ROLA

LEADERS

in the

Field

of

Sound

Reproduction

Professional

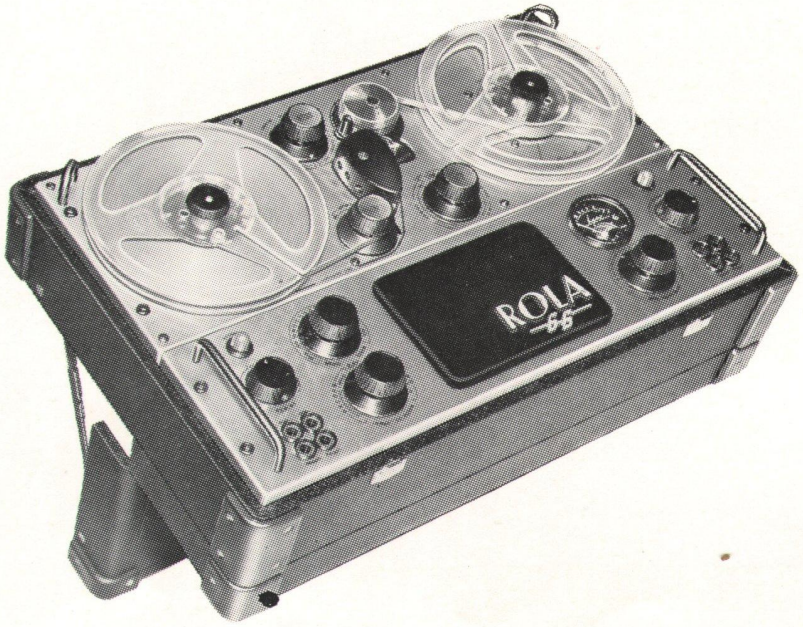
MAGNETIC TAPE RECORDING and REPLAY EQUIPMENT

ELECTRONIC DIVISION
ROLA COMPANY (AUST.) PTY. LTD.
The Boulevard, Richmond, E.1, Vic. Phone: JB 3921

MODEL 66 - GENERAL PURPOSE RECORDER

NEW VERSATILITY

Designed as a general purpose model, the Rola Model 66 offers flexibility and excellence of reproduction, together with all the modern features of the Mk. II Series Tape mechanism.



FOR BROADCAST STUDIOS

For outside or in, the Rola Model 66 is a heavy duty all-purpose machine. It combines high fidelity, accurate timing, durability and freedom from noise to a degree never before available at the price. For stations presently equipped with the more expensive models, the Model 66 provides a "fool-proof" portable of matching quality.

FOR MUSICIANS, CONSERVATORIUMS, SCHOOLS

It is a machine for music rehearsals where sound of constant pitch and imperceptible distortion is desired. It can be started and stopped at any place throughout its full tape length and still be in tune with the band, orchestra or soloist.

FOR AUDIO VISUAL EDUCATION

Model 66's can be the "master recorders" of the school or school system. They provide quality where quality is needed — in music, and in tapes for re-copying for radio broadcast, for competition or for demonstration. Yet the Model 66 is rugged and readily portable from one classroom to another.

FOR HIGH FIDELITY ENTHUSIASTS

Its matchless Rola fidelity makes it a possession of envy among "adventurers in recorded sound," and persons who know and appreciate truly fine reproduction of music.

FAST RESPONSE TO CONTROLS

Starting time is "instantaneous" — full stable tape speed is attained in less than 1/10th second. In stopping, the tape moves less than one inch at 15 inches per second. Exact cueing is routine on a Rola Mk. II Series.

FACILITIES PROVIDED IN THE ROLA MODEL 66

TRIPLE HEADS	Erase, Record, Play-back. Full or half track optional.
DUAL SPEED OPERATION	Either 3¾ and 7½ inches per second or 7½ and 15 inches per second.
LEVEL METER	dB calibrated for visual monitoring.
MONITOR LOUDSPEAKER	Inbuilt Rola loudspeaker with its own level control.
INPUTS: Microphone	High Impedance. Requires input signal of less than 1 mV for normal recording level (+ 8 dbm at 600 ohms).
Bridge	Single Jack. Requires input signal of 80 mV.
600 ohms	Twin Jack. Requires input signal of — 12 dbm (200 mV).
OUTPUTS: 600 ohms	Twin Jack.
External Speaker	Single Jack to 15 ohm voice coil.
Headphones	Single Jack.
	All Inputs and Outputs on Front Panel.
RADIO TUNER	1650-550 K.C. Optional Extra. When fitted forms integral part of amplifier.

MODEL 77 - PROFESSIONAL RECORDER

The Rola Model 77 Professional Magnetic Tape Recorder, incorporating the Mk. II Series Tape Transport Mechanism, affords the greatest scope possible for the planning and production of all types of recorded material.

AMPLIFIER DESIGN

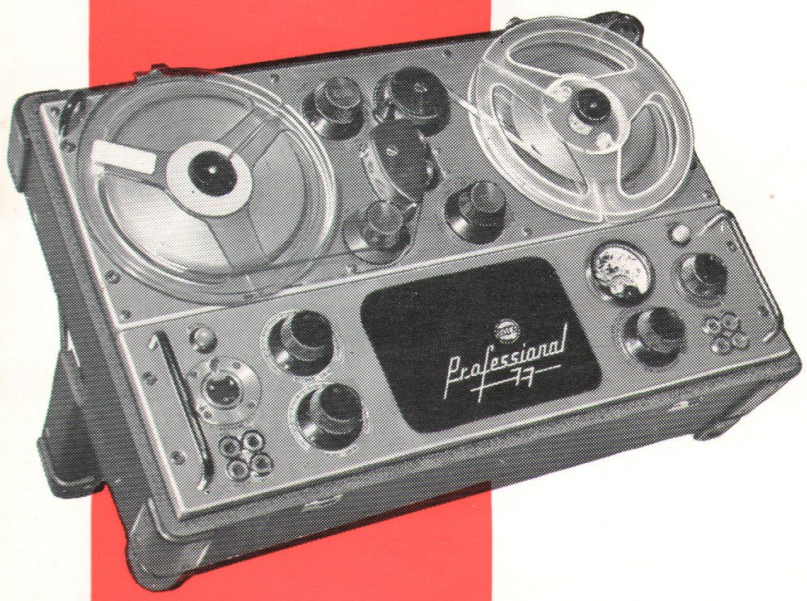
The 77 amplifier has been designed in four separate sections — a design which provides for the highest degree of flexibility of operation yet achieved in a tape recorder and allows for . . .

- SIMULTANEOUS REPLAY MONITORING
- DIRECT COMPARISON OF ORIGINAL AND RECORDED SIGNALS AT ANY SPEAKER VOLUME BY MEANS OF AN A-B CONTROL.
- METER AND LINE SWITCHING TO EITHER RECORD OR PLAY CHANNELS.
- INDEPENDENT CONTROL OF MAIN RECORD AND PLAY AMPLIFIERS.
- SWITCHING FROM PLAY TO RECORD WITHOUT ANY PAUSE IN TAPE MOTION AND WITHOUT ANY CLICKS OR ELECTRICAL THUMPS BEING HEARD OR RECORDED.

These features, together with adherence to C.C.I.R. Specifications, make the Rola Model 77 a recorder which will duplicate and even improve upon the facilities available with the most complex and expensive machines.

FACILITIES

TRIPLE HEADS	Erase, record, playback.
DUAL SPEED OPERATION	7½ and 15 inches per second.
LEVEL METER	VU metering.
MONITOR LOUDSPEAKER	Inbuilt Rola loudspeaker with its own level control.



INPUTS:	
Microphone	50 ohms.
Balanced transformer	600 and 10,000 ohms.
OUTPUTS:	600 ohms to line (balanced). 3.5 ohms 2 watt monitor output. *All Inputs and Outputs on front panel.*
GAIN	In excess of 85 dB (from microphone input to zero level — + 8 dbm at 600 ohms).
RECORDING BIAS	Variable control.
FAST RESPONSE TO CONTROLS	Starting time is "instantaneous"—full, stable, tape speed is attained in less than 1/10th second. In stopping, the tape moves less than one inch at 15 inches per second. Exact cueing is routine with the Rola Mk. II Series.

ROLA

GENERAL PERFORMANCE CHARACTERISTICS AND SPECIFICATIONS

	MODEL 66	MODEL 77
OPERATING METHOD	Press button — electro mechanical interlock.	Press button — electro-mechanical interlock.
TAPE SPEED	3¾" and 7½" or 7½" and 15" per second.	7½" and 15" per second.
SPOOL SIZE	NARTB 7"-10½" NAB with large spool mechanism fitted.	NARTB 7"-10½" NAB with large spool mechanism fitted.
TAPE DRIVE	Three motors — synchronous capstan and two high torque spooling.	Three motors — synchronous capstan and two high torque spooling.
TIMING ACCURACY	± 0.1% (±1.8 seconds in 30 minutes).	± 0.1% (±1.8 seconds in 30 minutes).
FAST FORWARD AND REWIND TIME	45 seconds for 1,200 ft. reel.	45 seconds for 1,200 ft. reel.
FLUTTER AND WOW	Better than — 0.3% at 3¾" per second. 0.25% at 7½" per second. 0.2% at 15" per second.	Better than — 0.2% at 7½" per second. 0.15% at 15" per second.
HEADS	Separate "Erase", "Record" and "Play" heads.	Separate "Erase", "Record" and "Play" heads.
DISTORTION	Record less than 1% (from 600 ohm input). Play less than 1% (for zero level out, i.e., + 8 dbm). *All measurements at 1,000 c.p.s.*	Record less than 1% (from 600 ohm input). Play less than 1% (for zero level out, i.e., + 8 dbm). *All measurements at 1,000 c.p.s.*
FREQUENCY RESPONSE	At 3¾" per second 50- 6,000 c.p.s. ± 3 dB. At 7½" per second 40-10,000 c.p.s. ± 3 dB. 35-12,000 c.p.s. ± 4 dB. 30-14,000 c.p.s. ± 6 dB. At 15" per second 40-15,000 c.p.s. ± 3 dB. 30-18,000 c.p.s. ± 6 dB. Approximate Highs Control Range (Replay)— + 4 dB to — 12 dB at 12,000 c.p.s.	At 7½" per second 40-10,000 c.p.s. ± 2 dB. 30-14,000 c.p.s. ± 4 dB. At 15" per second 40-15,000 c.p.s. ± 2 dB. 30-18,000 c.p.s. ± 4 dB.
SIGNAL TO NOISE RATIO	Not less than 40 dB unweighted at normal recording level.	Not less than 52 dB below 2% T.H.D. level.
INPUTS	1. High Impedance Microphone (Low Impedance Optional Extra). 2. 600 ohm zero level (Twin Jacks). 3. Bridging Input. 4. Internal Radio Tuner.	1. Microphone Input 50 ohms. 2. Balanced 600 ohms. 3. Balanced Bridge In.
OUTPUTS	1. 600 ohms zero level (Twin Jacks). 2. 15 ohm voice coil. 3. Earphone Monitor.	1. Balanced 600 ohm. 2. 3.5 ohm (for monitor purposes).
METERING	dB Level Meter on both Record and Replay.	VU Meter with switching to either Record or Replay (normal or simultaneous).
POWER OUTPUT	4.5 watts at less than 1% distortion. 6 watts at less than 2.5% distortion.	To 600 ohm line — greater than + 18 dbm at less than 1% distortion. To Monitor Speaker 2 watts at 2.5% distortion.
POWER REQUIREMENTS	210-250 volts A.C. 50 cycles.	210-250 volts A.C. 50 cycles.
POWER CONSUMPTION	158 Watts.	150 Watts.
WEIGHT	45 lb.	47 lb.
DIMENSIONS	Panel size — Tape Transport 19" x 7". Amplifier 19" x 5¼". Case Overall 20¼" x 14" x 7½".	Panel size — Tape Transport 19" x 7". Amplifier 19" x 5¼". Case Overall 20¼" x 14" x 7½".

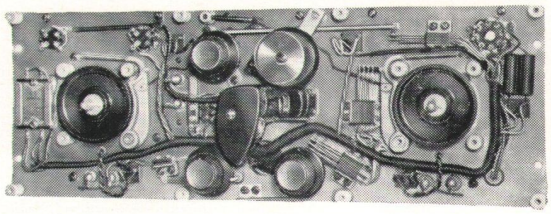
THE ENGINEERING BEHIND THE SOUND

To build magnetic tape recorders that are both fine and practical, Rola engineers have aimed for two objectives in the design of every component and accessory.

First was the direct problem of function. Each part has had to make its contribution toward fidelity, timing or utility and convenience. Elimination of inherent circuit noises, levelling out of unwanted mechanical motions and creation of desired starting, stopping and tape handling characteristics have presented challenging design and manufacturing problems. Persistence and ingenuity have solved them.

Second was reliability and durability. This consideration has received persistent attention throughout Rola design. As a result Rola recorders not only meet the highest specifications, but they maintain their outstanding performance through thousands of hours of service — reason enough why engineers have implicit faith in Rola machines.

MK II SERIES - TAPE TRANSPORT MECHANISM



The tape transport mechanism, common to both the Model 66 and the Model 77, embodies every proven feature to give a uniformity of performance and a simplicity of operation not obtainable in any other tape recorder.

STABILITY OF TAPE MOTION

Accuracy of recorded material timing and freedom from distracting flutter and wow both depend upon extreme stability of tape motion, and since the components in the tape drive system determine the accuracy of this motion, the utmost care has gone into their design and manufacture. Steady driving motion is furnished by a synchronous capstan motor, the shaft of which, by means of a precision ground insert, becomes the actual drive capstan. This method of drive eliminates all mechanical linkages — there are no belts, pulleys, gear or puck wheels to wear or become oil-fouled thus introducing wow and flutter. Concentricity of Rola capstan diameters is held to a tolerance of a quarter of one ten thousandth inch.

ACCESSIBILITY

For inspection and service, the front cover panel of the Mk. II Series tape transport mechanism is readily removable and the rear control box housing cover is hinged to provide extreme accessibility to all components.

HIGH PERFORMANCE MAGNETIC HEADS

Extremely high frequency response with low noise level, together with uniform performance over thousands of operating hours, result from the unique laminated design of the Rola record and play-back heads. Precision lapping of the "gap" surfaces to a microscopic flatness is responsible for achieving and maintaining the desired performance characteristics, whilst thorough shielding of the record and play heads with a Mumetal housing protects them from stray electrostatic and electromagnetic fields.

TAPE SHUTTLE AND BREAKING

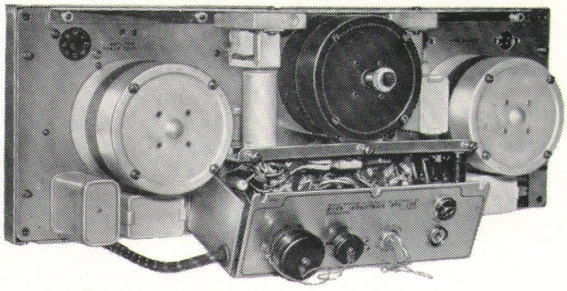
Tape handling on the Mk. II Series is the ultimate in simplicity and effectiveness. Both supply and take-up reels operate on separate variable-speed torque motors. Braking is by means of solenoid-operated, self energising, "fail-safe" brakes.

SIMPLICITY AND CONVENIENCE OF OPERATION

Press buttons for the record and play functions and for stopping the tape motion, the variable speed shuttling control, "wrap-round" tape threading and a complete, precautionary, interlocking system, provide the simplest and most convenient method of tape control yet devised.

EASE OF CUEING AND EDITING

Exact locating of cues and spots to be edited is facilitated by the controls of the Mk. II Series Tape Transport Mechanism. Equally important is the sturdy construction of the unit which ensures that it will stand up under the repeated starting, stopping and fast rewinds required in extensive editing work.



DESIGN FEATURES

- RIGID CONSTRUCTION
- PRESS BUTTON OPERATION
- TRIPLE MOTOR DESIGN
- VARIABLE SPEED SHUTTLING
- FULL EDIT FACILITIES
- TAPE OVER-RUN SWITCH
- EXTREME SERVICEABILITY
- PRECAUTIONARY INTERLOCK SWITCHING
- "FAIL-SAFE" BRAKING
- "TWIST-LOCK" SPOOL CAPS
- "WRAP-ROUND" TAPE THREADING
- REMOTE CONTROL
- UNIQUE TRIPLE HEAD ASSEMBLY
- LOCKED AZIMUTH ADJUSTMENT
- LONG WEARING LAMINATED HEADS
- AUTOMATIC TAPE LIFT
- FULL OR HALF TRACK HEADS
- COMPLETE SOLENOID OPERATION
- NO MECHANICAL LINKAGES
- "PLAY-SAFE" SWITCH (ensures absolute safety on playback)

ROLA

Professional

"100" SERIES CONSOLE TAPE RECORDER

The "100" Series Professional Console Tape Recorder.

This new addition to the Rola range has been designed to traditional Rola standards.

The "100" Series Console specifications provide lower Signal-to-Noise Ratio and Wow and Flutter figures, a wider Frequency Response and a greater Operational Reliability than has hitherto been aimed for and achieved in this type of machine.

FREQUENCY RANGE

The Rola "100" Series standards for frequency range are far higher than those set down for any other professional type recorder. Compensation controls are provided on both *"Record"* and *"Replay"* channels to cover the characteristics of individual tapes at both operating speeds.

SIGNAL TO NOISE RATIO

The Rola "100" Series has a much better signal to noise ratio than that generally specified for top-grade recorders. Below 2% Total Harmonic Distortion, it is not less than 60 dB. "Wow" and "Flutter" characteristics are also excellent and much superior to those hitherto achieved in this type of recorder.

CHANNEL FACILITIES

The Rola "100" Series is normally supplied as a full Track *"Record"* and *"Replay"* Unit, but can also be made available as a Half Track unit or as a Dual Track *"Record"* and *"Replay"* machine for Stereophonic Sound or Integration Purposes.

OPERATIONAL FLEXIBILITY

The *"Record"* and *"Replay"* characteristics of the Rola "100" Series are in accordance with C.C.I.R. specifications, but provision has also been made for replay of tapes recorded to N.A.B. standards. The control circuits employ electrically operated solenoids and relays. These can be remotely controlled if desired. The interlocking is such that accidental tape spillage is impossible. Continuously variable spooling in either direction is provided. The tape is automatically lifted off the heads during spooling. The "100" Series can accommodate 14" spools.

BIAS AND "ERASE"

Another important feature of the Rola "100" Series is the use of separate *"Bias"* and *"Erase"* frequencies, a high one for *"Bias"* and a low one for *"Erase."*

LONG LIFE HEADS

The *"Record"* and *"Replay"* heads of the Rola "100" Series are the latest long-life laminated type, encapsulated for long-term stability.
A vernier azimuth adjustment is provided on the *"Record"* and *"Replay"* heads and the complete triple head assembly is readily removable for simplified head interchange.

PRESS BUTTON OPERATION

The control system on the Rola "100" Series is electrically interlocked in such a way that tape breakages automatically stop the machine. The interlock also permits push-button change from one mode of operation to another while the machine is running.

FULL CUEING FACILITIES

Provision has been made in the Rola "100" Series for access to the tape over the *"Replay"* head during operation. This provides full cueing facilities, enabling the tape to be positioned on, or adjacent to, the *"Replay"* head during spooling, thus making the machine particularly suitable for tape editing.

CIRCUIT METERING

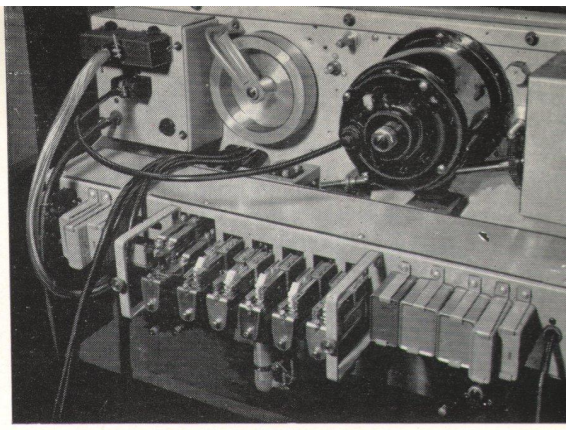
Provision is made by means of switching of the *"Record"* and *"Replay"* Level Meter for the measurement of the cathode current of all valves in the signal circuits of the recorder, as well as the bias and erase currents — and the Mains and high tension supply voltages.

ACCESSIBILITY

Special attention has been paid in the design of the Rola "100" Series to provide complete accessibility to all components. Relays are located under an easily removable dust cover. The control box section is removed by unscrewing two knurled nuts and uncoupling the connectors to the deck assembly. The amplifier is mounted on tiltable slides, thus giving access to the under chassis components. On the mechanical deck key components are assembled as detachable units. The deck is hinged and swings back to permit access to the components mounted beneath it.

OPTIONAL EXTRAS

Included in the optional extras which can be provided with the Rola "100" Series are two types of monitor amplifiers — a 3 watt and a 10 watt unit — and for the addition of Microphone Input and Remote Control equipment.



The actuating relays are readily accessible.

SPECIFICATIONS

TAPE SPEEDS:	3¾/7½ or 7½/15 or 15/30 i.p.s. (For telemetry or other applications, machines fitted for 30/60, 60/120 or any special tape speeds can be provided.)
FREQUENCY RESPONSE:	15 i.p.s. ± 4 dB from 20 to 20,000 c.p.s. 15 i.p.s. ± 2 dB from 30 to 18,000 c.p.s. 7½ i.p.s. ± 4 dB from 30 to 17,000 c.p.s. 7½ i.p.s. ± 2 dB from 40 to 14,000 c.p.s. 3¾ i.p.s. ± 3 dB from 40 to 8,000 c.p.s.
RECORDING CHARACTERISTICS:	The "Record" and "Play" characteristics are in accordance with C.C.I.R. specifications, and in addition provision has been made for the replay of tapes recorded to American N.A.R.T.B. characteristics.
EQUALISATION:	Controls are provided for correcting the frequency response of both "Record" and "Replay" channels independently and on both speeds to compensate for varying tape characteristics.
SIGNAL TO NOISE RATIO:	Not less than —60 dB when measured from the 2% total harmonic distortion point.
WOW AND FLUTTER:	3¾ i.p.s. less than .15%. 7½ i.p.s. less than .08%. 15 i.p.s. less than .06%.
START AND STOP TIME	Virtually instantaneous.
PLAYING TIMES:	7½ i.p.s. with 1,200 ft. tape on 7" spool — 32 minutes. 7½ i.p.s. with 2,400 ft. tape on 10½" N.A.B. spool — 64 minutes. 7½ i.p.s. with 5,000 ft. tape on 14" spool — 133 minutes.
PLAYBACK TIMING ACCURACY:	± .1% (± 1.8 seconds over a half-hour period at 7½ i.p.s.).
REWIND TIME:	Variable, but less than 1½ minutes for a 2,400 ft. reel.
CONTROLS:	Electro-mechanical press-button interlock. Separate "Stop," "Forward," "Rewind" and "Record" buttons, Fail/Safe over-run switching. Motor Speeds and Equalisation for tape speeds controlled by a common switch, whilst a reel size switch provides correct tape tension for 5" to 7" reels, and 10½" to 14" reels.
METERING:	Provision is made for measurement of cathode currents of all valves in the signal circuits of the recorder, plus bias, erase current, A.C. mains, and high tension supply voltage.
RECORD INPUT:	Normally 600 ohms balanced input, bridge-in at zero level (+8 dbm). Range +20 to —20 dbm. (Optional extras include a microphone channel —90 dbm input.)
OUTPUT TO LINE:	+8 dbm 600 ohms (up to +18 dbm available by adjustment).
AMPLIFIERS:	Separate "Record," "Playback," "Line Amplifier," and "Meter Amplifier" are employed.
PLUG-IN HEAD ASSEMBLIES:	The complete Triple Head Assembly is readily removable as a unit for simplified head interchange.
BIAS:	Use of high bias frequency and a low erase frequency eliminates design compromise necessary to achieve both optimum erase and recording performance from a single frequency source.
EDITING FACILITIES:	Switching from "Play" to "Record" without any pause in tape motion, and without any clicks or electrical interference.
MONITORING:	Independent "Record" and "Playback" amplifiers allow direct comparison of original and recorded signals by means of an A.B. switch. The standard V.U. meter can also be independently bridged across the incoming line, the record amplifier or, alternatively, the 600 ohms zero level output. Provision for mounting monitor amplifier and speaker system within the console cabinet if desired. This latter unit is available as an optional extra.
POWER REQUIREMENTS:	280 watts at 240 volts 50 cycles A.C. operation.
RACK SPACE:	Standard 19". Tape transport 18¾": Amplifier 7": Power Supply 7".
CONSOLE DIMENSIONS:	Height — 41" (including castors). Width — 29¼", Depth — 28".
WEIGHT:	250 lbs.

SPECIAL EQUIPMENTS

Below is a brief summary of some of the special record and replay equipment being made by Rola Company:

MULTI-TRACK MACHINES

For the monitoring of multi-channel transmissions, a multi-track machine which allows the simultaneous recording or reproduction of up to 28 independent channels is available. The aircraft industry uses this type of multi-track magnetic tape equipment for engine testing. Each vital component of the engine is connected electronically to a given track and when the final recording is fed into a computer, the overall performance is quickly available, thus saving many man hours of dissection and analysis.

Geophysical information can be simply determined with the use of multi-track equipment. Underground detonations are recorded on separate tracks from microphones placed at various distances. The delay periods between tracks are used to provide the required geophysical information.

FOUR-SPEED MACHINES

A special four-speed equipment is offered which permits recording and reproduction of material at 15, 7½, 3¾ and 1⅞ i.p.s. When used in conjunction with a frequency restoration amplifier, narrow band signals recorded at 15 i.p.s. can be replayed at 7½ i.p.s. with a resultant signal similar to the original but at exactly half the speed. As each replay speed is halved so the frequency restoration amplifier multiples the signal to its original frequency, and by the use of a rotating head scanner, multiplex or wide-band frequencies can be analysed.

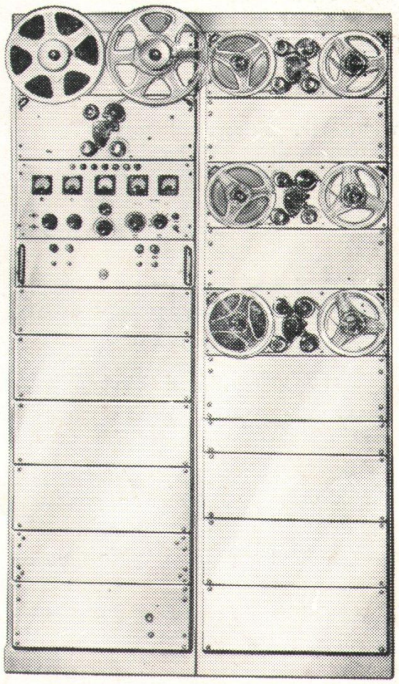
SLOW SPEED MACHINES

For seismic studies, special slow speed machines are available. At speeds of 15/32 i.p.s., earth movements are recorded on tape via a frequency modulated amplifier responding to frequency variations of the order of less than 1 cycle per second. When replayed at speeds of 60 i.p.s., these variations are transposed to frequencies within the audio range and can be studied and analysed at will. Once the phenomena has been captured on tape, the occurrence can be repeated continuously without degradation.

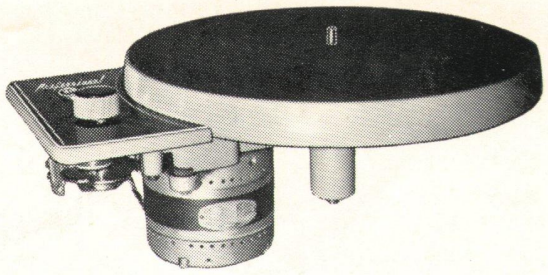
REPLAY EQUIPMENT

In locations where normal record facilities are not required, Rola "Replay Only" machines can be installed. For the small studio set-up, the Model 33C replay unit offers 600 ohm output level, the use of up to 7 inch spools, together with all the editing and cueing facilities of the Mk. II series equipment.

The Model 33B Professional replay machine will accommodate 10½ inch spools, incorporates an accurate time and footage indicator, and offers "Replay" characteristics equal to the finest Console type equipment available. Remote control is available for both units and each model is equipped with its own power supply.



Typical Rola Master — 3 Slave Tape Duplicating Equipment.



PROFESSIONAL-TYPE TURNTABLE

This new Rola "Professional" turntable sets new standards of quality and performance. It is a precision built unit, designed with the care and attention to detail associated with every product which carries the Rola marque.

It is fitted with a powerful synchronous motor dynamically balanced for smooth free running. The motor is attached to a rubber floated mounting plate which isolates it from the base plate and turntable structure and thus contributes to the rumble-free operation which is one of the features of the Rola "Professional" turntable.

The motor is coupled to the turntable through a four step pulley which engages in the precision ground rubber idler roller which runs on the carefully machine-finished rim on the inside of the turntable. A cleverly designed actuating cam permits exceptionally free and easy change to any of the unit's four speeds, i.e., 16⅔, 33⅓, 45 and 78 r.p.m., and at the same time ensures that the motor is switched off and the idler roller disengaged during the change from one speed to another.

In the Rola professional turntable rumble is almost non-existent and the total flutter and wow is below audible limits. When checked at 33⅓ r.p.m. with a Decca LXT2695 test record the r.m.s. sum of the total flutter and wow measured on a Gaumont Kalee Flutter Meter type 564 is less than 0.1%.

DUPLICATING EQUIPMENT

A range of Tape Duplicating Equipment has been developed for the economical production of multiple copies from a master tape. Various combinations of tape speeds and head structures on both master and slave units are available to provide an installation suitable for any specific purpose. Provision of full monitoring facilities greatly simplifies the setting up procedure. Bias current may be quickly set to optimum for different types of tape and the whole installation functionally checked by duplicating a standard test tape and replaying the copies on the slave units. This ensures that the production operation efficiency of the equipment is maintained at the highest level.

AUTO ANNOUNCING EQUIPMENT

This equipment has been designed for the repetition of spoken messages up to two minutes' duration. The recording media is a continuous band of magnetic oxide-impregnated neoprene mounted on a 5 inch diameter cylindrical drum which rotates at a speed of one revolution every 4 seconds. The "Record" and "Replay" heads trace a spiral path on the drum surface automatically erasing a previous message when in the "Record" function. When the machine is switched from the "Record" position a short 50 cycle pulse is automatically recorded, which on "Replay" operates a release pawl, thus causing the drum to return to the "Start" position and automatically repeats the message.

Rola Automatic Announcing Equipment was used by the P.M.G. Department for its score service during the 1958-59 Test Cricket Series.

Other Rola Accessories include —

★ Remote Control Units ★ Auxiliary Spooling Mechanisms ★ Simultaneous Replay Monitors ★ Head Demagnetisers ★ Tape Splicing Equipment ★ Plastic Spools ★ Spool Containers ★ Recording Tapes

Electronic Division

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