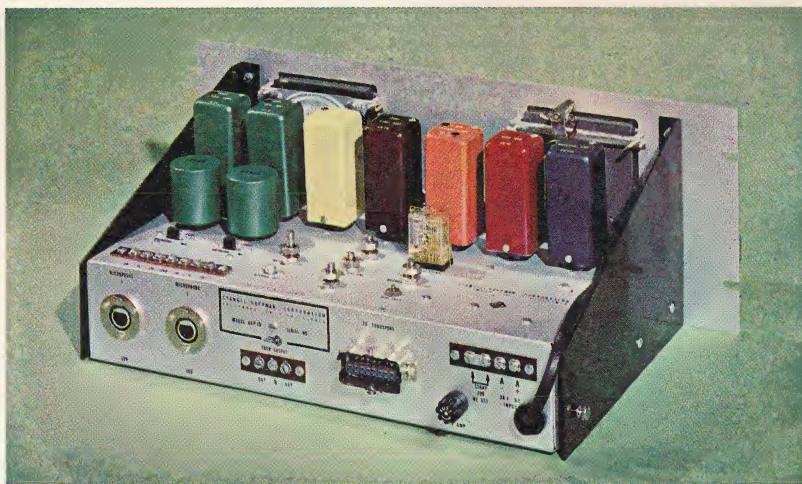
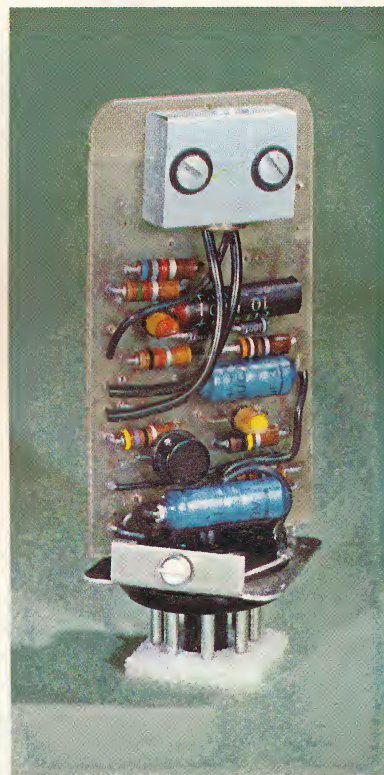
## APPLICATION

Space saving and lightweight design, as well as low power requirements, make this monitor amplifier the natural choice for:

- A. Small battery operated, portable amplifier-speaker
- B. Adding speaker output to present equipment
- C. Cue amplifier in console installations
- D. Paging and music distribution systems

## FEATURES

- Low current drain
- Very low distortion
- Direct coupled to voice coil
- Rugged and reliable
- Flat response,  $\pm 1$  db, 40 cycles to 30 kc.
- No hum
- Signal-to-noise better than 65 db
- Small, lightweight
- Plug-in versatility
- Shielded and protected, in color coded aluminum case
- Compatible with other 70 series amplifiers, for easy system assembly



An illustration in the use of the model 70 series module is the new Stancil-Hoffman ARP-70 mixer-record-playback unit. From left to right are two AL-70 microphone preamplifiers, the AP-70 preamplifier, the AH-70H line amplifier, AR-70 record amplifier, AO-70 bias oscillator and the AW-70L monitor amplifier which feeds a built-in speaker.





## DESCRIPTION

The compact AR-70 record amplifier provides a wide range of equalization while driving a magnetic recording head. With low frequency adjustment from 0 db to +15 db at 40 cycles and high frequency adjustment from 0 db to +25 db at any frequency above 3 kc, all standard recording curves can be matched. The output of this plug-in amplifier works into all head impedances and the power requirement of the solid state circuitry is minimal; 20 volts d.c. at 8 ma. The unit is engineered for maintenance free operation under adverse environmental conditions. All circuits terminate in a standard octal plug.

The AR-70 record amplifier uses a printed epoxy circuit board of the highest quality. Connections are hand soldered and tested for maximum reliability. Components are standard and easily accessible should service be necessary.

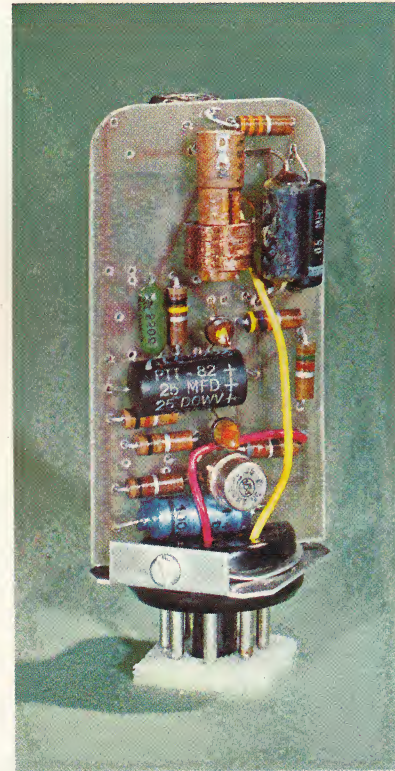
## APPLICATION

Used individually or in multi-track installations, the AR-70 proves to be a most versatile recording amplifier. With its low power requirements and its rugged plug-in construction, it will simplify installation and maintenance in new or existing equipment.

- A. Custom construction of low distortion recorders
- B. Converting existing equipment for stereo
- C. Construction of multi-channel recorders
- D. Converting and upgrading older vacuum tube amplifiers

## FEATURES

- Low noise silicon transistors
- High temperature stability
- Reserve power, low distortion
- No microphonics
- Low and high frequency equalization to meet any standard curve
- Plug-in versatility
- Small, lightweight
- Shielded and protected, in color coded aluminum case
- Compatible with all other 70 series amplifiers, for easy system assembly



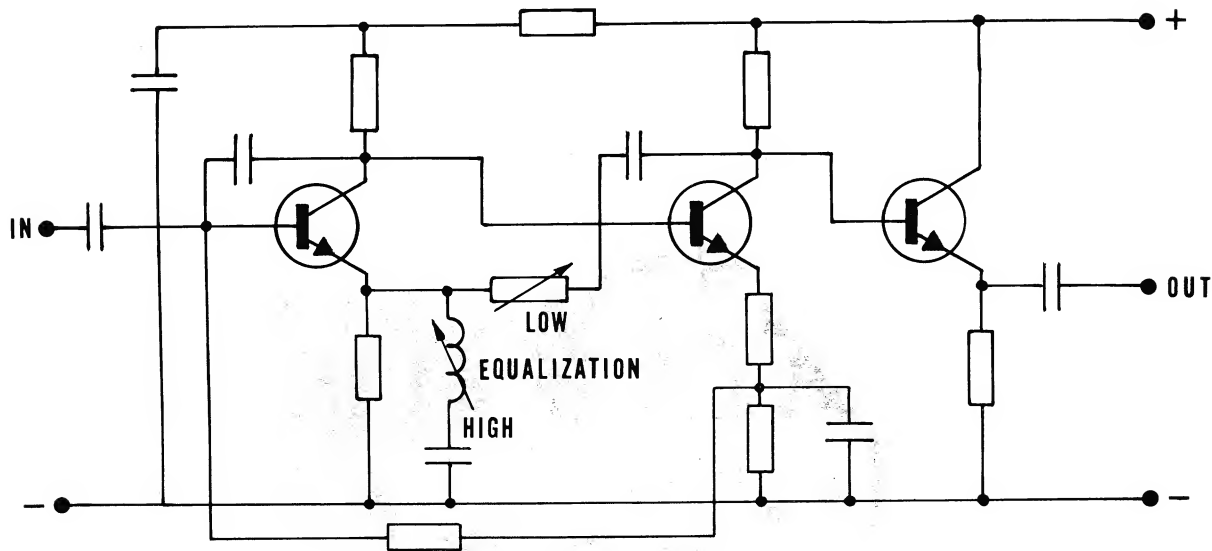
An illustration in the use of the model 70 series module is the new Stancil-Hoffman ARP-70 mixer-record-playback unit. From left to right are two AL-70 microphone preamplifiers, the AP-70 preamplifier, the AH-70H line amplifier, AR-70 record amplifier, AO-70 bias oscillator and the AW-70L monitor amplifier which feeds a built-in speaker.



# AR-70 RECORD AMPLIFIER

## SPECIFICATIONS

<b>Input impedance:</b>	50,000 ohms.
<b>Input level:</b>	—25 dbm for normal recording.
<b>Output impedance:</b>	5,000 ohms, emitter-follower.
<b>Record head requirements:</b>	Ideal head impedance 50-60 mh but will operate heads from 5mh to 200 mh.
<b>Distortion:</b>	Less than 0.5% THD at normal level.
<b>Noise:</b>	—65 dbm.
<b>Frequency response:</b>	Adjustable equalization to match any U.S. or International standard.
<b>Adjustments:</b>	Low frequency equalization, R/C network 0 to +15 db at 40 cycles. High frequency equalization, L/C network 0 to +25 db at any frequency above 3,000 cycles.
<b>Power required:</b>	20 v.d.c. at 8 ma.
<b>Temperature range:</b>	Storage and operating 0°F to 170°F.
<b>Dimensions:</b>	1 $\frac{1}{8}$ " x 1 $\frac{1}{8}$ " x 3 $\frac{1}{4}$ " plus base $\frac{5}{8}$ ".
<b>Weight:</b>	2 oz.
<b>Case material:</b>	Drawn aluminum, orange color.
<b>Mounting:</b>	Octal base to engage standard octal socket.
<b>Accessories:</b>	Regulated power supply. Bias trap for 80 kc. Magnetic heads.
<b>Note:</b>	Specify film or tape speed when ordering.



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## DESCRIPTION

Designed for amplifying the output of magnetic tape heads, the AP-70 playback preamplifier provides equalization adjustment to meet all U.S. and International standards. An exceptional signal-to-noise ratio and low total harmonic distortion content are accomplished through careful design, incorporating the latest silicon transistors of the NPN type. High in gain but non-microphonic, rugged and maintenance free, this plug-in unit requires only 20 volts d.c. at 3 ma. All connections terminate in a standard octal plug.

The AP-70 playback preamplifier uses a printed epoxy circuit board of the highest quality. Connections are hand soldered and tested for maximum reliability. Components are standard and easily accessible should service be necessary.

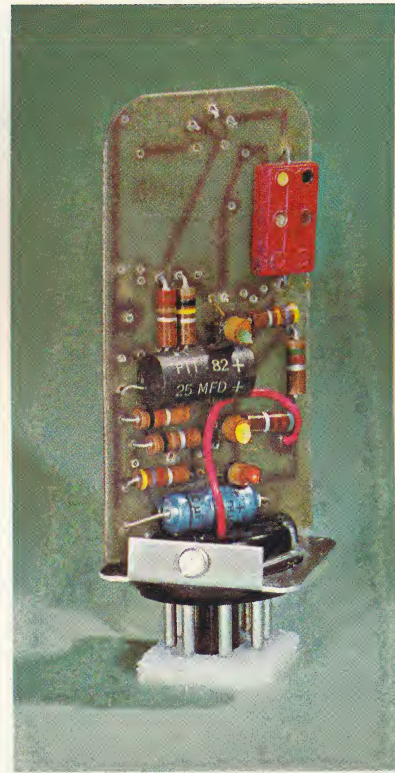
## APPLICATION

The AP-70 is the answer to preamp problems when expanding into multiple channel playback. Small, versatile and easily incorporated into existing equipment as well as construction of custom magnetic playback equipment.

- A. Adding stereo to present magnetic transports
- B. Building custom multichannel tape equipment
- C. Upgrading existing equipment

## FEATURES

- Low noise silicon transistors
- No microphonics
- Low distortion
- High gain
- Adjustable equalization
- High temperature stability
- Small, lightweight
- Plug-in versatility
- Shielded and protected, in color coded aluminum case
- Compatible with all other 70 series amplifiers, for easy system assembly



An illustration in the use of the model 70 series module is the new Stancil-Hoffman ARP-70 mixer-record-playback unit. From left to right are two AL-70 microphone preamplifiers, the AP-70 preamplifier, the AH-70H line amplifier, AR-70 record amplifier, AO-70 bias oscillator and the AW-70L monitor amplifier which feeds a built-in speaker.





## DESCRIPTION

The AO-70 bias oscillator delivers a low distortion sine wave for bias and erase functions in magnetic recording equipment. The push-pull silicon transistor circuit furnishes enough current to easily drive four 50 mh record heads and an erase head. Several AO-70s may be interlocked for operation of more than four channels. Compact and cool in operation, the power requirements are only 20 volts d.c. at 200ma. All circuits terminate in a standard octal plug.

The AO-70 bias oscillator uses a printed epoxy circuit board of the highest quality. Connections are hand soldered and tested for maximum reliability. Components are standard and easily accessible should service be necessary.

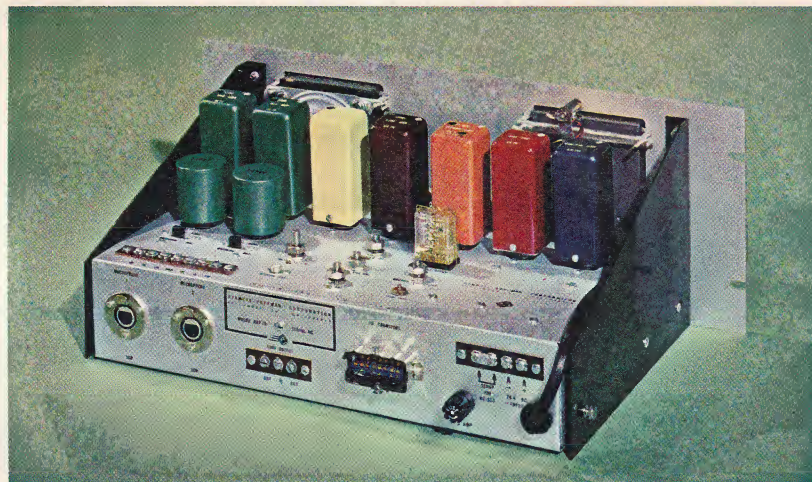
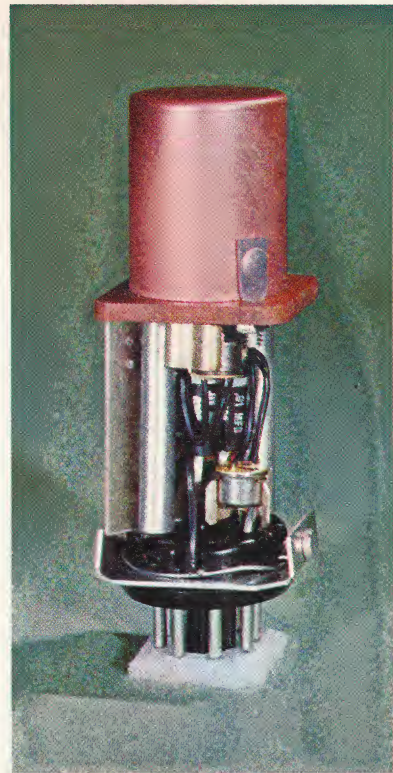
## APPLICATION

Easily installed, the stable AO-70 bias oscillator is conveniently worked into plans calling for single or multiple bias requirements.

- A. Building custom low distortion recorders
- B. Converting to multichannel operation on existing recorders
- C. Adding erase functions to existing equipment
- D. Upgrading existing bias and erase equipment

## FEATURES

- Adjustable output
- Low sine wave distortion
- High output power
- High output frequency, 80 kc
- Flexible in application
- Economical transistor operation
- Uses silicon transistors for temperature stability
- Plug-in versatility
- Small, compact, lightweight
- Shielded and protected, in aluminum color coded case
- Compatible with other 70 series modules



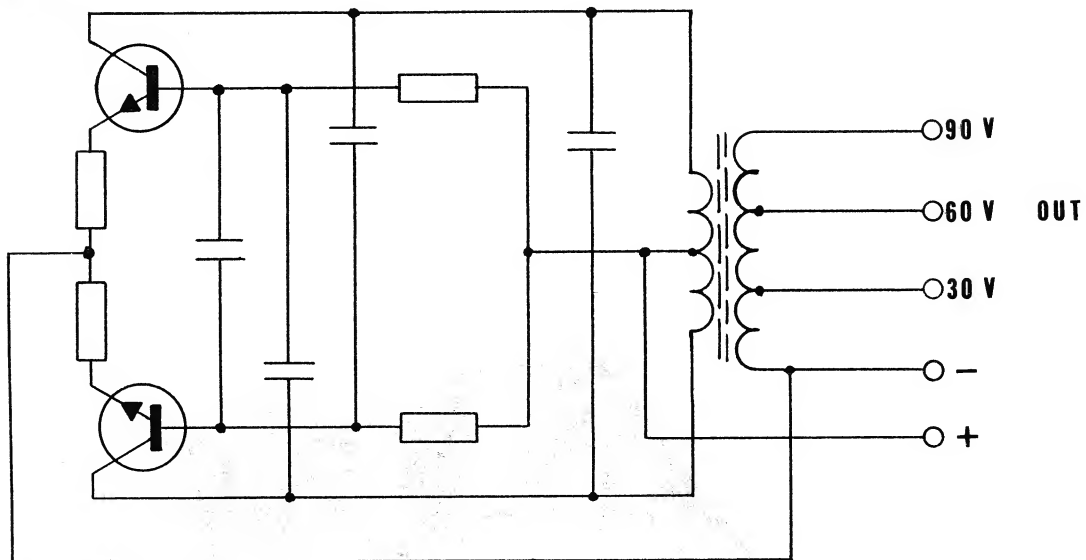
An illustration in the use of the model 70 series module is the new Stancil-Hoffman ARP-70 mixer-record-playback unit. From left to right are two AL-70 microphone preamplifiers, the AP-70 preamplifier, the AH-70H line amplifier, AR-70 record amplifier, AO-70 bias oscillator and the AW-70L monitor amplifier which feeds a built-in speaker.



# AO-70 BIAS OSCILLATOR

## SPECIFICATIONS

<b>Output voltage:</b>	30v, 60v, 90v taps. 45 ma maximum.
<b>Output:</b>	Push-pull, transformer. Will drive four-channel record head plus erase head.
<b>Frequency:</b>	80 kc. Provision to interlock several AO-70s to prevent beating.
<b>Record head requirements:</b>	Ideal inductance 50 to 60 mh but will operate heads from 5 to 200 mh.
<b>Erase head requirement:</b>	Nominal 2.5 mh.
<b>Power required:</b>	20 volts d.c. at 200 ma.
<b>Temperature range:</b>	Storage and operating, 0°F to 170°F.
<b>Dimensions:</b>	1 7/16" x 1 7/16" x 3 1/4" plus base 5/8".
<b>Weight:</b>	4 oz.
<b>Case:</b>	Drawn aluminum, red color.
<b>Mounting:</b>	Octal base to engage standard octal socket.
<b>Adjustments:</b>	None. External bias adjustment required for each recording channel.
<b>Accessories:</b>	Regulated power supply. Magnetic heads.



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# THE STANCIL-HOFFMAN CORPORATION

## SHORT FORM CATALOG

### PLUG-IN AMPLIFIERS FOR PROFESSIONAL SOUND APPLICATIONS

The following plug-in modules are designed for most applications of amplifiers used in audio transmission, recording and reproduction. With the exception of the 25 watt power amplifier, all are housed in drawn aluminum enclosures, 1-7/16" x 1-7/16" x 3-1/4", incorporating an octal plug which is used for both mechanical mounting and all necessary connections.

The Stancil-Hoffman Corporation was one of the first companies in the country to design and manufacture magnetic recording and reproducing equipment along with being the first company to commercially produce transistorized recording systems. Faced with immediate demands to automate many broadcast stations and recording systems, the Corporation felt that offering the benefit of its complete line of amplifiers would greatly accelerate this program. Each module is generally complete within itself and requires only the minimum of installation. Octal sockets can be mounted in a chassis with the input and output connections and the negative and positive power leads requiring the minimum design and fabrication time. More important, the end results far surpass performance heretofore available from vacuum tubes and transistors. The absence of microphonics, noise and hum, coupled with the extreme dependability of semi-conductors, creates a superior and maintenance-free sound system. Using the Stancil-Hoffman regulated power supply insures infinite life of the amplifiers without any known deterioration of performance.

No "tricky" circuitry is employed and all modules are stable under extreme environmental and shock conditions. All amplifiers use silicon transistors with fibre glass circuit boards. The components used in the amplifiers are of readily available standard types and are so arranged for easy inspection and probing.

The linear amplifiers include an internal gain control available through an opening in the top to preset the amplifier range of operation. The wide range amplifiers used for recording and reproduction contain R/C equalization networks and high end adjustments to match all standards. In the communication amplifiers, the equalization is preset and the gain control is available for external setting.

Each amplifier is individually packaged along with a circuit diagram, operation theory, applications information and mounting hardware. The Models AL70, AH70, AP70, AR70 and AW70L are described in detail with circuits on individual catalog sheets.

Feel free to write for typical system circuitry for mixers, recording and reproducing layouts, and while it is difficult to predict the end performance of the amplifiers in composite equipment and other systems, the Stancil-Hoffman Corporation guarantees the performance of the amplifiers within themselves. If, within one year from the date of the original purchase, any amplifier develops noise or appears to malfunction, and if it has not been physically damaged or subjected to over 28 volts D.C., the amplifier may be returned postage paid to the Stancil-Hoffman Corporation, and for a service charge of \$10.00, the amplifier will be repaired or replaced and returned postage paid within the United States. Power supplies and the 25 watt amplifier are covered under a \$17.50 service charge.

In addition to power supplies, switching and control units, the listing includes two types of amplifiers:

A70 Series for wide range audio, recording and reproduction.

A76 Series for communication networks and narrower bandwidths generally used in slow speed recorders.

The A70 Series are in color coded housings. The A76 are in satin finished aluminum.



LINEAR, WIDE RANGE AMPLIFIERS

AL70	A very low noise microphonic-free and flat response 60 DB gain microphone preamplifier with preset control for close talking or distant pickup.	\$ 32.75
AL70T	Identical to the AL70 but compacted as a space saver to include in a 50 ohm microphone input transformer mounted internally on one side of the printed circuit card.	\$ 51.50
AH70H	A compact booster or line amplifier offering flat response, distortion-free output to feed transmission lines and drive volume indicators, 10,000 ohms input, 45 DB gain, low impedance output, requiring matching transformer, TF12910, to feed 600 ohm line.	\$ 39.75
AH70L	Identical performance to AH70H, but with 10 DB gain. Input impedance - 3,000 ohms.	\$ 37.50
AW70L	An ideal low power amplifier to directly drive a monitor speaker voice coil and "ear wig" headphones. Transformerless output at very low impedance for 8 ohm and 16 ohm speakers.	\$ 39.50
AW70H	<p>A high power amplifier of transformerless design offering up to 25 watts RMS output at less than 1% total harmonic distortion into a 16 ohm load. Being completely direct coupled, an amazing clarity of sound is produced from practically D. C. to 100,000 cycles without phase distortion or "ringing" often introduced by the most expensive output transformers. Hard to describe, the resultant sound is free from the usual "synthetic" reproduction characteristics.</p> <p>The amplifier has been subjected to exhaustive tests for over two years, and the all silicon transistors are conservatively rated for over 100 watts!</p> <p>The circuit is stabilized by A. C. and D. C. feedback with non linear bias resistance in the emitter follower output.</p> <p>The amplifier is constructed by mounting two circuit boards on opposite sides of large area output transistor "heat sinks". The overall dimensions are only 4" x 4" x 3" using an octal plug for mounting and electrical connections. Input is by a phono plug.</p> <p>To meet the many applications for this long awaited amplifier, four versions are available. All have the same output of 16 ohms with different inputs and gain. Requires a solid 85 volts D. C., 1 ampere power supply (Model AP72). Any model may be preceded by a 10,000 ohm bridging transformer for balanced or ungrounded input (Model TF12910).</p> <p>Basic amplifier, 3,000 ohms unbalanced input, approximately 15 DB gain requiring +10 DBM signal for full output (+4 provides a nominal 8 watts).</p>	\$ 69.50
AW70/AH	Unbalanced 100K input impedance using an incorporated AH70 booster amplifier with an emitter follower input stage for high impedance over 60 DB gain. Includes preset level control. Requires P7222 power supply (85 volts D. C. at 1 ampere and 22 volts at 50 milliamperes)	\$ 92.50

AW70/AE Unbalanced input 100,000 ohms, over 60 DB gain including HIGH and LOW equalization continuously variable by two controls to raise 25 cycles and 25,000 cycles by 10 DB. The equalization is desired to restore the full brilliance and low end response lost by the ear at lower levels. The curves are pivoted at 800 cycles with no interaction or apparent level change with full excursion of the controls. A switch is included to set the AW70/AE for "EQ" or "FLAT" response. Will attain full output from -30 DBM input in "FLAT" setting or -14 in "EQ" position. Two preset controls for gain and for balance between the "EQ" and "FLAT" modes. \$ 99.50

AW70/AC A special power amplifier kit for public address systems requiring automatic gain control. Kit consists of AW70/AH basic power amplifier, AC76 automatic gain control preamplifier, and an audience "sensing" microphone. The microphone is placed in a remote part of the auditorium to "meter" the sound level. This information, along with the normal input to the power amplifier will raise or lower the loudspeaker gain within predetermined levels below the acoustic feedback or howl. Automatically compensates for auditorium load.  
(Price on Application)

EQUALIZED, WIDE RANGE AMPLIFIERS

AP70 High gain, 55 DB, low noise, low distortion tape playback amplifier capable of equalizing any head for any reproduce curve. \$ 34.75

AR70 Versatile low distortion tape recording amplifier with built-in adjustments to match any equalization curve. \$ 34.75

AD70 Disc preamplifier. Similar construction to the AP70, but incorporating equalization network for RIAA standard curve. Equalization adjustable through opening in the top. \$ 32.75

COMMUNICATION, LINEAR AMPLIFIERS

AL76 A linear or microphone preamplifier, similar to the AL70 with a lower impedance output and using a 2-stage preamplifier, having up to 80 DB gain with sufficient power to furnish +4 DBM at 600 ohms without a transformer. Frequency response 150 cycles to 10,000 cycles. Signal to noise ratio 50 DB at less than 1.5% T.H.D. full output. 15,000 ohms unbalanced input. \$ 37.50

COMMUNICATION, EQUALIZED AMPLIFIERS

AP76 A tape playback preamplifier with both preset low and high end equalization generally designed for low speed tape systems wherein the recorded material has little pre-emphasis and most equalization occurs in playback. Approximately 5 DB boost is used at the low end and up to 20 DB at the highest desired reproduced frequency. For 15/16 IPS, as an example, there is 5 DB at 200 cycles and 18 DB at 4500 cycles. Input impedance - 15,000 ohms. Output - 600 ohms at +4 DBM. Distortion less than 1.5% T.H.D. \$ 39.50

AR76 Similar to AR70 recording amplifier but including high frequency peaking circuit for lower speed recording. As an example, 3 DB at 200 cycles and 7 DB at 4500 cycles for 15/16 IPS. \$ 34.75



COMMUNICATION, COMPRESSION AMPLIFIERS

AC76 An automatic gain control amplifier to hold the level of lines constant over wide input levels. Offering up to 60 DB gain, the built-in 10,000 ohm bridging transformer is followed by a built-in gain control to establish the level or output desired. The AGC action is accomplished by sensing the output, rectifying to DC and controlling the input level. A built-in control "SETS" the output to the desired level which it holds  $\pm 2.5$  DB for  $\pm 20$  DB level change.

Output level up to +4 DB at 600 ohms unbalanced (without transformer) at less than 1.5% T.H.D. Distortion increases to 4% with signal increase of 40 DB which would be beyond its normal requirements. Extremely fast attack time (2 milliseconds) with no blocking or thumping. Release time can be externally set at socket connector by a fixed resistor or pot to from a fraction of a second to several minutes. Nominally set to 1.5 seconds. Requires 30 milliamperes at 20 volts.

\$ 52.50

SWITCHING OR VOICE OPERATED RELAY AMPLIFIER

ESA70 An electronic switch to energize a pilot lamp when a signal between 100 cycles and 60,000 cycles appears at its input. Using a 28 volt lamp, #1819, the maximum sensitivity of the amplifier will light the lamp from -22 DBM. Built-in gain control to operate from higher levels. Maximum drain at 25 volts D.C. 0.050 amperes.

\$ 34.50

ESA70R Similar to lamp control but designed with heavier output transistor to close a relay with signal. Maximum sensitivity of amplifier closes relay at -25 DBM input from 600 ohm line. Relay coil may be 300 ohms to 700 ohms. Current drain approximately 75 milliamperes with lower resistant coil using 25 volts.

\$ 35.50

OSCILLATORS

AO70 A push-pull oscillator with ample power for "birdie free" wide range erasing and recording for single track or stereo.

\$ 39.50

AT70 A 1 KC audio tone oscillator to furnish a signal used to calibrate or establish levels in mixers, consoles or recording systems.

\$ 31.50

AT73 A 3 tone audio oscillator furnishing 60~, 600~ and 6000~ for a short frequency run in mixers, consoles or recording systems.

\$ 49.50

AT70M Same as AT70 but including a microphone pre-amplifier for voice announcements in mixers, consoles or recording systems.

~~\$ 49.50~~  
\$ 37.50

POWER SUPPLIES

P70 A complete, fused, hum free, regulated D.C. supply to power a group of A70 Series of amplifiers. Input 115/230 volts, 50/60 cycles, single phase to a nominal 20 volts output at 400 mils. Housed in a welded steel enclosure, 3-1/2" x 3-1/2" x 4-1/2", with removeable base, the P70 uses a 9 pin "octal type" plug with its mating panel mounting socket furnished.

Silicon diodes offer full wave rectification to provide approximately 28 volts of regulated D.C. to power relays and the AW70L monitor amplifier. A 22 volt zener then follows through a transistor filter circuit to provide the regulated output with less than 200 microvolts hum.

\$ 78.50

P72 A power supply to handle two AW70H 25 watt amplifiers for stereo. Output approximately 85 volts at 2.0 amperes. Housed in welded steel case with removeable base, the P72 is furnished with its mating 9 pin panel mounting socket. Input 115/230 volts, 50/60 cycles. Size - 5" x 5" x 5-7/8". \$ 65.00

P7222 The 85 volt section is the same as P72 which is then followed by a second section including a zener regulated transistor filter. Nominal 20 volts output at 50 milliamperes is available to handle a number of AP70, AD70 or AL70 preamplifiers in stereo, which in turn drive the power amplifiers. \$ 81.50

#### TRANSFORMERS

TF12828 Quadruple shielded input transformer to match 50/200 ohm microphones to the 50K input of the AL70 preamplifiers. Octal plug connection. \$ 22.50

TF12910 An inexpensive octal plug-in miniature transformer to provide a 10K bridging input for the AR70, AH70 and AW70 amplifiers. \$ 17.50

TF12119 The same transformer, open frame unshielded, mounted on phenolic board with tie points for connections. Usually suspended beneath a chassis by two 6/32 screws and spacers furnished. \$ 14.50

TF12880 Torroidly wound on a special core, this transformer ideally matches the output of the AH70 line amplifier to feed a 600/150 ohm line. Encased with octal plug. \$ 22.50

TF12997 Same transformer, unshielded, sandwiched between two phenolic boards with connecting tie points, usually suspended beneath chassis by 6/32 screws furnished. \$ 18.50

#### ACCESSORIES

##### Gain Control Potentiometers

502K A special composition potentiometer manufactured for Stancil-Hoffman by Allen-Bradley. Designed to work with the AL70 and mixing buses in conjunction with the A70 Series amplifiers. The pot resistance is 5,000 ohms with an absolute DB taper equivalent to a wire wound step attenuator and superior to the normal audio taper. Shaft - 1/4" diameter x 1/4" long. Through panel threaded bushing 3/8" diameter x 3/8" long. \$ 3.00

##### Knobs

13118 Attractive but inexpensive knobs ideal for mixers, 1-1/2" diameter by 1" deep. \$ .50

##### Volume Indicators

VI70 An attractive rectangular "picture frame" window meter with true V. U. ballistics. Includes light sockets and bulbs. Designed for 1/8" thick panels. Requires hole 3-23/32" x 2-5/32". \$ 19.50

##### Monitor Speakers, Frame and Grill

LS70 Excellent quality miniature speaker with special 16 ohm voice coil to match AW70L monitor amplifier. Perfect for low level monitoring. \$ 3.50



### Magnetic Heads

A full complement of unmounted record, reproduce and erase heads, full track stereo, half and quarter track. The recording and playback heads are designed for maximum resolution and to match the AR70 and AP70 amplifiers.

<u>TYPE</u>	<u>RECORD</u>		<u>PLAYBACK</u>		<u>ERASE</u>	
	<u>Model</u>	<u>Price</u>	<u>Model</u>	<u>Price</u>	<u>Model</u>	<u>Price</u>
Full Track	FTR	33.50	FTP	33.50	FTE	14.50
Two Track Stereo	TTR	23.50	TTP	23.50	TTE	12.50
Quarter Track	QTR	21.50	QTP	21.50	QTE	12.50
Half Track	(Same as stereo - use one track)					

### Bias Trap

RF70 A shielded 10 MH high "Q" choke paralleled by an adjustable trimmer to reject bias frequencies in the range of 70 KC to 85 KC, inserted between the AR70 record amplifier and record head to prevent the amplifier from absorbing the recording bias. \$ 7.50

### Record Relay

RY70 A transparently housed plug-in four pole, double throw relay only 1-1/4" wide x 1-7/8" high x 13/16" deep, used to switch from record to play. Coil energized from 28 volts of P70 power supply. Furnished with mating socket. Hole to be cut in chassis for socket 1-1/16" x 5/8". \$ 7.75

### Recording/Reproducing System

ARP70 Complete recording/reproducing system mounted on a 7" x 19" panel with 2 channel mixing, master gain control, playback control, V.I. and power supply. For wide range audio recording use with tape or film, can be equalized for all speeds and for 2-speed relay operation \$750.00

NOTE: There is a possibility that some of the amplifiers may be subject to a 10% Federal Excise Tax after April 1, 1965. On those amplifiers affected, the tax will be collected against the sale price of the item unless an exemption certificate is on hand from the purchaser.

Prices and specifications subject to change without notice.

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OF QUALITY

THE STANCI L - HOFFMAN CORPORATION

921 NORTH HIGHLAND AVENUE • HOLLYWOOD, CALIFORNIA 90038

(Code 213) 464-7461

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AW70/AE Unbalanced input 100,000 ohms, over 60 DB gain including HIGH and LOW equalization continuously variable by two controls to raise 25 cycles and 25,000 cycles by 10 DB. The equalization is desired to restore the full brilliance and low end response lost by the ear at lower levels. The curves are pivoted at 800 cycles with no interaction or apparent level change with full excursion of the controls. A switch is included to set the AW70/AE for "EQ" or "FLAT" response. Will attain full output from -30 DBM input in "FLAT" setting or -14 in "EQ" position. Two preset controls for gain and for balance between the "EQ" and "FLAT" modes. \$ 99.50

AW70/AC A special power amplifier kit for public address systems requiring automatic gain control. Kit consists of AW70/AH basic power amplifier, AC76 automatic gain control preamplifier, and an audience "sensing" microphone. The microphone is placed in a remote part of the auditorium to "meter" the sound level. This information, along with the normal input to the power amplifier will raise or lower the loudspeaker gain within predetermined levels below the acoustic feedback or howl. Automatically compensates for auditorium load. (Price on Application)

EQUALIZED, WIDE RANGE AMPLIFIERS

AP70 High gain, 55 DB, low noise, low distortion tape playback amplifier capable of equalizing any head for any reproduce curve. \$ 34.75

AR70 Versatile low distortion tape recording amplifier with built-in adjustments to match any equalization curve. \$ 34.75

AD70 Disc preamplifier. Similar construction to the AP70, but incorporating equalization network for RIAA standard curve. Equalization adjustable through opening in the top. \$ 32.75

COMMUNICATION, LINEAR AMPLIFIERS

AL76 A linear or microphone preamplifier, similar to the AL70 with a lower impedance output and using a 2-stage preamplifier, having up to 80 DB gain with sufficient power to furnish +4 DBM at 600 ohms without a transformer. Frequency response 150 cycles to 10,000 cycles. Signal to noise ratio 50 DB at less than 1.5% T.H.D. full output. 15,000 ohms unbalanced input. \$ 37.50

COMMUNICATION, EQUALIZED AMPLIFIERS

AP76 A tape playback preamplifier with both preset low and high end equalization generally designed for low speed tape systems wherein the recorded material has little pre-emphasis and most equalization occurs in playback. Approximately 5 DB boost is used at the low end and up to 20 DB at the highest desired reproduced frequency. For 15/16 IPS, as an example, there is 5 DB at 200 cycles and 18 DB at 4500 cycles. Input impedance - 15,000 ohms. Output - 600 ohms at +4 DBM. Distortion less than 1.5% T.H.D. \$ 39.50

AR76 Similar to AR70 recording amplifier but including high frequency peaking circuit for lower speed recording. As an example, 3 DB at 200 cycles and 7 DB at 4500 cycles for 15/16 IPS. \$ 34.75



COMMUNICATION, COMPRESSION AMPLIFIERS

AC76 An automatic gain control amplifier to hold the level of lines constant over wide input levels. Offering up to 60 DB gain, the built-in 10,000 ohm bridging transformer is followed by a built-in gain control to establish the level or output desired. The AGC action is accomplished by sensing the output, rectifying to DC and controlling the input level. A built-in control "SETS" the output to the desired level which it holds  $\pm 2.5$  DB for  $\pm 20$  DB level change.

Output level up to +4 DB at 600 ohms unbalanced (without transformer) at less than 1.5% T.H.D. Distortion increases to 4% with signal increase of 40 DB which would be beyond its normal requirements. Extremely fast attack time (2 milliseconds) with no blocking or thumping. Release time can be externally set at socket connector by a fixed resistor or pot to from a fraction of a second to several minutes. Nominally set to 1.5 seconds. Requires 30 milliamperes at 20 volts.

\$ 52.50

SWITCHING OR VOICE OPERATED RELAY AMPLIFIER

ESA70 An electronic switch to energize a pilot lamp when a signal between 100 cycles and 60,000 cycles appears at its input. Using a 28 volt lamp, #1819, the maximum sensitivity of the amplifier will light the lamp from -22 DBM. Built-in gain control to operate from higher levels. Maximum drain at 25 volts D.C. 0.050 amperes.

\$ 34.50

ESA70R Similar to lamp control but designed with heavier output transistor to close a relay with signal. Maximum sensitivity of amplifier closes relay at -25 DBM input from 600 ohm line. Relay coil may be 300 ohms to 700 ohms. Current drain approximately 75 milliamperes with lower resistant coil using 25 volts.

\$ 35.50

OSCILLATORS

AO70 A push-pull oscillator with ample power for "birdie free" wide range erasing and recording for single track or stereo.

\$ 39.50

AT70 A 1 KC audio tone oscillator to furnish a signal used to calibrate or establish levels in mixers, consoles or recording systems.

\$ 31.50

AT73 A 3 tone audio oscillator furnishing 60~, 600~ and 6000~ for a short frequency run in mixers, consoles or recording systems.

\$ 49.50

AT70M Same as AT70 but including a microphone pre-amplifier for voice announcements in mixers, consoles or recording systems.

*49.50*  
\$ ~~37.50~~

POWER SUPPLIES

P70 A complete, fused, hum free, regulated D.C. supply to power a group of A70 Series of amplifiers. Input 115/230 volts, 50/60 cycles, single phase to a nominal 20 volts output at 400 mls. Housed in a welded steel enclosure, 3-1/2" x 3-1/2" x 4-1/2", with removeable base, the P70 uses a 9 pin "octal type" plug with its mating panel mounting socket furnished.

Silicon diodes offer full wave rectification to provide approximately 28 volts of regulated D.C. to power relays and the AW70L monitor amplifier. A 22 volt zener then follows through a transistor filter circuit to provide the regulated output with less than 200 microvolts hum.

\$ 78.50