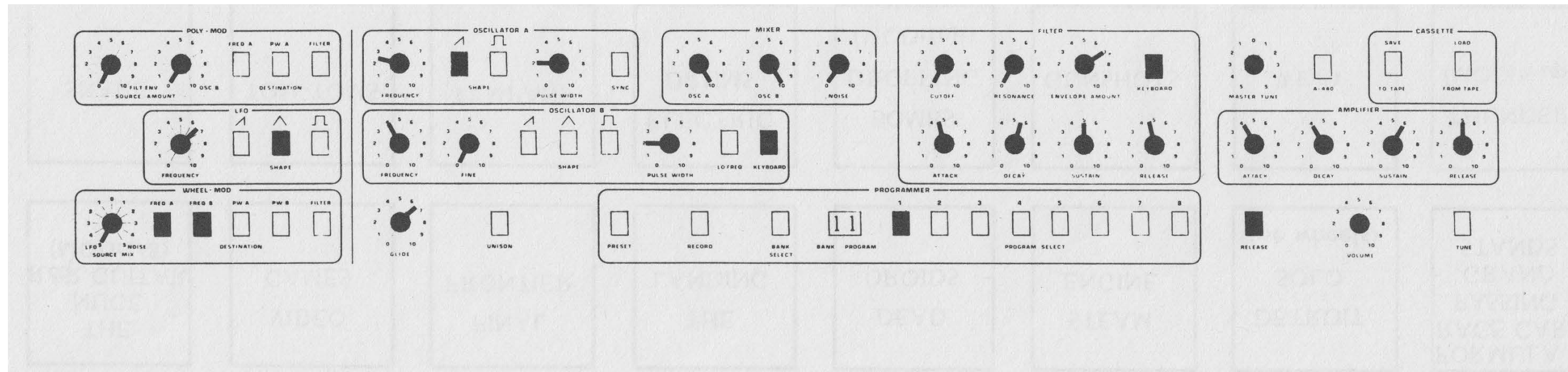# Original Prophet-5 Factory Program Patch Sheets

The original Prophet-5 featured 40 factory programs (38 unique sounds and 2 duplicates for patch management). Many of these sounds became classics and appeared on countless recordings. These are the patch sheets for those sounds. They are scanned from the original Prophet-5 manual. The Prophet-5 Rev4 control panel differs slightly from the vintage Prophet-5, but the essential controls are the same. All of these sounds are included in Group 5 on the Prophet-5 Rev4 (programs 511-558). Check them out!

1-1: Brass

OSC A: up 1 octave (basic pitch)
OSC B: up 2 octaves

MOD WHEEL section is set for a vibrato effect (approximately 5 cycles per second). Move wheel up slightly (1/8 to 1/4) to engage vibrato.

OSC B is programmed off (no waveform selected); however, the mixer section is set to allow for its addition to the sound. If added, OSC B will provide an octave doubling, for a full ensemble effect. Use sawtooth wave to match tone color with OSC A; the triangle wave will give a softer doubling effect.

GLIDE is programmed in for use with UNISON mode — when the patch is used as a lead line. Glide will engage if UNISON is switched on.

PULSE-WIDTH on both oscillators is set at 2; this allows switching of waveforms (if pulse-width were programmed at 0, there would be no sound when OSC A or B were switched to pulse wave).

NOTES:

— Try routing mod to the FILTER instead of the oscillators; it gives a quasi-tremolo effect rather than a straight vibrato. Once again, the wheel should be moved up only slightly. Adjust vibrato or tremolo rate to suit your preference by adjusting the LFO FREQUENCY.

— Adjust filter settings (CUTOFF and ENVELOPE AMOUNT) to alter brightness of tone. Adjust settings on both envelope generators (particularly the ATTACK and DECAY settings) to change the characteristic shape of the sound (in order to simulate different brass instruments).

— For different ensemble balance (if both oscillators are used), change MIXER settings for OSC A and B.

— Select different waveforms on OSC A and OSC B to experiment with different tone colors — sounds that are less "brass"-like.

— OSC B can be used in LO FREQ mode with the POLY-MOD section for either vibrato (route to OSC A) or tremolo (route to FILTER). Set the OSC B SOURCE AMOUNT at approximately 1½. There will be a bit more animation with the POLY-MOD, since 5 LFOs are involved (one for each voice).
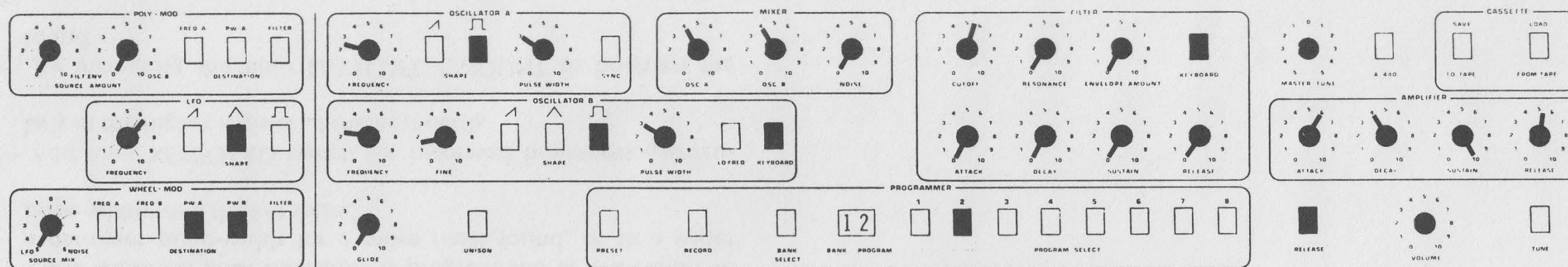
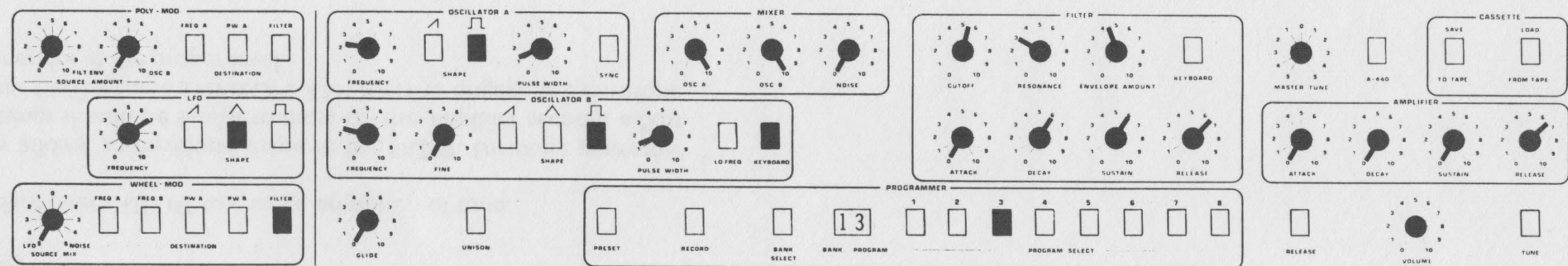# 1-2: Low Strings

OSC A: up 1 octave
OSC B: up 1 octave

MOD WHEEL must be moved up 1/4 to 1/3 for proper effect. Pulse-width modulation is used on both oscillators to create the animation of the sound; in combination with the detuning of OSC B, the pulse-width mod helps create the effect of a string section. The MOD WHEEL should be adjusted for different registers on the keyboard; more for playing in the higher register, less for the lower register.

In general, the best string sound results when the keyboard is played in the bottom 3 octaves; adjust the filter CUTOFF to play consistently in the top 2 octaves.

NOTES:

— Adjust filter CUTOFF to change brightness of tone.

— Try adding an envelope shape to the FILTER. Envelope generator settings should be similar to those on the amplifier section; adjust filter CUTOFF and ENVELOPE AMOUNT to engage the envelope generator at the proper level.

— Remember that in order to create the effect of a low string section you must do your part: you must play notes that are idiomatic for strings. If you play this patch with piano phrasing, it will not sound like a string section.

POLY - MOD

FREQ A   PW A   FILTER

FILT ENV   OSC B   DESTINATION
SOURCE AMOUNT

LFO

FREQUENCY   SHAPE

WHEEL - MOD

FREQ A   FREQ B   PW A   PW B   FILTER

LFO   NOISE   DESTINATION
SOURCE MIX

OSCILLATOR A

FREQUENCY   SHAPE   PULSE WIDTH   SYNC

OSCILLATOR B

FREQUENCY   FINE   SHAPE   PULSE WIDTH   LO FREQ   KEYBOARD

GLIDE   UNISON

MIXER

OSC A   OSC B   NOISE

PROGRAMMER

PRESET   RECORD   BANK SELECT   BANK   PROGRAM   1 2 3 4 5 6 7 8   PROGRAM SELECT

1 3

FILTER

CUTOFF   RESONANCE   ENVELOPE AMOUNT   KEYBOARD

ATTACK   DECAY   SUSTAIN   RELEASE

CASSETTE

SAVE   LOAD   TO TAPE   FROM TAPE

MASTER TUNE   A-440

AMPLIFIER

ATTACK   DECAY   SUSTAIN   RELEASE

RELEASE   VOLUME   TUNE

1-3: Muted Clav.

OSC A: up 1 octave
OSC B: up 1 octave

RELEASE is programmed off; switch on to engage the programmed release times — sound will fade slowly after keys are released.

UNISON can be switched on to get a thick bass patch.

MOD WHEEL section can be engaged (if desired) to add a tremolo effect to the sound. Move wheel up slightly (1/8 to 1/4) to engage tremolo.

NOTES:

— Pulse-width on both oscillators is programmed at 1½. Adjust to a narrower pulse-width for a more nasal sound, or to a wider pulse-width for a thicker sound.

— Add filter KEYBOARD switch for increased brightness (particularly in the higher register of the keyboard).

— Try increasing the filter ENVELOPE AMOUNT to brighten the sound.

— For increased thickness in the sound, try detuning OSC B by setting the FINE TUNE knob to 1 or 1½.

— In conjunction with these various changes (as suggested above), adjust the filter CUTOFF setting to alter the overall brightness of the sound.
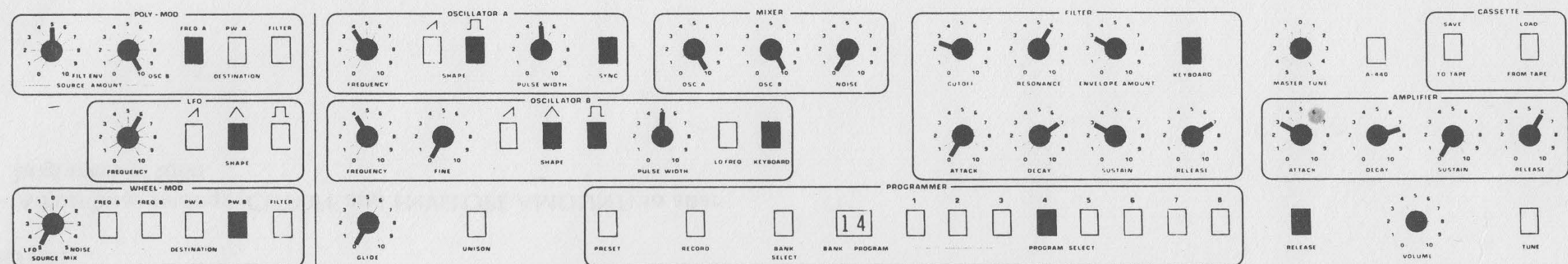
1-4: Percussive Electric Piano

OSC A: up 1 octave + a perfect 5th
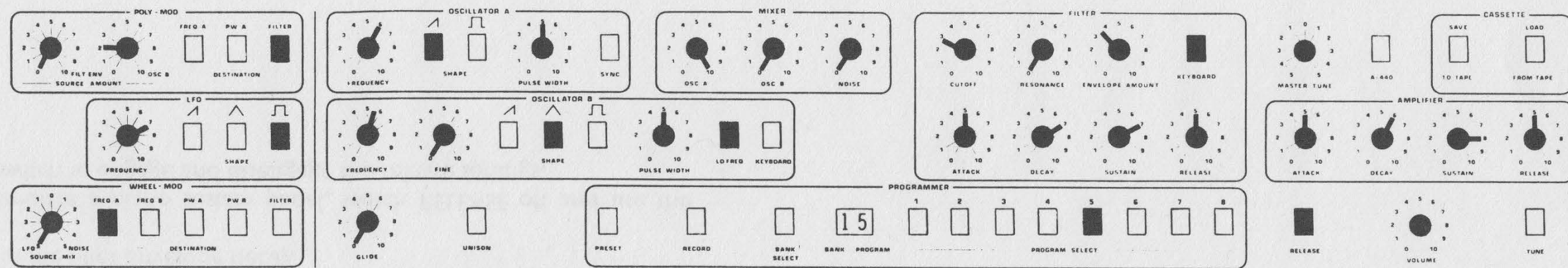**OSC B: up 2 octaves** (basic pitch)

One important aspect of the sound of this patch is the appearance of an octave overtone at the beginning of each note, which fades as the note decays (this is a characteristic sound of reed or tine electric pianos, when the keys are struck forcefully). This effect is created by the POLY-MOD section in conjunction with the SYNC on OSC A the FILTER ENVELOPE is used as the modulation source (as the voltage lowers during the DECAY portion, the octave overtone disappears). To study this effect directly, switch off the OSC B waveshapes and listen to OSC A by itself. Since the two oscillators are in SYNC, the effect of OSC B as a modulation source in the POLY-MOD section is minimal; if SYNC is switched off, OSC B will have a strong effect via the POLY-MOD section: you will hear a clangorous tone that descends at the rate of the filter envelope decay.

To simulate a piano sustain pedal, switch RELEASE off and use the footswitch to engage and disengage the release settings.

MOD WHEEL section can be engaged (if desired) to create a quasi-rotating-speaker animation of sound. Move wheel up approximately ½ (or more) to engage the effect. Also, try routing the modulation to FREQ A or PW A (or in various combinations with PW B to get different animation effects).

NOTES:

— Select different waveforms on OSC A and OSC B to experiment with different tone colors.

— If the MOD WHEEL section is engaged, try adding to the RELEASE time on the two envelope generators; the animation effect will seem to increase somewhat (since it will have more time to establish itself in the sound).

POLY - MOD FREQ A PW A FILTER DESTINATION SOURCE AMOUNT FILT ENV OSC B

OSCILLATOR A FREQUENCY SHAPE PULSE WIDTH SYNC

MIXER OSC A OSC B NOISE

FILTER CUTOFF RESONANCE ENVELOPE AMOUNT KEYBOARD

CASSETTE SAVE LOAD

MASTER TUNE A-440 TO TAPE FROM TAPE

LFO FREQUENCY SHAPE

OSCILLATOR B FREQUENCY FINE SHAPE PULSE WIDTH LO FREQ KEYBOARD

ATTACK DECAY SUSTAIN RELEASE

AMPLIFIER ATTACK DECAY SUSTAIN RELEASE

WHEEL - MOD FREQ A FREQ B PW A PW B FILTER LFO NOISE DESTINATION SOURCE MIX

GLIDE UNISON

PROGRAMMER PRESET RECORD BANK SELECT BANK PROGRAM 1 5 PROGRAM SELECT

RELEASE VOLUME TUNE

1-5: Flutes

OSC A: up 3 octaves
OSC B: LF mode

MOD WHEEL section can be engaged (if desired) to create a trill effect. The range of the trill is determined by the position of the wheel: the more the wheel is moved up, the greater the range of the trill.

POLY-MOD is being used to create a quasi-tremolo effect (similar to the breath-controlled vibrato/tremolo used by flute players).

PULSE-WIDTH on both oscillators is set at 5; this allows switching of waveforms on OSC A, and on OSC B it leaves open the option to use the pulse wave as a modulation source. The use of the pulse wave on OSC A will create a hollower sound (more like a wooden flute).

NOTES:

— Adjust filter settings (CUTOFF and ENVELOPE AMOUNT) to alter brightness of tone.
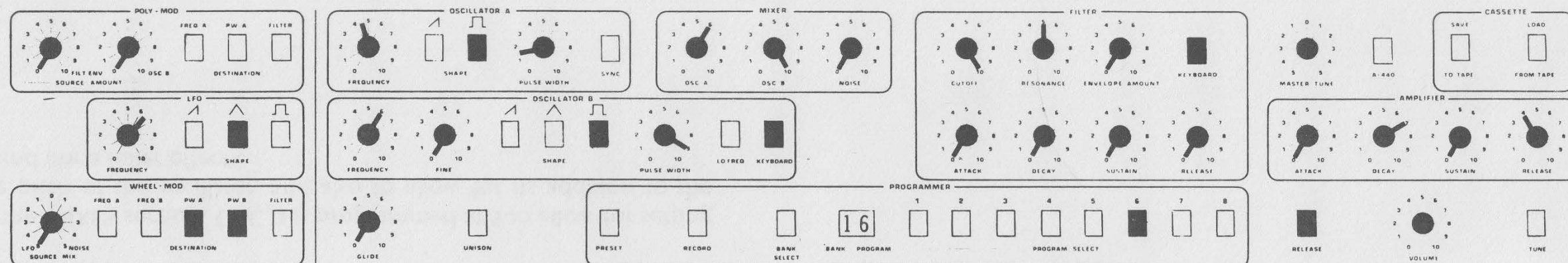
1-6: Harpsichord

OSC A: up 2 octaves
OSC B: up 3 octaves

GENESIS OF THE PATCH: To create the bright, nasal sound of the thin strings of a harpsichord, narrow pulse waves were selected. The FILTER settings are also important: brightness is insured by setting the filter CUTOFF fully open, and the nasal sound is intensified by setting the filter RESONANCE at 5. The amplifier envelope generator is set to simulate a plucked string (since, in a harpsichord, the strings are plucked rather than struck). Even though there is no audible release time on a harpsichord, the RELEASE is set at 4 on the VCA envelope generator so there won't be an audible "whack" when the key is released (caused by the instantaneous closing down of the VCA). The oscillators are set at two different octaves to emphasize the brightness of the harpsichord (and to simulate the sound of the harpsichord with more than one of its stops selected).

MOD WHEEL section can be engaged (if desired) to create a repeating effect. Move wheel up approximately ½ (or more) to engage the effect.

NOTES:

— Adjust oscillators to a wider pulse-width for a fuller sound.

— For a less nasal sound, reduce the amount of filter RESONANCE.

— To change overall tone color mix, change MIXER settings for OSC A and B.

— Try adding an envelope shapeto the FILTER. Envelope generator settings should be similar to those on the amplifier section: adjust filter CUTOFF and ENVELOPE AMOUNT to engage the envelope generator at the proper level.
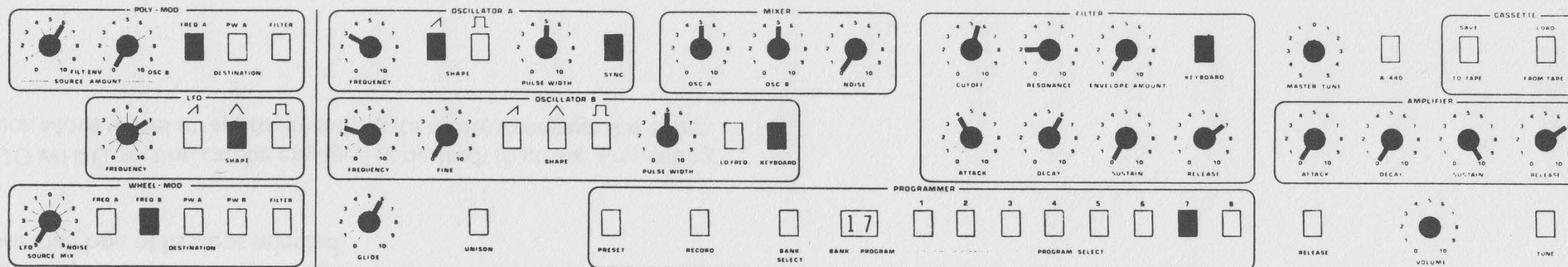
1-7: Sync I

OSC A: up 1 octave + a minor 3rd
OSB B: up 1 octave (basic pitch)

MOD WHEEL is set for a vibrato effect. Move wheel up slightly (⅛ to ¼) to engage vibrato.

GLIDE is programmed in for use with UNISON mode — when the patch is used as a lead line. Glide will engage if UNISON is switched on.

RELEASE is programmed off; switch on to engage the programmed release times — sound will fade slowly after keys are released.

PULSE-WIDTH on both oscillators is set at 5; this allows switching of waveforms on OSC A, and leaves open the possibility of adding OSC B pulse wave to the sound.

In the MIXER section, OSC B is programmed at 5 to allow for setting the pitch of the oscillator, and also to allow for its addition to the sound (for a fuller effect).

Although the filter ENVELOPE AMOUNT is set at 0, the filter envelope generator settings are programmed for use as a modulation source for the POLY-MOD section.

NOTES:

— Adjust OSC A pitch to alter the amount of animation at the beginning of the sound.
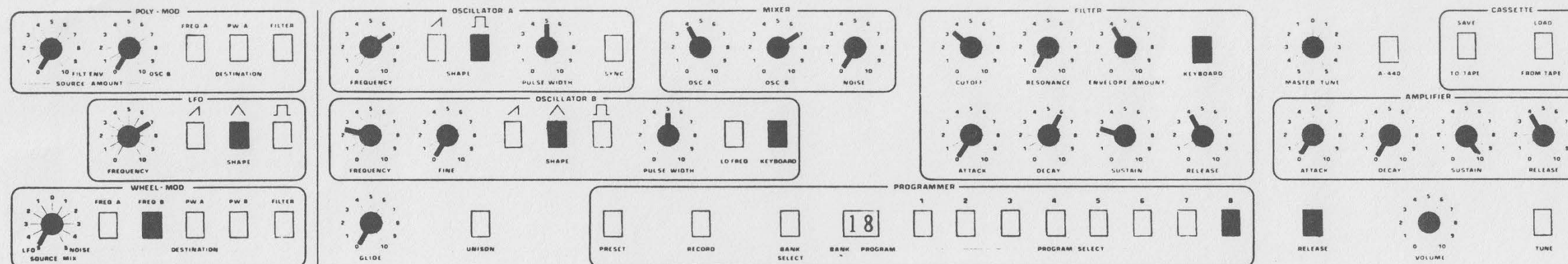
1-8: Percussive Organ

OSC A: up 3 octaves + a perfect 5th
OSC B: up 1 octave (basic pitch)

MOD WHEEL section is set for a vibrato effect. Move wheel up slightly (⅛ to ¼) to engage vibrato.
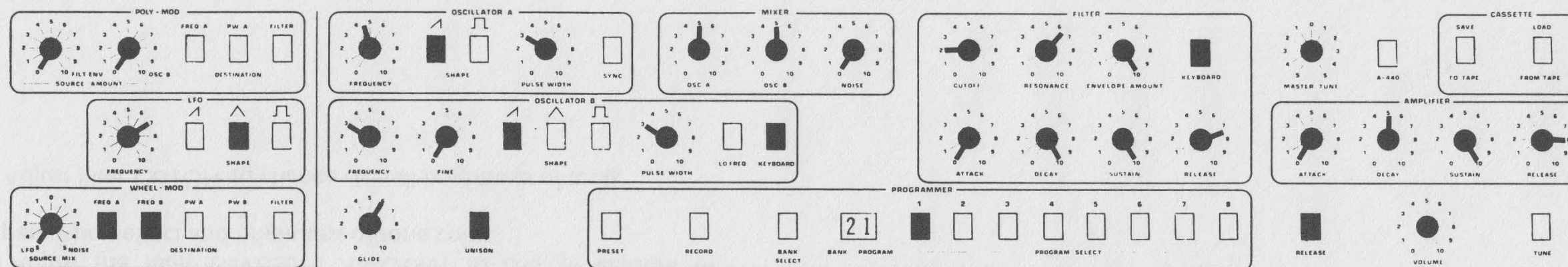
PULSE-WIDTH on OSC B is set at 5, this allows for switching of waveforms.

For proper effect, OSC A must be a square wave (set at approximately 5 and listen for the dropout of the octave — the 2nd harmonic).

NOTES:

— Adjust the filter ENVELOPE AMOUNT to change amount of percussion effect and brightness of tone color.

— Adjust filter CUTOFF to change overall brightness of tone.

2-1: Unison Glide With Resonance

OSC A: up 2 octaves
OSC B: up 1 octave

MOD WHEEL section is set for a vibrato effect. Move wheel up slightly
(⅛ to ¼) to engage vibrato.

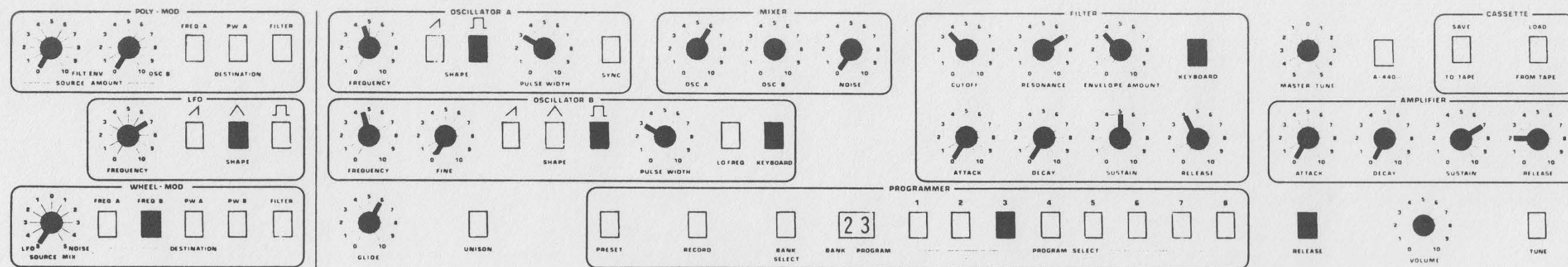PULSE-WIDTH on both oscillators is set at 3; this allows switching of
waveforms.
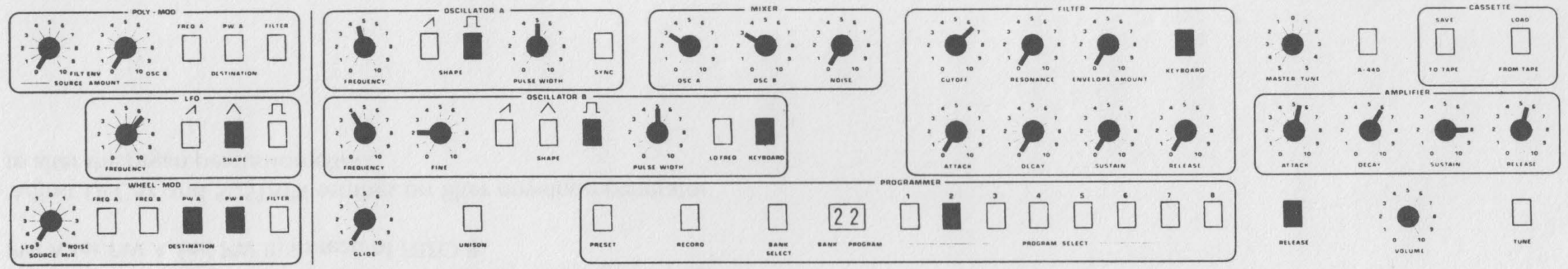
2-2: Harmonium

OSC A: up 2 octaves (basic pitch)
OSC B: up 2 octaves

MOD WHEEL section can be engaged (if desired) to create a chorusing animation-of-sound effect. Move wheel up approximately 1/3 to engage effect.

For French Accordion effect, turn off release.
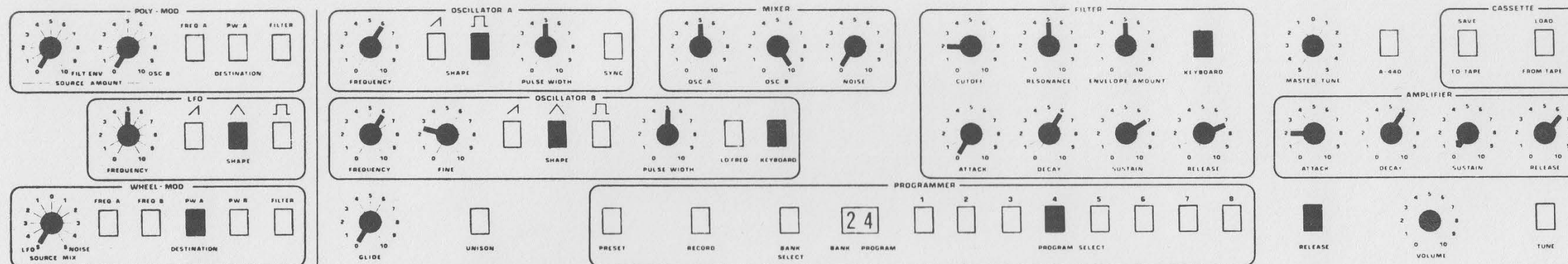
2-3: Organ With Resonance

OSC A: up 2 octaves
OSC B: up 2 octaves

MOD WHEEL section is set for a rotating-speaker effect. Move wheel up slightly (⅛ to ¼) to engage effect.

GLIDE is programmed in for use with UNISON mode — when the patch is used as a lead line. Glide will engage if UNISON is switched on.

NOTES:

— For a thicker sound, detune OSC B by setting FINE tune to approximately 1½.

— For a different animation-of-sound effect, try routing mod to PW A (or PW A and PW B) instead of FREQ B.

— Adjust DECAY and SUSTAIN settings on filter envelope generator to alter the organ percussion effect.
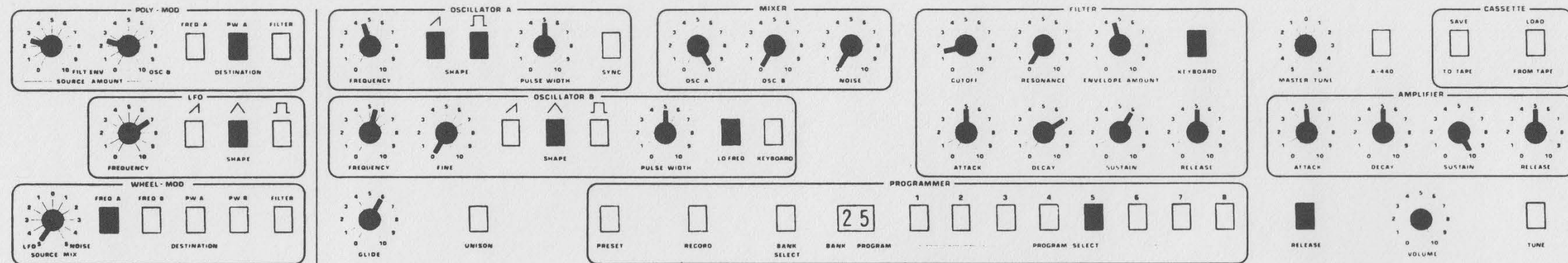
2-4: Toy Piano

OSC A: up 3 octaves
OSC B: up 3 octaves

MOD WHEEL section is set for an animation effect. Move wheel up 1/4 to 1/3 to engage effect.

PULSE-WIDTH on OSC B is set at 5; this allows switching of waveforms.

OSC B is detuned slightly to create the out-of-tune effect that is characteristic of toy pianos. For the best effect, play the keyboard in a detached manner (i.e. don't hold the keys down for very long).

POLY · MOD
FILT ENV   OSC B
SOURCE AMOUNT
FREQ A PW A FILTER
DESTINATION

OSCILLATOR A
FREQUENCY   SHAPE   PULSE WIDTH   SYNC

MIXER
OSC A   OSC B   NOISE

FILTER
CUTOFF   RESONANCE   ENVELOPE AMOUNT   KEYBOARD

CASSETTE
SAVE   LOAD
MASTER TUNE   A-440   TO TAPE   FROM TAPE

LFO
FREQUENCY   SHAPE

OSCILLATOR B
FREQUENCY   FINE   SHAPE   PULSE WIDTH   LO FREQ   KEYBOARD

ATTACK   DECAY   SUSTAIN   RELEASE

AMPLIFIER
ATTACK   DECAY   SUSTAIN   RELEASE

WHEEL · MOD
LFO   NOISE
SOURCE MIX
FREQ A FREQ B PW A PW B FILTER
DESTINATION

PROGRAMMER
GLIDE   UNISON
PRESET   RECORD   BANK SELECT   BANK   PROGRAM
2 5
1 2 3 4 5 6 7 8
PROGRAM SELECT
RELEASE   VOLUME   TUNE

2-5: Trumpet/Flute

OSC A: up 2 octaves
OSC B: LF mode
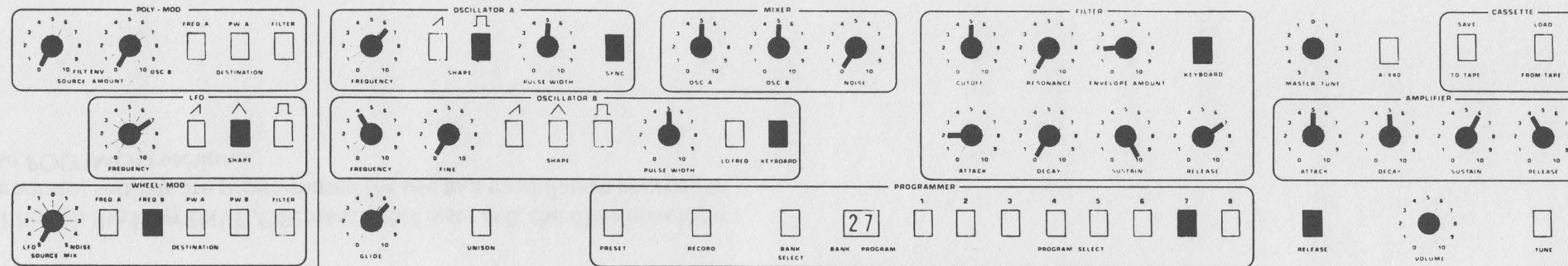
MOD WHEEL section is set for a vibrato effect. Move wheel up slightly (⅛ to ¼) to engage effect.

GLIDE is programmed in for use with UNISON mode — when the patch is used as a lead line. Glide will engage if UNISON is switched on.

PULSE-WIDTH on OSC B is set at 5; this allows switching of waveforms.

OSC A is set as a square wave (set at approximately 5 and listen for the dropout of the octave — the 2nd harmonic).

NOTES:

— Select different waveforms on OSC A and OSC B to experiment with different tone colors.

— Adjust filter settings (CUTOFF and ENVELOPE AMOUNT) to alter brightness of tone.

POLY - MOD FREQ A PW A FILTER FILT ENV OSC B DESTINATION SOURCE AMOUNT

OSCILLATOR A FREQUENCY SHAPE PULSE WIDTH SYNC

MIXER OSC A OSC B NOISE

FILTER CUTOFF RESONANCE ENVELOPE AMOUNT KEYBOARD

MASTER TUNE A-440

CASSETTE SAVE LOAD TO TAPE FROM TAPE

LFO FREQUENCY SHAPE

OSCILLATOR B FREQUENCY FINE SHAPE PULSE WIDTH LO FREQ KEYBOARD

ATTACK DECAY SUSTAIN RELEASE

AMPLIFIER ATTACK DECAY SUSTAIN RELEASE

WHEEL - MOD FREQ A FREQ B PW A PW B FILTER LFO NOISE SOURCE MIX DESTINATION

GLIDE UNISON

PROGRAMMER 1 2 3 4 5 6 7 8 PRESET RECORD BANK SELECT BANK PROGRAM PROGRAM SELECT

2 6

RELEASE VOLUME TUNE

2-6: Filter Mod

OSC A: up 2 octaves
OSC B: up 2 octaves

MOD WHEEL section is set for a vibrato/tremolo effect. Move wheel up slightly (⅛ to ¼) to engage effect.

GLIDE is programmed in for use with UNISON mode — when the patch is used as a lead line. Glide will engage if UNISON is switched on.

RELEASE is programmed off; switch on to engage the programmed release times.

PULSE-WIDTH on both oscillators is set at 5; this allows switching of waveforms.

Although the filter ENVELOPE AMOUNT is set at 0, the filter envelope generator settings are programmed for use as a modulation source for the POLY-MOD section.

2-7: Reed Organ

OSC A: up 3 octaves + a major 3rd
OSC B: up 2 octaves (basic pitch)

MOD WHEEL section is set for a vibrato effect. Move wheel up slightly
(⅛ to ¼) to engage effect.

In the MIXER section, OSC B is programmed at 5 to allow for setting
the pitch of the oscillator, and also to allow for its addition to the
sound (for a fuller effect).

PULSE-WIDTH on OSC B is set at 5; this leaves open the possibility of
adding OSC B pulse wave to the sound.

NOTES:

— Select different waveforms on OSC A (and OSC B) to experiment
   with different tone colros.

— Adjust filter CUTOFF setting to alter brightness of tone.
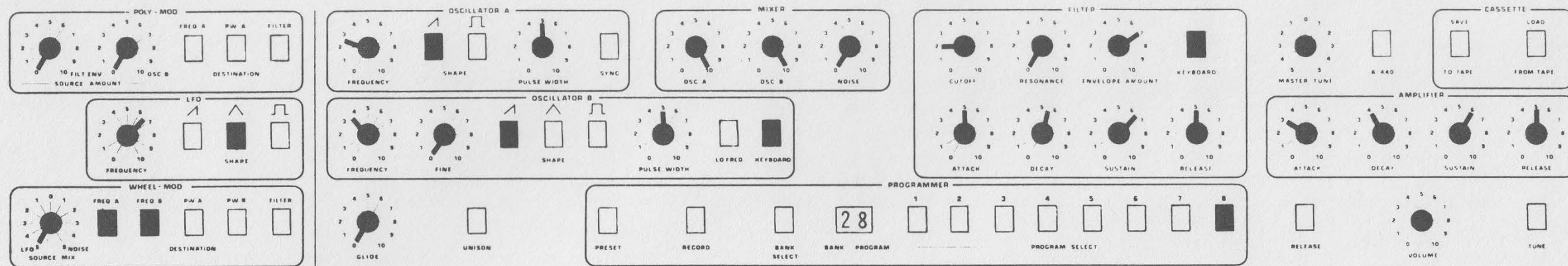
2-8: Brass In Fifths

OSC A: up 1 octave
OSC B: up 1 octave + a perfect 5th

MOD WHEEL section is set for a vibrato effect. Move wheel up slightly
(⅛ to ¼) to engage vibrato.

RELEASE is programmed off; switch on to engage the programmed
release time.

PULSE-WIDTH on both oscillators is set at 5; this allows switching of
waveforms.
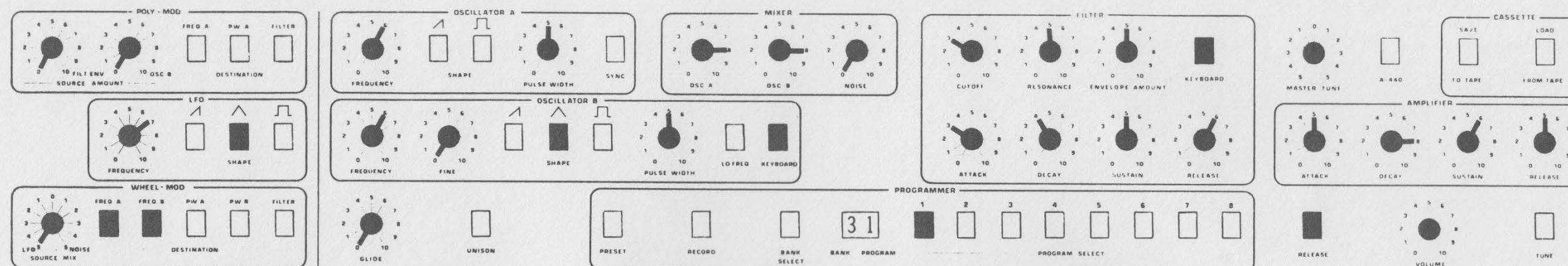
3-1: Pipe Organ Flutes

OSC A: up 3 octaves
OSC B: up 3 octaves

MOD WHEEL is set for a vibrato effect. Move wheel up slightly (⅛ to ¼) to engage effect.

OSC A is programmed off (no waveform selected); however, the MIXER section is set to allow for its addition to the sound.

PULSE-WIDTH on both oscillators is set at 5; this allows switching of waveforms on OSC B, and leaves open the possibility of adding OSC A pulse wave to the sound.

NOTES:

— The wooden "chiff" effect in the initial portion of the tone (a characteristic of pipe organ attack transients) is created mainly by the settings in the FILTER section. The filter envelope generator settings (particularly the ATTACK, DECAY, AND SUSTAIN), working in conjunction with the filter CUTOFF, ENVELOPE AMOUNT, and RESONANCE settings, are critical. (The use of the mellow triangle waveshape in OSC B is also important to the overall tone color.) To understand how these settings work together to create the effect, try altering them all slightly, one at a time and in combination.
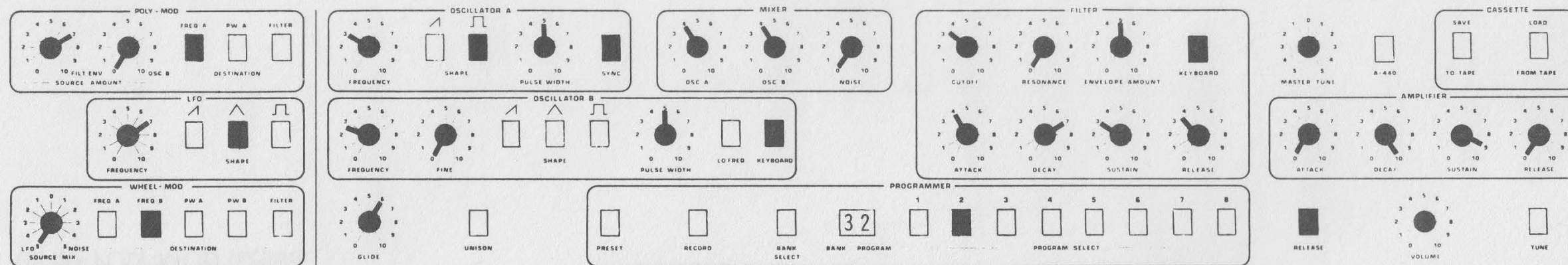
3-2: Sync II

OSC A: up 1 octave
OSC B: up 1 octave

MOD WHEEL section is set for a vibrato effect. Move wheel up slightly (⅛ to ¼) to engage effect.

OSC B is programmed off (no waveform selected); however, the MIXER section is set to allow for its addition to the sound.

PULSE-WIDTH on both oscillators is set at 5; this allows switching of waveforms on OSC A, and leaves open the possibility of adding OSC B pulse wave to the sound.

GLIDE is programmed in for use with UNISON mode — when the patch is used as a lead line. Glide will engage if UNISON is switched on.
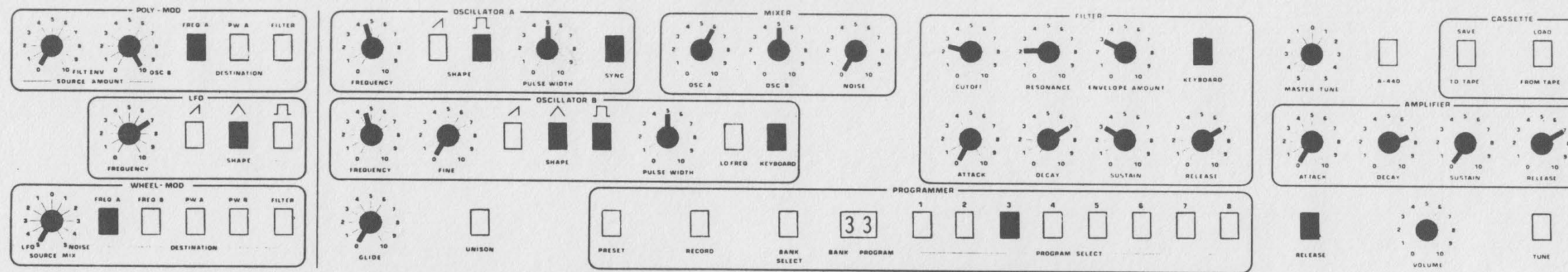
3-3: Electric Piano

OSC A: up 2 octaves
OSC B: up 2 octaves

MOD WHEEL section can be engaged (if desired) to create a vibra-phone-like vibrato/tremolo effect. Move wheel on full to engage effect.

To simulate a piano sustain pedal, switch RELEASE off and use the footswitch to engage and disengage the release settings.

NOTES:

— Since the two oscillators are in SYNC, the effect of OSC B as a modulation source in the POLY-MOD section is minimal; if SYNC is switched off, OSC B will have a strong clangorous effect via the POLY-MOD section.
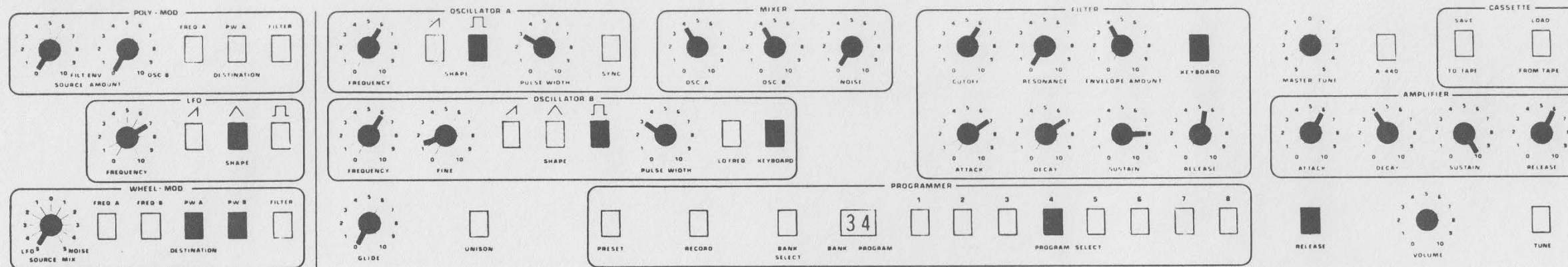
3-4: High Strings

OSC A: up 3 octaves
OSC B: up 3 octaves

MOD WHEEL must be moved up 1/3 to 1/2 for proper effect. Consider adjusting the MOD WHEEL for different registers on the keyboard; more for playing in the higher register, less for the lower register.

NOTES:

— Adjust filter CUTOFF and ENVELOPE AMOUNT to change brightness of tone.

— Remember that in order to create the effect of a high string section you must do your part: you must play notes that are idiomatic for strings. If you play this patch with piano phrasing, it will not sound like a string section.
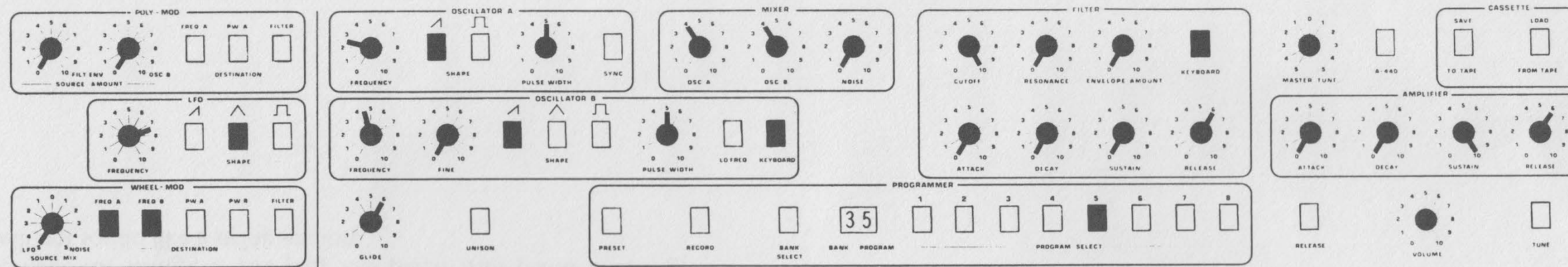
3-5: Octave Sawteeth

OSC A: up 1 octave
OSC B: up 2 octaves

MOD WHEEL section is set for a vibrato effect. Move wheel up slightly (⅛ to ¼) to engage vibrato.

GLIDE is programmed in for use with UNISON mode — when the patch is used as a lead line. Glide will engage if UNISON is switched on.

RELEASE is programmed off; switch on to engage the programmed release times.

PULSE-WIDTH on both oscillators is set at 5; this allows switching of waveforms.

POLY-MOD FREQ A PW B FILTER
OSC B DESTINATION
FILT ENV SOURCE AMOUNT

OSCILLATOR A
FREQUENCY SHAPE PULSE WIDTH SYNC

MIXER
OSC A OSC B NOISE

FILTER
CUTOFF RESONANCE ENVELOPE AMOUNT KEYBOARD

CASSETTE
SAVE LOAD
MASTER TUNE A-440 TO TAPE FROM TAPE

LFO
FREQUENCY SHAPE

OSCILLATOR B
FREQUENCY FINE SHAPE PULSE WIDTH LO FREQ KEYBOARD

ATTACK DECAY SUSTAIN RELEASE

AMPLIFIER
ATTACK DECAY SUSTAIN RELEASE

WHEEL-MOD
FREQ A FREQ B PW A PW B FILTER
LFO NOISE DESTINATION
SOURCE MIX

GLIDE UNISON

PROGRAMMER
PRESET RECORD BANK SELECT BANK PROGRAM 3 6 1 2 3 4 5 6 7 8 PROGRAM SELECT

RELEASE VOLUME TUNE
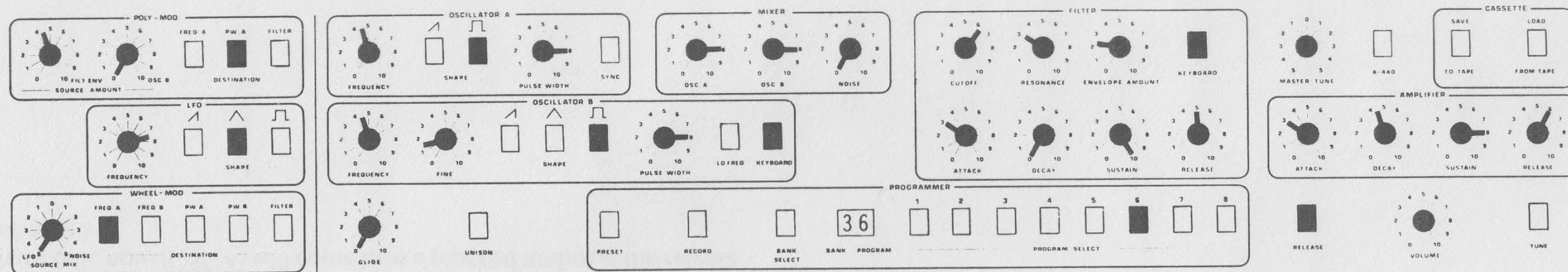
3-6: Release-Repeat

OSC A: up 2 octaves
OSC B: up 2 octaves

The release effect in this patch is created by the POLY-MOD section.
The filter envelope generator is being used as the modulation source,
routed to PW A; since the SUSTAIN is set at 10, the PULSE-WIDTH of
OSC A is driven to 10 and degenerates to DC — in other words, no
sound is generated. When the key is released, the filter RELEASE is
faster than the amplifier RELEASE, so that OSC A is allowed to sound.
In other words, OSC B provides the sound while a key is depressed,
and OSC A provides the repeat effect.

MOD WHEEL section can be engaged (if desired) to create a chorusing
effect on the release portion of the sound. Move wheel up to engage
effect (from ⅛ to ½, depending on effect desired).

NOTES:

— Detuning of OSC B separates the basic sound from the "release-
repeat" sound by making the basic sound (OSC B) slightly higher
in pitch than the repeat sound (OSC A).
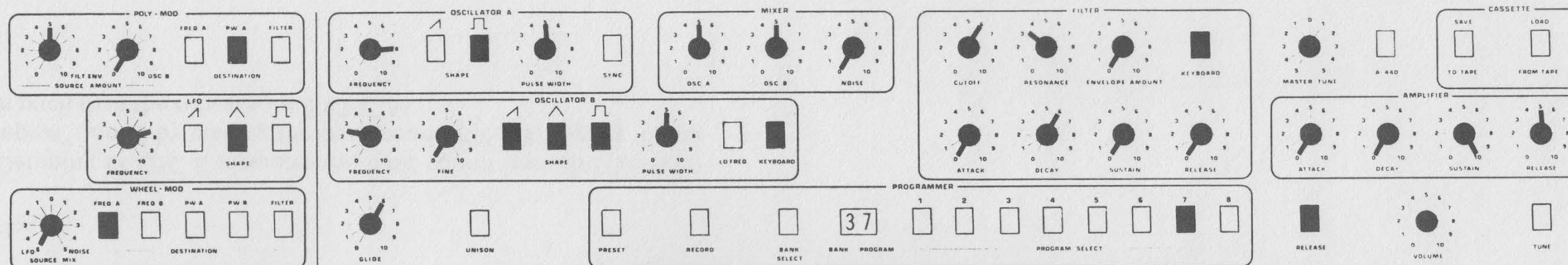
3-7: Delayed Harmonic
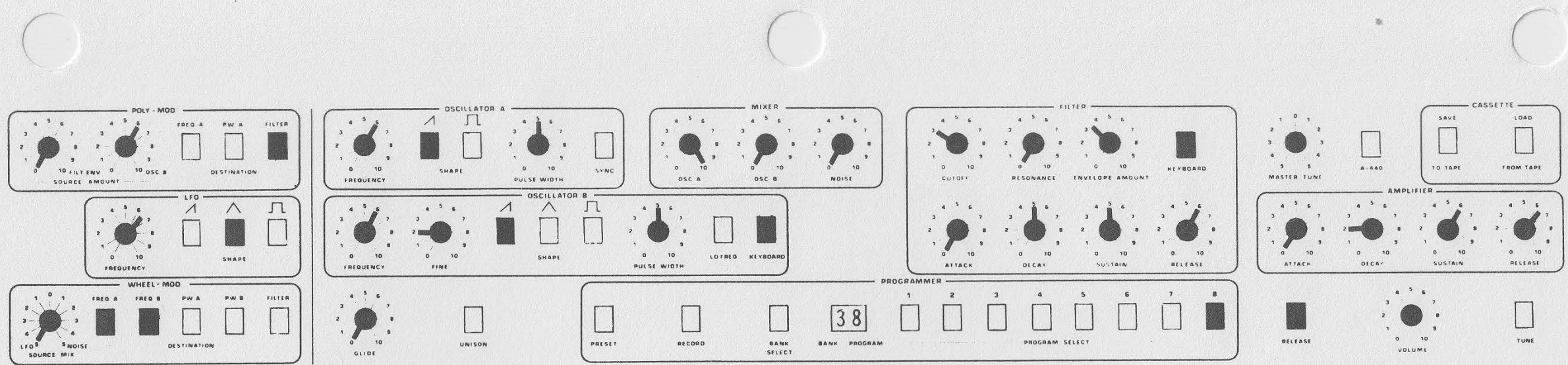
OSC A: up 4 octaves
OSC B: up 1 octave (basic pitch)

The delayed harmonic effect in this patch is created by the POLY-MOD section. The filter envelope generator is being used as the modulation source, routed to PW A; at first, the voltage from the envelope generator is so high that the PULSE-WIDTH is driven to 10 and generates to DC — in other words, no sound is generated. As the DECAY of the envelope generator continues, the voltage lowers, and OSC A is allowed to sound. Since it is pitched 3 octaves above OSC B (the primary sound source), it gives the effect of an overtone.

The type of effect generated by this patch depends on the technique used on the keyboard: if the keys are held down, you will get the basic "delayed harmonic" effect; if you play with a staccato touch, the harmonic note (OSC A) will come in as a plucked timbre at the release of each key.

MOD WHEEL section is set for a vibrato effect on the harmonic note only (OSC A). Move wheel up slightly (⅛ to ¼) to engage vibrato.

GLIDE is programmed in for use with UNISON mode — when the patch is used as a lead line. Glide will engage if UNISON is switched on.

3-8: Echo-Repeat

OSC A: up 3 octaves
OSC B: up 3 octaves

PULSE-WIDTH on both oscillators is set at 5; this allows switching of waveforms.

MOD WHEEL section can be engaged (if desired) to add a swirling effect to the sound. Move wheel up ¼ to ½ to engage effect. For a more bizarre effect, move wheel past the ½ position.

The detuning of OSC B controls the speed of the repeat effect: the more detuning (i.e. the higher the FINE TUNE is set), the faster the repeat effect. Also, the repeat effect will (in general) be faster in the higher register of the keyboard.
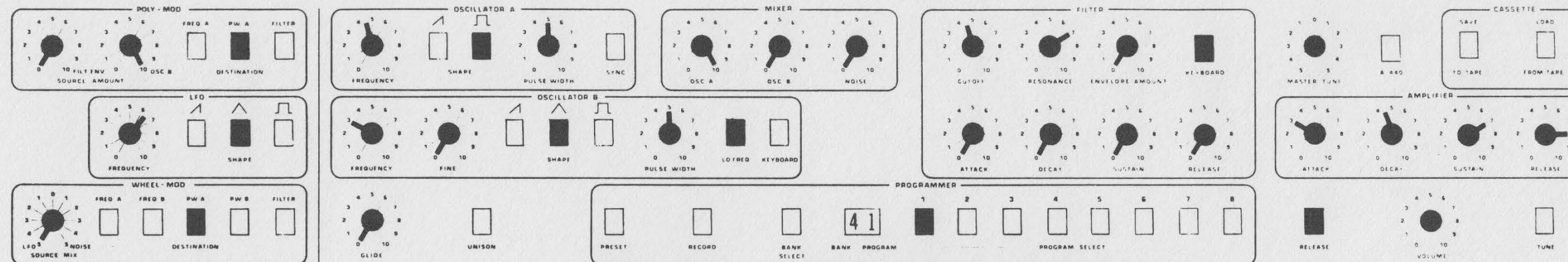
4-1: Pulse-Width Mod

OSC A: up 2 octaves
OSC B: LF mode

Move MOD WHEEL up (approximately 1/3 to 1/2) for added pulse-width modulation effect.

PULSE-WIDTH on OSC B is set at 5; this leaves open the option of using the pulse wave as a modulation source.
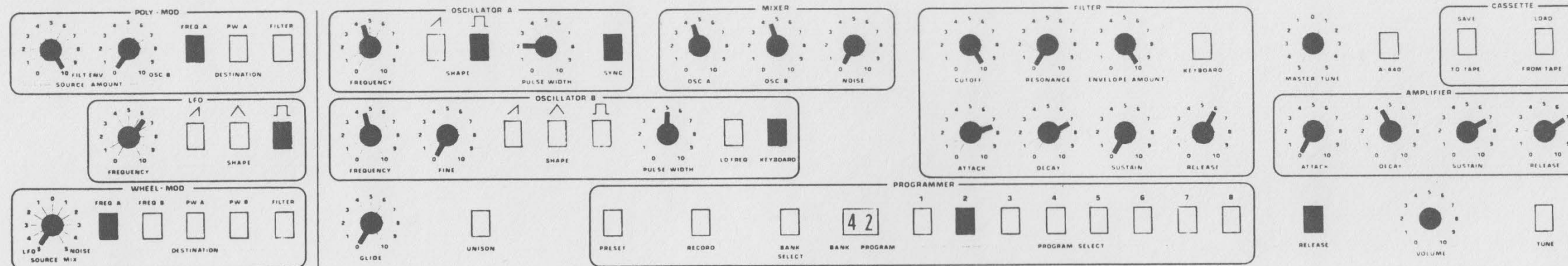
4-2: Slow Sync Sweep

OSC A: up 2 octaves
OSC B: up 2 octaves

For the full sweeping effect, hold keys down (i.e. play long, sustained tones).

MOD WHEEL section is set for a vibrato effect. Move wheel up slightly (1/8 to 1/4) to engage effect.

OSC B is programmed off (no waveform selected); however, the MIXER section is set to allow for its addition to the sound.

PULSE-WIDTH on OSC B is set at 5; this leaves open the possibility of adding OSC B pulse wave to the sound.
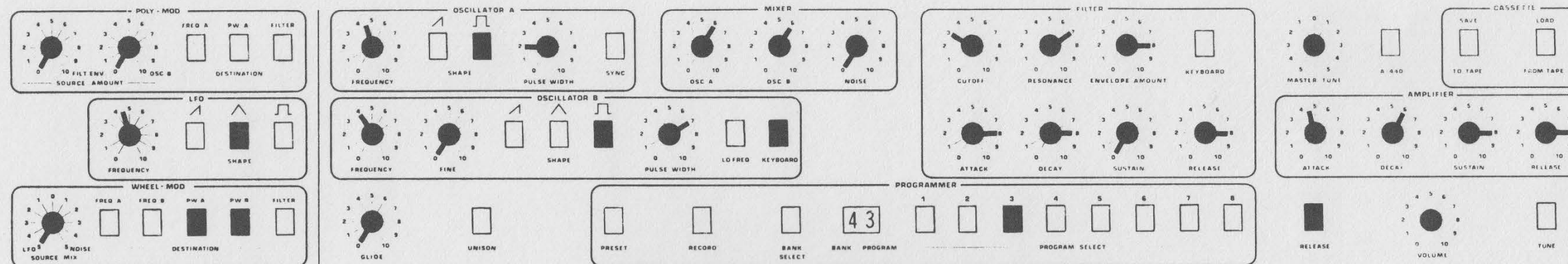
4-3: Fourths With Resonance

OSC A: up 2 octaves
OSC B: up 1 octave + a perfect 5th

To allow time for the full effect to develop, hold keys down.

MOD WHEEL section can be engaged (if desired) to create an alternating-fourth effect (OSC A and OSC B alternate as the sound source). Move MOD wheel full up to engage this effect.
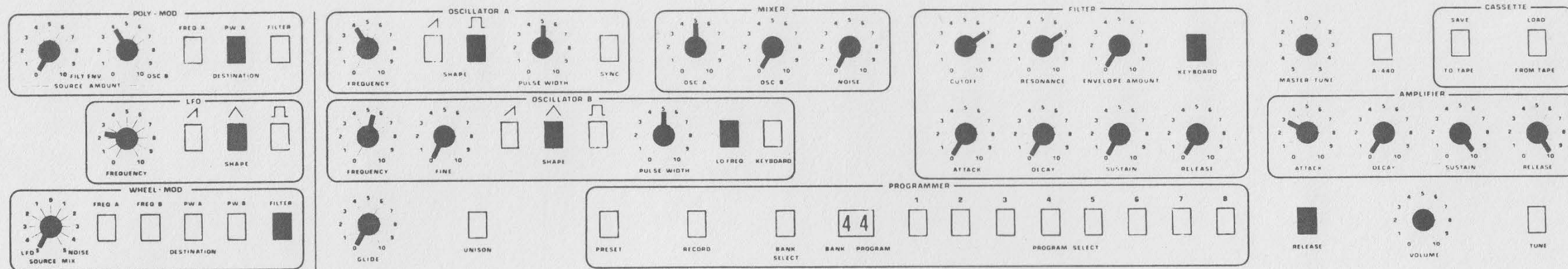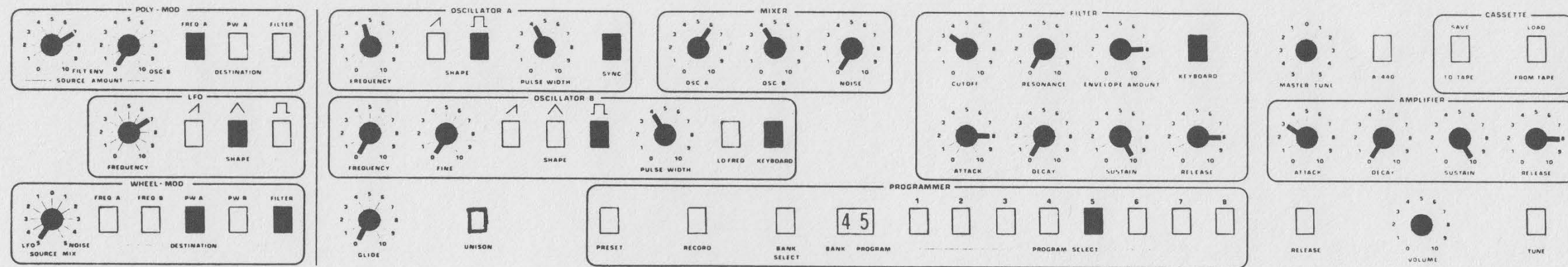
4-4: Sweeping Harmonics

OSC A: up 2 octaves
OSC B: LF mode

MOD WHEEL should be moved up 1/3 to 2/3 for best effect. The slow
LFO triangle wave causes the filter to sweep slowly through the more
rapidly changing (via the POLY-MOD routing of OSC B) harmonics of
OSC A's pulse waves.

Filter RESONANCE is set on the edge of oscillation.

4-5: Slow Sync

OSC A: up 2 octaves
OSC B: up 0

The length of time that the keys are held down makes a strong difference in the overall sweep effect.

RELEASE is programmed off; switch on to engage the programmed release time.

MOD WHEEL section can be engaged (if desired) to add a strong tremolo/repeat effect to the sound. Move wheel up approximately 2/3 to engage effect.
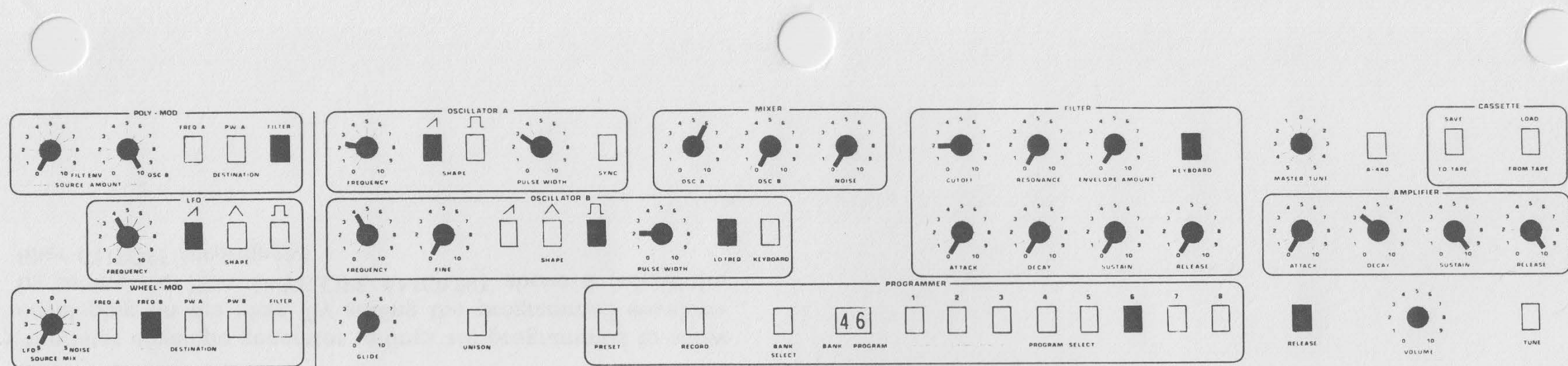
# 4-6: Random Arpeggiator

OSC A: up 1 octave
OSC B: LF mode

In order to create a complete "arpeggiation" effect, more than one note must be struck on the keyboard. The notes need not be held down, since the amplifier RELEASE is set at 10.

MOD WHEEL section can be engaged (if desired) to set up changes in the speed of repetition of each "arpeggiated" note. Move wheel full up to engage effect.

PULSE-WIDTH on OSC A is set at 3; this allows switching of waveforms.

NOTES:

— Adjust FREQUENCY of OSC A to change speed of arpeggiation.

— Adjust PULSE-WIDTH of OSC A to change duration of arpeggiated notes: the greater the pulse-width setting, the shorter the duration.

— Try routing mod to FREQ A instead of FREQ B; this will create a sliding pitch effect on each note.
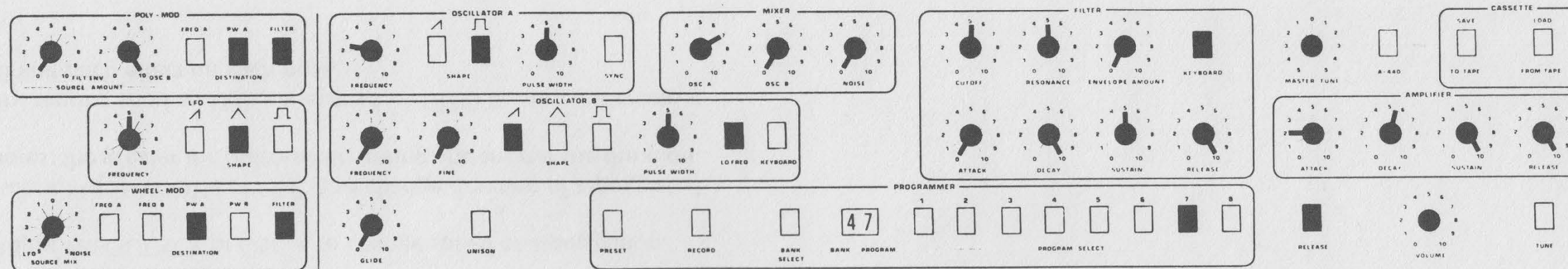
4-7: Sawtooth Arpeggiator

OSC A: up 1 octave
OSC B: LF mode

MOD WHEEL can be engaged (if desired) to increase the overall effect. Move wheel full up to engage effect.

NOTES:

— For a completely different effect, switch OSC B LO FREQ off and switch OSC B KEYBOARD on.

— PULSE-WIDTH on OSC B is set at 5, to leave open the possibility of using the pulse wave as a modulation source. Try using both the pulse wave and the triangle wave for different effects.

— The filter envelope generator settings are programmed to allow enveloping on the filter. Try adding the programmed envelope by setting the filter ENVELOPE AMOUNT above 0 (adjust the filter CUTOFF accordingly).
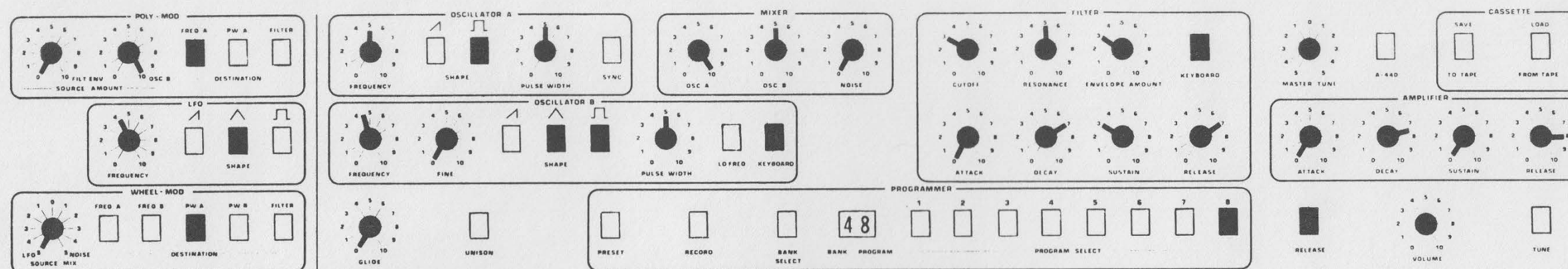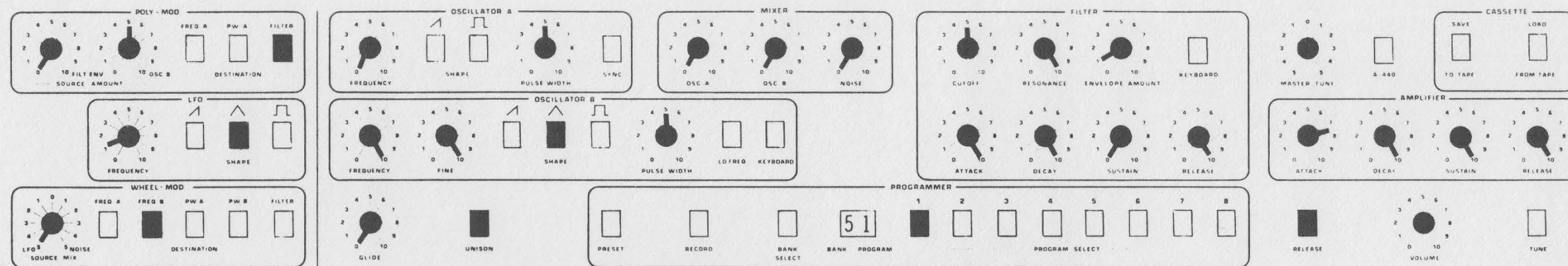
4-8: Clangorous Bells

OSC A: up 2 octaves + a tritone
OSC B: up 2 octaves - less ½ step

MOD WHEEL section can be engaged (if desired) to create a repeat/ echo effect. Move wheel ½ to full to engage effect.

NOTES:

— For added effect, increase filter RESONANCE setting.
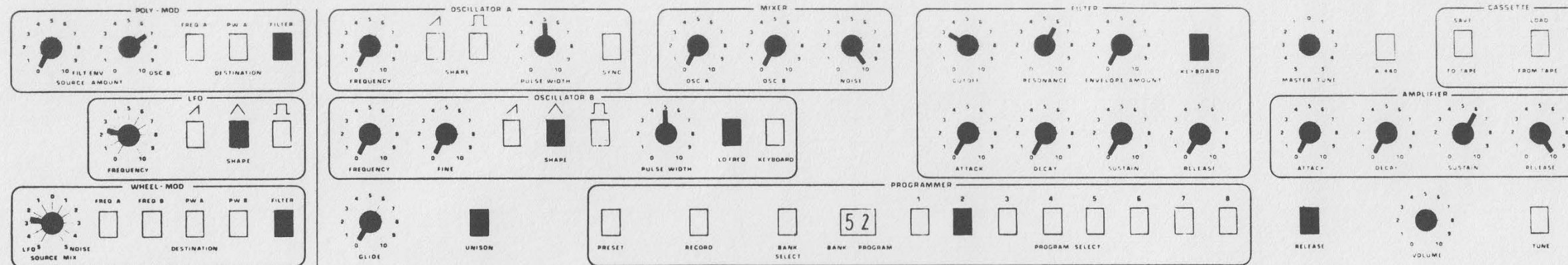
5-1: Alien

OSC A: up 0
OSC B: up 5 octaves (plus FINE tune on 10)

MOD WHEEL must be moved full up for proper effect.

To allow time for full effect to develop, hold key down for a long time (approximately 30 seconds).

NOTES:

— For extra effect, route WHEEL-MOD to FILTER in addition to FREQ B.

— Increase filter ENVELOPE AMOUNT to exaggerate effect.
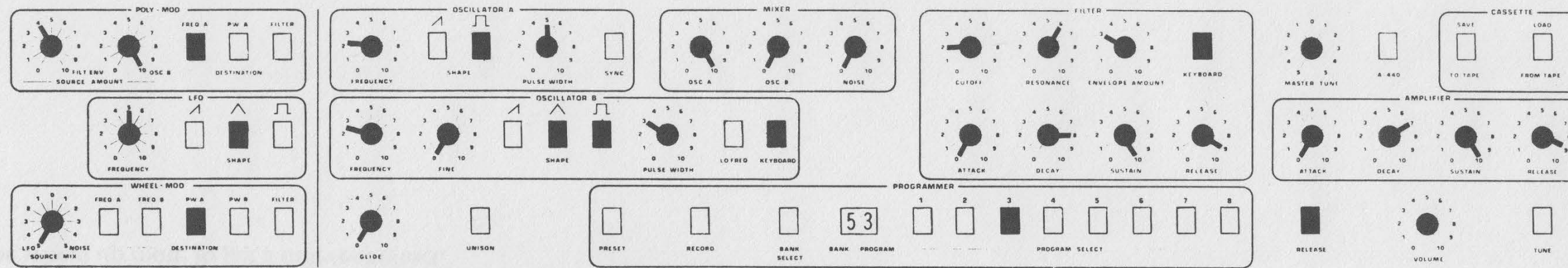
5-2: Noise Sweep

OSC A: up 0
OSC B: LF mode

Oscillators are not part of the sound source of this patch.

Play different registers on the keyboard to adjust the overall brightness of the effect.

PULSE-WIDTH on both oscillators is set at 5; this leaves open the possibility of adding OSC A pulse wave to the sound, and also allows for the use of OSC B pulse wave as a modulation source.

MOD WHEEL can be engaged (if desired) to add to overall effect. Move wheel up approximately 1/3 to engage effect. Also, try moving the wheel up more to get a different effect.

POLY - MOD

SOURCE AMOUNT   FILT ENV   OSC B   FREQ A   PW A   FILTER   DESTINATION

OSCILLATOR A
FREQUENCY   SHAPE   PULSE WIDTH   SYNC

MIXER
OSC A   OSC B   NOISE

FILTER
CUTOFF   RESONANCE   ENVELOPE AMOUNT   KEYBOARD

CASSETTE
SAVE   LOAD
MASTER TUNE   A 440   TO TAPE   FROM TAPE

LFO
FREQUENCY   SHAPE

OSCILLATOR B
FREQUENCY   FINE   SHAPE   PULSE WIDTH   LO FREQ   KEYBOARD

ATTACK   DECAY   SUSTAIN   RELEASE

AMPLIFIER
ATTACK   DECAY   SUSTAIN   RELEASE

WHEEL - MOD
SOURCE MIX   LFO   NOISE   FREQ A   FREQ B   PW A   PW B   FILTER   DESTINATION

GLIDE   UNISON

PROGRAMMER
PRESET   RECORD   BANK SELECT   BANK   PROGRAM   1 2 3 4 5 6 7 8   PROGRAM SELECT

5 3

RELEASE   VOLUME   TUNE

5-3: Descending Bells

OSC A: up 1 octave
OSC B: up 1 octave

MOD WHEEL section can be engaged (if desired) to create a phaseshift effect. Move wheel up ½ to ¾ to engage effect.
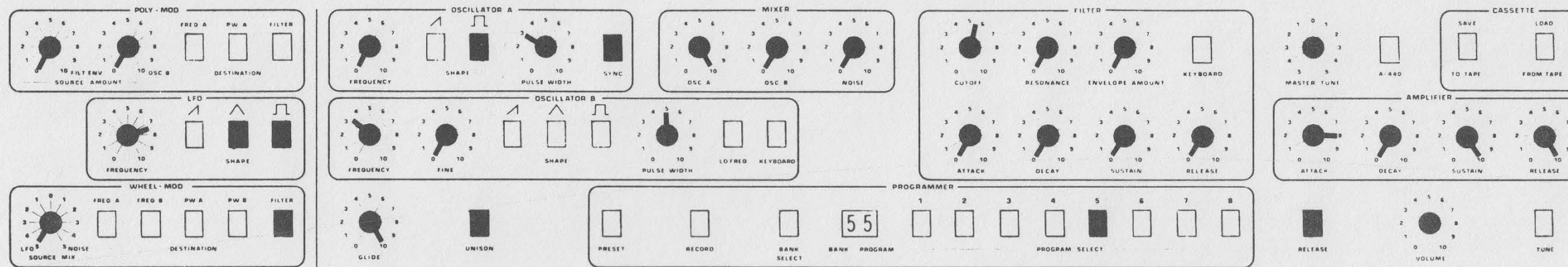
NOTES:

— Adjust filter CUTOFF setting to alter brightness of tone.
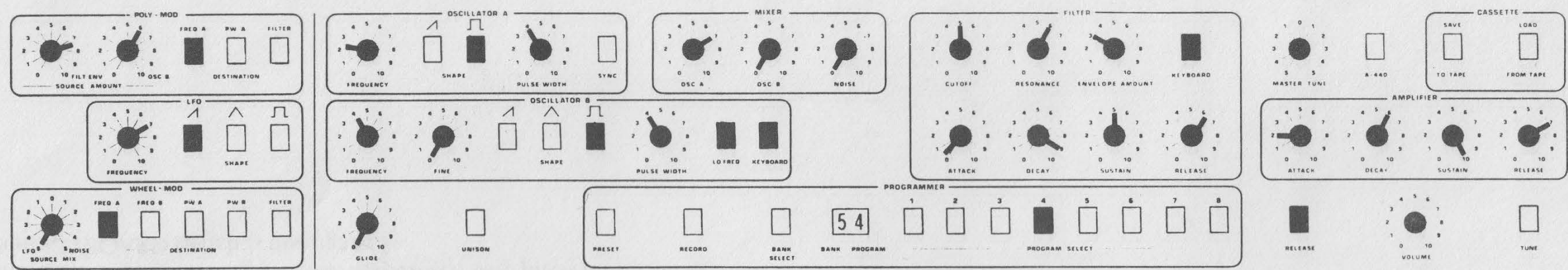
5-4: Descending Pulse Wave Mod

OSC A: up 1 octave
OSC B: LF mode

MOD WHEEL section can be engaged (if desired) to add an extra effect to the overall sound. Move wheel up approximately ½ to engage effect.

5-5: Helicopter

OSC A: up 0
OSC B: tuned to low E (1 octave + major 3rd above lowest note).

MOD WHEEL section is set to create "chopper" effect. Move wheel up at least 1/3 to engage effect. For increased effect, move wheel up 1/2 to full. If MOD wheel is turned off, sound will resemble a distant airplane squadron rather than a helicopter.

For best helicopter effect, play keyboard in the bottom 3 octaves. Try "flying" the sound by playing low C and middle C alternately on the keyboard while moving the PITCH and MOD wheels slightly to simulate approach and departure of aircraft.

Tune OSC B after turning KEYBOARD switch off; pitch may change when KEYBOARD switch is disengaged.
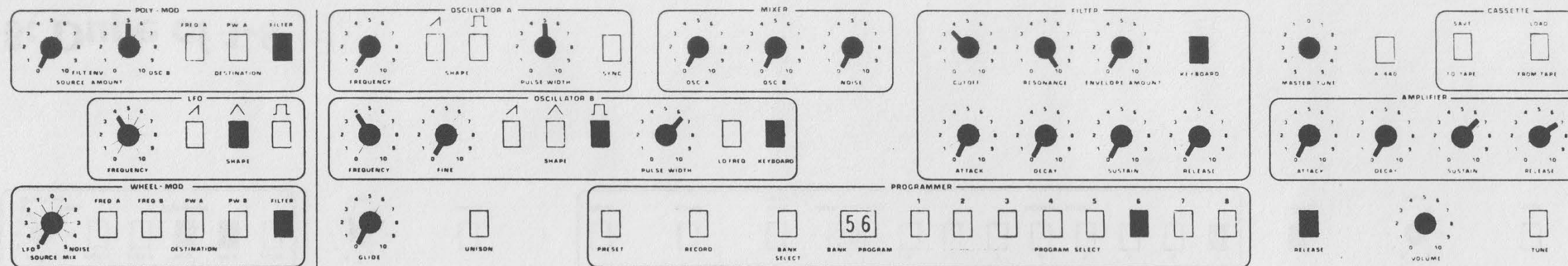
5-6: Resonance Bells

OSC A: up 0
OSC B: up 2 octaves

MOD WHEEL section can be engaged (if desired) to create a sweeping pitch effect. Move wheel up approximately 1/3 to engage effect.

NOTES:

— Adjust filter CUTOFF to alter range of bells and overall tone color.